



# Strengthening Linkages Between Policy Research and Policy Making for Sustainable Development in Africa

Edited by  
**Nicholas Ozor, Kevin C. Urama, and Anthonia Achike**

**A PUBLICATION OF THE AFRICAN TECHNOLOGY POLICY STUDIES NETWORK (ATPS)**





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The African Technology Policy Studies Network (ATPS) is a multi-disciplinary network of researchers, private sector actors and policy makers promoting the generation, dissemination, use and mastery of science, technology and innovation (ST&I) for African development, environmental sustainability and global inclusion. ATPS intends to achieve its mandate through research, capacity building and training, science communication/dissemination and sensitization, participatory multi-stakeholder dialogue, knowledge brokerage, and policy advocacy.



Published by the African Technology Policy Studies Network  
P O Box 10081, 00100 GPO Nairobi Kenya

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ISBN: 978-9966-030-78-8





# Acknowledgement

This book is a product of a series of consultative dialogues and research implemented by the African Technology Policy Studies Network (ATPS) including stakeholder workshops and international conferences. The collection of papers in the book documents strategies for strengthening linkages between policy research, policymaking and policy implementation for a more inclusive sustainable development, drawing on experiences and case studies in Africa and elsewhere.

We wish to acknowledge the financial support received for the research activities from our consortium of partners including the Ministerie van Buitenlandse Zaken (DGIS) the Netherlands, the Rockefeller Foundation, the Open Society Foundation (OSF) and some African Governments, amongst others. We are particularly grateful to the Kenyan Government for hosting the ATPS Secretariat and especially the National Council for Science and Technology (NCST) for their collaboration and support for ATPS Programs. We thank all the ATPS members and stakeholders who participated in the conferences, workshops and other activities leading to this publication. We acknowledge immensely the editorial inputs from Dr. Anthonia Achike of the University of Nigeria, Nsukka who joined us in the editing the book volume.

# Foreword

In keeping with its unrelenting effort to establish a strong science and technology base for research and policy making in Africa, the African Technology Policy Studies (ATPS) undertook various activities to better understand strategies for 'Strengthening Linkages between Policy Research, Policymaking and Policy Implementation for Sustainable Development in Africa. This follows identification of weak collaboration and linkages amongst the quadruple helix: Policymakers, Science Experts, Private Sector Actors, and the Civil Society as a major snag in evidence based policy development and policy implementation on the continent. The research activities involved consultative exercises with stakeholders within and outside Africa through a series of workshops, international conferences, bilateral interviews and commissioned papers. The final workshop was held from 7th to 11th November 2011 in Mombasa- Kenya during the annual convening of the ATPS membership and stakeholders.

This book volume presents key papers on the subject drawn from the conference presentations, workshops and the commissioned papers. All the authors present a common position on the need to strengthen the links amongst the disparate but mutually re-inforcing arms of successful policy development and implementation cycles for more inclusive growth in all economies. The challenges and consequences of African researchers, private sector actors and civil society actors being left at the fringes of policy-making processes in Africa at both national and regional levels were described as dare for sustainable development on the continent. It was noteworthy that African policies are seldom based on empirical evidences either garnered through consultations amongst citizens or through policy research by African experts. Researches conducted in Africa by Africans are seldom used for policy-making leaving many policies poorly socialised within African realities. On the other hand, policymakers face the challenge of relying on Consultants from outside the continent be it from the World Bank, International Monetary Fund, United nations Agencies, and other global institutions and networks of excellence as most research conducted in Africa by African institutions and experts are largely informed by the priorities of the funding partners, mostly from the global North. It is therefore not suprising to find that the gaps between policies and implementation of the same remain wide and increasing in the continent. The challenges are complex and vicious in nature but there is no gainsaying the need to strengthen the linkages between policy research, policymaking, and policy implementation if Africa's struggle to achieve sustainable development is to be realised.

Readers in general and African stakeholders in particular are therefore invited to give due consideration to the papers presented in this book and implement relevant recommendations.

**Dr. Nicholas Ozor**  
**Executive Director of ATPS**

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# Section 1

## **Key Concepts and Issues in Policy Research, Policy Making and Policy Implementation**

# 1. Understanding the Linkage between Research, Policy and Practice

**Prof. Shaukat Abdulrazak**

*CEO, National Council for Science & Technology Kenya, and  
Chair ATPS Board of Directors*

## **Abstract**

*To achieve self-rule and democratic governance of Science, Technology and Innovation (STI), African governments must adopt proactive policies that fully embed STI in their societies. The paradox, however, is that Africa has developed many policies but most end up gathering dust on shelves because of the big disconnect that exists between scientists/researchers, policymakers, the private sector and the civil society. For proper adoption and implementation of STI, effective linkages which lead to communication, understanding and collaboration among the stakeholders need to be developed. However, many policymakers are not convinced that STI is relevant in development matters and this has led to the failure to take scientific evidence into account when making policy decisions. In this regard, it is imperative to create and encourage policymakers' interest in STI and strengthen the links with Scientists. Scientists/Researchers should focus on setting up regular forums and symposia that involves the participation of policymakers and properly communicating policy results to policymakers. Given the nature of politics in Africa, scientists also need to recognize the importance of proper timing when trying to capture the interests of policymakers.*

## **Introduction**

Societal problems are complex and can only be solved through the interaction of key stakeholders including researchers, policymakers, the private sector and the civil society. These partnerships among the stakeholders result in the development of a functional, acceptable and implementable policy.

Effective linkages on the other hand lead to active communication, understanding and collaboration among the stakeholders for sustainable development. It also allows for the free flow of knowledge to policymakers, entrepreneurs and the society at large. Furthermore, it

improves information for evidence-based policies for faster development<sup>1</sup>. To achieve self-rule and democratic governance of Science, Technology and Innovation (STI) in Africa for African development, African governments need to adopt proactive policies that fully embed STI in their societies.

Africa has developed many policies, but the challenge it faces has been to adopt these policies and implement them. At the moment, they are simply gathering dust on the shelves and do not touch the society as intended. For this reason, Africa needs to be able to identify the challenges and constraints that have led to this problem. Even more important, however, is the need to identify them in the right order, and try and solve the problems of the society.

### **What shapes / Influences Policy**

Policy and practice should be informed by research-based evidence. However, this is not usually the case. Policy in Africa is generally affected by topical relevance and, equally by the operational usefulness of an idea. It therefore helps if a new approach has been piloted and the document can clearly demonstrate the value of a new option.

A critical issue affecting uptake is whether research has provided a solution to a problem. In addition, the sources and conveyors of evidence - the way new messages are packaged (especially if they are couched in familiar terms) and targeted, can all make a big difference.

Better utilization of evidence in policy and practice can help policymakers identify problems, understand the causes, develop policy solutions, improve policy implementation, and monitor strategies and performance. This is especially true where:

- > The evidence fits within the political and institutional limits and pressures of policy makers and resonates with their assumptions, or sufficient pressure is exerted to challenge these assumptions.
- > The evidence is credible and convincing, provides practical solutions to pressing policy problems and is packaged to attract policy makers' interest.
- > Researchers and policy makers share common networks, trust each other, and communicate effectively.

Policy science and research should be problem-oriented and targeted. This is the opportunity for researchers and scientists to prove that they have a practical solution to the outlined

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<sup>1</sup>Urama et al. (2010). *The African Manifesto for Science, Technology and Innovation*, ATPS Publication, ISBN: 9966-7434-5-6

problem, and therefore can offer a valuable contribution to the policy debate and the policy community in general.

### **Maximizing the chances to influence policy**

It is vital for applied research to inform and influence the policy decisions. Scientists should not expect all members of parliament and cabinet ministers to be able to articulate matters of science and technology, given that STI articulation is a challenge even to many scientists. In this regard, scientists need to dialogue and get ways to inform and influence decision making, that is, research that ends up with policy recommendations. These need to be recommendations that can be adopted and implemented to change our society. Scientists/researchers need to identify problems/challenges, formulate policies, implement them and be able to take them further. Parliamentarians and other policy makers also need to learn to use scientific evidence more effectively. There is therefore a need to better familiarize them with how scientific knowledge works given that sustainable development can only be achieved by integrating robust science and political agendas that appreciate the significance of science. The following should be considered when making scientific evidence more useful for policymakers?

**Availability.** Does a body of good evidence exist on a particular issue?

**Accuracy.** Does the evidence correctly describe what it purports to do?

**Objectivity.** How objective is the source?

**Credibility.** What approach was taken to generate evidence and how reliable is the evidence? Is the evidence contested? Can we depend on it for monitoring, evaluation or impact assessments?

What constitutes the mutual interest that will facilitate Research Policy and Practice linkage?

- > When the research agenda is aligned to national priorities
- > When research generates tangible solutions rather than just criticism
- > When there are common development problems, challenges and common agenda
- > Mutual interest in delivery and implementation of the policy that must have been formulated through collaboration and consultation
- > When both researchers and policy makers have the interest in getting policies right and implemented effectively
- > When both researchers and policy makers “work for the people” and the “well-being of society”
- > When both researchers and policy makers want “high impact, workable, affordable and implementable solutions to problems”



- > When researchers and policy makers define clear indicators for evidence-based research, and framework to measure progress/success towards realizing the desired goals between research and policy
- > When both parties want to have an impact on society and bring about positive change

### **Identified/ Known Gaps between research and Policy**

Africa is lagging behind because of the lack of collaboration between the key stakeholders in the research, policy, and practice process; lack of skills in trans-disciplinary research to inform effective and efficient policymaking; poor communication between and among the stakeholders; and a lack of understanding of policymakers' language by policy researchers.

Scientists and Politicians operate from extremely opposite sides of the fence with scientists being accused of setting up ivory towers. Additionally, scientists have very minimal interaction with policy makers whose key attributes are among others, lobbying, advocacy, dialogue and consensus-building. Until recently, science-related issues received little attention in parliamentary debates, and few parliamentarians are still not sure that Science and Technology (S&T) is relevant in changing the life of their constituents. This has led to the failure to take scientific evidence into account in policy discussions. Hence, building politicians' interest in science and technology, and strengthening their links with scientists is a developmental imperative. Indeed, better application of research and evidence in development policy and practice can help save lives, reduce poverty, and improve the quality of life.

### **Bridging research and Policy Making**

*How can scientists improve the networking with policymakers?*

There are several approaches that Scientists/researchers can adopt in bridging the gap between them and policymakers. One such method is setting up regular forums like annual conferences, workshops and symposia where scientists invite policymakers instead of having scientists talking to themselves. This promotes multi-stakeholders dialogue that enables the understanding of mutual benefits, building networks and creating harmonized agenda.

*How can scientists communicate results to policymakers?*

This can be achieved via professional knowledge brokering units, technology transfer skills, and feeding back to both sides by disseminating policy briefs. It is important, however, for scientists to avoid sending reports just by mail. They also need to visit the policymakers at their offices so as to explain what is in the report.

## Understanding the Linkage between Research, Policy and Practice

*Prof. Shaukat Abdulrazak*

*How to improve communication of research to policymakers:*

- > Strengthen researchers' communication skills (in order to get the target group right, get the content right, get the timing right, etc.).
- > Aim for close collaboration between researchers and policymakers by building proactive, long-term relationships with policymakers — not just responding when called on.
- > Construct an appropriate platform from which to communicate (a platform of broad engagement - a public campaign, is more likely to be heard).

### How to influence policy and practice

What researchers need to know	What researchers need to do	How to do it
<p><b>Political Context:</b></p> <ul style="list-style-type: none"> <li>• Who are the policymakers?</li> <li>• Is there policymaker demand for new ideas?</li> <li>• What are the sources / strengths of resistance?</li> <li>• What is the policymaking process?</li> <li>• What are the opportunities and timing for input into formal processes?</li> </ul>	<ul style="list-style-type: none"> <li>• Get to know the policymakers, their agendas and their constraints.</li> <li>• Identify potential supporters and opponents.</li> <li>• Keep an eye on the horizon and prepare for opportunities in regular policy processes.</li> <li>• Look out for – and react to – unexpected policy windows.</li> </ul>	<ul style="list-style-type: none"> <li>• Work with the policymakers.</li> <li>• Seek commissions.</li> <li>• Line up research programmes with high-profile policy events.</li> <li>• Reserve resources to be able to move quickly to respond to policy windows.</li> <li>• Allow sufficient time and resources</li> </ul>
<p><b>Evidence:</b></p> <ul style="list-style-type: none"> <li>• What is the current theory?</li> <li>• What are the prevailing narratives?</li> <li>• How divergent is the new evidence?</li> <li>• What sort of evidence will convince policymakers?</li> </ul>	<ul style="list-style-type: none"> <li>• Establish credibility over the long term.</li> <li>• Provide practical solutions to problems.</li> <li>• Establish legitimacy.</li> <li>• Build a convincing case and present clear policy options.</li> <li>• Package new ideas in familiar theory or narratives.</li> <li>• Communicate effectively.</li> </ul>	<ul style="list-style-type: none"> <li>• Build up programmes of high-quality work.</li> <li>• Action-research and Pilot projects to demonstrate benefits of new approaches.</li> <li>• Use participatory approaches to help with legitimacy and implementation.</li> <li>• Clear strategy for communication from the start.</li> <li>• Face-to-face communication</li> </ul>
<p><b>Links:</b></p> <ul style="list-style-type: none"> <li>• Who are the key stakeholders?</li> <li>• What links and networks exist between them?</li> <li>• Who are the intermediaries, and do they have influence?</li> <li>• Whose side are they on?</li> </ul>	<ul style="list-style-type: none"> <li>• Get to know the other stakeholders.</li> <li>• Establish a presence in existing networks.</li> <li>• Build coalitions with like-minded stakeholders. Build new policy networks</li> </ul>	<ul style="list-style-type: none"> <li>• Partnerships between researchers, policymakers and policy end-users.</li> <li>• Identify key networkers and salesmen.</li> <li>• Use informal contacts</li> </ul>
<p><b>External Influences:</b></p> <ul style="list-style-type: none"> <li>• Who are main international actors in the policy process?</li> <li>• What influence do they have?</li> <li>• What are their aid priorities?</li> <li>• What are their research priorities and mechanisms?</li> <li>• What are the policies of the donors funding the research?</li> </ul>	<ul style="list-style-type: none"> <li>• Get to know the donors, their priorities and constraints.</li> <li>• Identify potential supporters, key individuals and networks.</li> <li>• Establish credibility.</li> <li>• Keep an eye on donor policy and look out for policy windows.</li> </ul>	<ul style="list-style-type: none"> <li>• Develop extensive background on donor policies.</li> <li>• Orient communications to suit donor priorities and language.</li> <li>• Cooperate with donors and seek commissions.</li> <li>• Contact (regularly) key individuals</li> </ul>

## Way Forward

I would like to suggest that research must be known and trusted to influence policy and translated to action. Researchers need to grasp and adapt to the dynamics of the political debate and to the relevant evidence at the right time. This is because there are situations when timing could be everything. Scientists need to know the right time to act when dealing with policymakers. For example, scientists in Kenya should not take their STI policies to their policymakers during elections years when they are preoccupied with the elections and busy looking for votes to go back to parliament. However, the moment the policymakers come into power that is the right time to approach them. In all, it is paramount that researchers engage with policymakers when identifying the problem, undertaking research itself, when drawing out recommendations and when implementing policies.

It is high time Africa stops giving lip service to Science Technology and Innovation. Not many countries in Africa have devoted the 1% of their GDP to research. South Africa's contribution to research stands at 0.97%. Kenya lags behind with approximately 0.3%. There is no way African can implement good proposals without resources. For instance, in Japan, the prime minister's office has under it the ministry of state for science technology policy, and council for science technology policy. These ministries are able to “feed” there because science and technology are cross cutting issues and are also very important. It would therefore be important and beneficial if African countries could copy this model. As such, every president in Africa needs to have a science advisor who advises both the head of state and the cabinet on matters related to STI. In addition, Members of parliament should be given training both in "information literacy" and in scientific methods. There is also a need to evaluate the quality of scientific research used in policymaking since good policies can only be based on good scientific research. This will require scientists to build and improve their researching skills so as to provide reliable information on STI to their policy makers.

## Conclusion

Science and Technology (S&T) have important contributions to make to development<sup>2</sup>. For research to be effective, however, researchers should engage closely with policymakers throughout the policy making process; from identifying the problem, undertaking the research itself and drawing out recommendations for policy and practice from the results. In addition, Think tank institutions should use a single regional or national Knowledge Transfer/Knowledge Brokerage platform.

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<sup>2</sup>*Policy-Making as discourse: a review of recent knowledge –to-policy literature, A joint IKM Emergent-ODI Working Paper No. 5 2009*

## Understanding the Linkage between Research, Policy and Practice

*Prof. Shaukat Abdulrazak*

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Innovation does not happen in the disciplinary silos but in the interactions amongst the key actors in the innovation systems including policy makers' private sector actors, science experts and the civil society. These interactions must be profound and be proactively and mutually reinforced because competitiveness is what Africa needs. Indeed, Africa needs to have role models and come up with very clear successful partnerships and that must be praised and celebrated. Africa must also be sensitive to gender and as such, involve women in linking research, policy and practice.

The political leadership in Africa is deplorable. It is therefore important to elect the right leaders to govern Africa. For instance, having a corrupt and inept leader at the top will result in little or nothing happening at the bottom level of society. There is also the need to encourage public participation in science so that people of all backgrounds can share their aspirations for science, and contribute their views about its applications and significance.

## 2. Linking University Research to Policy and Practice: Strategies and Implications

**Professor Bartho N. Okolo**

*Vice Chancellor*

*University of Nigeria, Nsukka*

### **Abstract**

*African universities continue to explore strategies that can increase the relevance of their research output to meet the needs of policymakers and industry collaborators. The traditional approach to research in African universities has not yielded the expected results, hence the need for scholars, policymakers and industry stakeholders to rethink the current processes and identify the best approach for achieving national development goals across Africa. This paper poses critical thinking questions that will help discussants approach this issue constructively to achieve the expected goals for research quality, relevance and integration in the policy process. African universities must build collaborations that will foster this change process and reduce the lack of confidence exhibited by policy makers and industry stakeholders on the quality of research outputs. The paper presents strategies and recommendations from experience and a review of literature on linking university research to policy and practice.*

### **Introduction**

It gives me great honour to speak at this event for two reasons, (1), the remarkable work done so far by African Technology Policy Studies(ATPS) in providing opportunities for scholars, policymakers and industry key stakeholders to interact regarding Africa's development in science, technology and innovation and its implication on our comparative advantage; and (2), the fact that our continent is at a cross road as it relates to the true value of tertiary systems in re-aligning the purpose of research to meet the sustainability needs of our continent (UNESCO Forum on Higher Education Report, 2009). In line with these two reasons, I will like to present my thoughts on linking university research to policy and practice in Africa using specific examples from experience and review of literature.



In addition, I will intermittently pose questions that can help us further our discussions on this issue considering the fact that “policy making is not an event. It is a process that moves through time-consuming stages, beginning with public recognition that a problem exists, to the adoption of laws or a combination of measures aimed at dealing with aspects of the problem ... to the establishment and operation of a program, for evaluation, review and modification” (Gunderson, 2007).

As African nations grapple with policies to guide their education systems to become true drivers of the economy, it is important to point out those most African nations are facing significant challenges which can alter the national unity of these nations, reduce their democratic potential thereby creating an enabling environment for chaos and anarchy to thrive. However, at precisely the time when the greatest capacity for change is required, there is a lack of confidence both in our understanding of these challenges and in our ability to adequately face them. Chaotic urbanization, emerging pandemics, uncontrolled globalization, widespread poverty and hunger, an education system that is built on a model that is not adaptive and culturally responsive. I pose the first set of questions to help guide this discourse; “can we simply and fatalistically observe these challenges, as though we lacked the knowledge to understand how and why they occur and the capacity to achieve change? Can we for a fact externalize higher education quality, especially as it relates to research outputs from the current state of things in our various countries? As we reflect on these questions, I like to emphasize that the problems pointed out are not insoluble. Of course, scholars, especially social scientist and policymakers pose different questions, work with different timeframes and are judged by different criteria. Nonetheless, both relate to the same society and hopefully are working towards solving the same problem using the nexus between university, policymakers, and industry to re-engineer research output relevance in a knowledge era.

### **University Research Practice: Vision and Reality**

In my role as the chief executive officer of one of the largest institutions of higher education in Africa, I have experienced resistance and conflict when pushing for internal policies that encourage research that are innovative, relevant to our era and a driver for our local, national and regional economic development and policy dialogue. I must confess that my understanding of the magnitude of the decay in the quality and relevance of our research output prior to my current role was nothing compared to the discoveries that emerged since I took office. Although we are still trying to back the veracity of my next statement with empirical evidence, it is my experience that the lack of faith in the significance of higher education research output in the current and emerging needs of our continent may have led to the minimal engagement of researchers at the developmental stages of policies across our

continent. The former UN Secretary General Kofi Annan argued in line with my discoveries and convictions:

The university must become a primary tool for Africa's development in the new century. Universities can help develop African expertise; they can enhance the analysis of African problems; strengthen domestic institutions; serve as a model environment for the practice of good governance, conflict resolution and respect for human rights, and enable African academics to play an active part in the global community of scholars” (World Bank Report, 2004).

I strongly believe that African universities must create internal policy structures that encourage the creation of a nexus between the institutions, government and industry key stakeholders. This nexus in my opinion is an essential element and facilitating factor for development. It lies at the heart of several successful experiences, both institutional and governmental, as well as in innovative cases of private sector organizations. Based on this understanding, I continue to advocate for tertiary education institutions that reflect a new mind-set towards the historical focus to research practices and research outputs. This is my vision for the role of universities in the push to reposition our continent in the forefront in innovation and economic development in the knowledge era.

Although, I understand and appreciate the implication of these issues regarding linking research to policy and practice, my experience shows that developing a team of change agents at the unit and management levels of our universities will serve as a driver to building capacity while minimizing the conflict that will emerge at the beginning phases of proposing change to our traditional university model.

This team's success will depend on their ability to continue to ask critical thinking questions such as “What are the characteristics of research that appears to have, and to not have, an impact in national development across disciplines? Are there any other factors that may be necessary to interact with research, especially in science, technology and innovation, so as to achieve its potential impact on public policy? What are some examples or success stories that illustrate these points within our context? Keeping these questions in the forefront of my team's strategic process has helped us communicate the relevance of the change process, especially to our younger faculty and staff.

## **Implications**

It is important that I emphasize this point before moving forward with the paper, “an

association between academic research policy outcomes does not imply causality. For causality to work, the research results would have to be so powerful as to have an independent impact on altering the behaviour of the parties to change the policy outcomes in spite of vested interests or other influences” (Gunderson, 2007). Having said this, I will like to approach implications of this challenge within the context of recommendations:

### **Recommendations**

1. Building collaborations with industry is a critical success factor if we plan to become successful in our quest for research driven national policy focus: I emphasize on this point for two reasons (1) it will serve to restore the trust on universities as relevant stakeholders in our national research dialogue and output; and (2). While pin-pointing that precise impact of research on policy is not feasible (beyond some, likely ranging from moderate to substantial), more confidence can be placed on these key ingredients for research to have an impact because these collaborations will be based on national and global significant outputs that change the culture of research in the institution. Therefore it will lead to a change in the internal processes within our universities and a rethink and redesign of the benchmarks used to evaluate quality and impact of research output in our departments and faculties

2. Creating a fund campaign process with governmental and non-governmental entities is critical and will provide the enabling environment to engage in mutually beneficial projects: Good knowledge systems that foster credible research are expensive and time-consuming. Learning systems are not new as we may all be aware of. However, my experience in increasing the number of donor agency funded projects in my institution has been very focused and transparent. This accountability structure has played a significant role in attracting numerous projects that foster our goal of linking research to policy and practice. Our UNESCO Category B Biotechnology Centre, the Shell Nigeria Centre for Environmental Management and Control project, and the Google Incorporated Information Communication Technology project, the largest of such project in Africa, I might add, are collaborations that have supported the vision to increase the relevance of research as economic and policy driver.

3. Creating a robust and accessible database within our institutions is a critical success factor to increase the research relevance of universities. This database will serve as a repository for internal and external stakeholders: The dearth of data in our continent is a critical concern

4. Creating a team of change managers that believe in the core values inherent in the quest to create a research culture that will begin to restore the relationship between institution-

policymakers- and industry. My experience have shown that the quality of the team you select as drivers for this change process will determine the level of the performance benchmarks set during the evaluation process.

### Conclusion

In conclusion, my paper challenges the belief that tertiary education has little role in promoting economic growth and policy development in Africa. The research relevance and quality of universities in Africa may improve technological catch-up and other innovations and, in doing so, maximize Africa's potential to achieve its greatest possible economic growth given current constraints. Engaging in this dialogue is important because it affords us the opportunity to examine our current situations and explore ways to engage our resources in re-engineering our university structure and processes. Investing in tertiary education in Africa may accelerate science and technological diffusion, which would decrease knowledge gaps and help reduce poverty in the region.

In my current role, my discoveries compel me to say that current state of our higher education will not make a significant difference in Africa if other barriers to development continue to play a determinative and negative role. Without sensible macroeconomic management, for example, new graduates will be much less likely to find productive work. More importantly, without good foundational education policies, tertiary institutions will not be able to bridge the academic gaps of its students leading to an unemployable graduate population regardless of favourable macro-economic factors.

Good governance is another *sine qua non*. Openness to new ideas – with provisions to ensure that Africa actually benefits from such openness and with increased cooperation from developed and developing countries and their institutions and centres of excellence – is likely to be key. Higher education creates the potential, but governments and private actors must seize the opportunities.

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# 3. Conceptualizing Research, Policy, and Practice for Sustainable Development in Africa

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## **Abstract**

*The linkages between research, policy and practice are examined from the point of view of relevance to each other. The challenges that present themselves in the actualization of corroborative work between the three players are identified with a view to suggesting possible solutions in the context of African development priorities. It is observed that there is a need for continuous dialogue between scientists, policy makers and practitioners to improve on the nature of deliverables between them. Specifically, the need to improve on communication skills by the researchers and the research skills of policy makers and practitioners has been identified as necessary in order to improve on the appreciation of the value added by each player in the research, policy, and practice continuum. Every effort must be made to facilitate the uptake of research findings for policy formulation, and to accommodate the practitioner in the formulation of policies so that they do not stifle applications in the field. It is also suggested that all policies must be harmonized and consistent with each other. Where there are common areas of application, policies must recognize this and be in consonant with each other. It is suggested that well formulated, research-supported policies will help Africa extricate itself from poverty and improve the quality of life of its people. However regional and national policies will require the support of international policy frameworks such as the decisions of the Conferences of the parties to the United Nations Framework Convention on Climate Change and its Kyoto Protocol.*

## **Introduction**

In many African nations, research has not enjoyed as much attention as necessary and

especially when one notes the significance of research for policy making and for overall development in Africa. Clearly this is not a healthy situation, and even though one notices considerable change and improvement in the situation the matter is worrying. There have tended to be uneasy alliances between policy makers and researchers, researchers and practitioners, and some tension between practitioners and policy makers.

Some practitioners have considered research as ivory tower theorizing that is irrelevant to the challenges they experience on the ground. There are also those within policy making teams that feel all research ought to be applied research, and that theoretical research should not attract as much financial support as applied practical research. There have therefore been gaps between research, policy and practice which have challenged the uptake of research results for application in the development of African countries. The belief that theoretical research should enjoy more financial support than practical applied research makes the assumption that applied research has no connection with theoretical research. Alusa (1986) in discussing the link between theoretical and applied meteorological research observed that theoretical research is fundamental to applied research, and especially in the climate and meteorological science. But the argument is also valid for any other field of research. For the case of meteorology, we know that Numerical Weather Prediction (NWP) and its up scaling to climate modelling preceded the practical aspects of seasonal forecasting and the analysis and detection of climate change which is now recognized as a critical development challenge. The distinction between these sets of research types is essentially academic. In the Kenyan context, the research that was undertaken by Kenya Agricultural Research Institute and the theory underlying the breeding research resulted in very useful identification of appropriate seed maize for growing under different circumstances throughout the country. The need is to provide the impetus for research to inform policy, and for policy to support the practitioner in the field. This combination would then ensure that research findings find application in the field, are relevant and supportive of policy formulation for national socio-economic development.

In this paper we shall examine the gaps between research, policy and practice, and what can be done to fill these gaps. We shall also highlight what challenges these gaps present for national development throughout Africa. We suggest ways of removing the barriers and then elaborate the need for research, policy and practice to work in the same direction as development imperatives in Africa. Throughout the paper reference will be made to examples from the climate science—a subject that brings out even more clearly the significance of data, information and research findings in policy formulation and the link to practice and national development.

### **The Challenges of Maintaining the Research, Policy and Practice Continuum**

In an ideal situation there should be a clear relationship between research, policy and practice. But this is not the case, and in particular, the gaps between the three have been most glaring in African countries. These gaps seem to have their origin in, among others, a communication gap across the board. There are perceptions, impressions and attitudes that do not necessarily represent fact, but are strongly held by the respective players. The fact that research scientists tend to give their findings in a language that only their peers can understand gives them the ivory tower tag by the practitioner, and also challenges the uptake of these findings in policy formulation. On their part, researchers' interest lies in achieving peer recognition, and therefore they tend to write with their peers in mind. This is not necessarily bad in itself. It is important for all scientific or research findings to satisfy these peer standards and be tested for their authenticity, accuracy, and appropriateness.

But once this requirement has been satisfied it is important for these research results to be customized for the user at whatever level. Unfortunately this is where there is considerable breakdown in communication. Researchers may be excellent scientists, but they can be dismal salesmen. The communication gap is reinforced by the limited understanding of the subject matter under discussion by both the practitioner and the policy maker. Because of this limited understanding, the true value of research findings is trivialized by some policy makers. Complicated research findings without the appropriate modification and simplification for policy and practice will condemn such findings to bookshelves for long periods of time. This explains why the African policy makers will contract a foreigner who comes in, removes the 'dust' off the previous local researcher's findings and resubmits as new findings when it was undertaken ten years earlier by an able local researcher. The difference is that he may simplify the results and indeed suggest how this might inform policy and be applied on the ground.

The time has come when we should strive to appreciate each other's comparative advantage and respective roles in national development. Researchers have a role to play which is to investigate complicated issues in their completeness and identify possible solutions. Having done that, it remains for the researcher to simplify the results, summarize them and suggest possible applications for policy and practice. Policy makers and those who use the results for gainful employment or livelihood enrichment can then take up these findings and test their applicability in real life. They are all important players and critical for national development. The linkages between the three levels constitute a chain, which is as strong as its weakest link, all players must play their roles adequately and faithfully, and share their findings through dialogues. The need for feedback between the three groups cannot therefore be overemphasized. With regards to attitudes, it is important to emphasize that no misplaced

sense of greater importance because one is a researcher or a policy maker or a practitioner can help in the dialogue. It can only create barriers rather than break them down.

There is also a need for policy makers to get familiar with research findings and with the support of researchers address the critical transition from research findings to policy formulation. It may indeed be useful that policy makers have a background in research so that this transition is easier to achieve. There is evidence that where policy makers have such background there is smooth transition between research and policy. The more challenging part is getting a complete understanding of the needs of a practitioner. Specifically, many practitioners find that policies that are put in place do not provide the enabling environment for practice. A case in point is the many concerns expressed by the private sector that government policies stifle initiative and are more punitive than supportive of entrepreneurship. The recent dialogue that is encouraged between public and private sectors will go a long way in resolving these challenges.

### **Possible Solutions to Address the Challenges**

It is clear that communication is central to the effective link between research, policy and practice. We propose that research institutions develop and implement a communication strategy for effective communication of their findings to the general public and the policy makers. Such a strategy should include the media who should assist in communicating the research findings to the general public. In this case it would ensure that research findings are written in clear and simple language for the ordinary practitioner on the ground. But it must also include an appropriate training of researchers in communication skills. The preparation of summaries for policy makers of technical papers will greatly enhance understanding of technical findings and facilitate the use of such information in policy formulation. The Intergovernmental Panel on Climate Change (IPCC) has adopted such a policy and they routinely prepare summaries for policy makers after they prepare their voluminous reports for governments, scientists and the general public.

In order to build rapport between researchers, policy makers and practitioners, dialogue is a critical imperative. This is important for removing the uneasiness that sometimes informs their interaction. A very good example can now be found with the manner in which seasonal forecasts are prepared by the meteorological community in the Horn of Africa. Before the seasonal forecast is issued the meteorologists, the media, the climate modellers, and the farming communities or other users of meteorological information like the Ministries of Water, Agriculture, Energy infrastructure and any other users are involved. In this way the forecast is internalized, language is shared and explained as to meaning and implications for

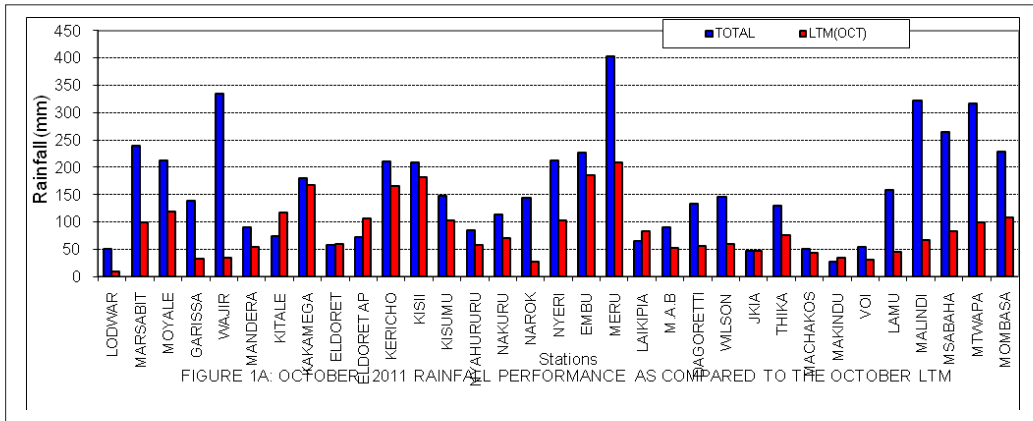
the specific sector. Each Meteorological Service down-scales the forecast and particularizes it for their respective countries.

The Kenya Meteorological Department for example gives a history of what has happened the previous week/month and a forecast of what is expected the next week/month. Specifically, monthly forecasts update the seasonal forecasts while the weekly forecast update the monthly forecasts so that any adjustments noted in the changing weather patterns are brought to the fore. The seasonal forecasts help the policy maker to cast their minds over a time horizon of three to four months as appropriate. Plans can be developed in response to this forecast, but adjustments can be accommodated as monthly and weekly forecasts refine the seasonal forecasts and particularize forecast in time and space.

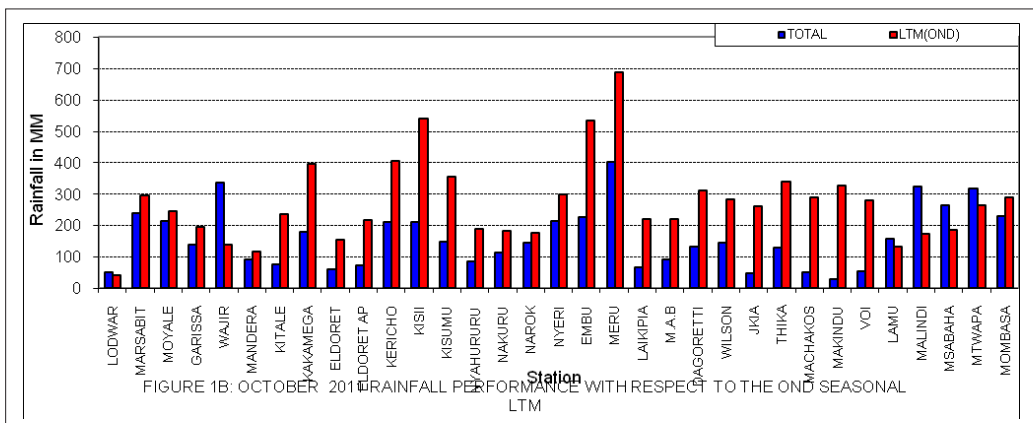
Prioritization of research activities must take stock of what the people on the ground (the users of research findings) consider their priority research needs. Sometimes it is more than just research findings. Some practitioners find the manner in which research findings are presented difficult to interpret or inappropriate for direct application in the field. It requires further statistical analysis, to be immediately applied. If we do not adapt our findings to the needs of the users, we shall continue to have a real gap between research, and the needs of policy makers and applications in private sector or by the general public.

Weather forecast present a good example of how communication is critical in the utility of information availed to the general public, policy makers or the farmers as specific users. The Kenya Meteorological Department (2011) provides, on regular basis, important information with progressively improved accuracy of how the rains will perform. Figure 1 indicates how the October 2011 rains performed against the long term mean rainfall for the month. It therefore helps explain the impacts of these rains on the ecosystems, agriculture, energy, water, infrastructure etc. Specifically, if the month received more than its long term average, it may suggest that there could be crop damage as a result of excessive rainfall during a critical phenological stage of a crop. Figure 2 shows the October 2011 rainfall performance with respect to the October- November- December long term mean. This again helps to show the intensity of the rains during the month and the implications for farming activities and crop productivity. The policy suggestions are clear. A quick response and appropriate planning will forestall the challenges that a crop failure would cause. Figure 3 is the October-November-December 2011 “Short-Rains” Outlook and is an indication of expected performance of the short rains season in Kenya. One can plan even though it is not that precise. Figures 4 and 5 are indications of the onset and cessation dates of the rains. These are important for planning and useful for policy makers as well as farmers as it is often suggested that dry planting improves

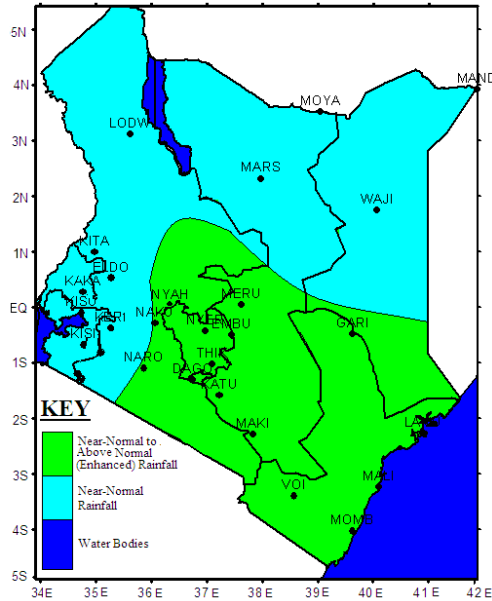
crop harvest. They are also useful for those responsible for infrastructure maintenance. Many flood events occur at the onset of the rains because the drainages are never cleared and serviced prior to the onset of the rains. The cessation of the rains allows for planning of harvests and or preparation for challenges if the rains stay longer than needed as the crop rotes in the fields.



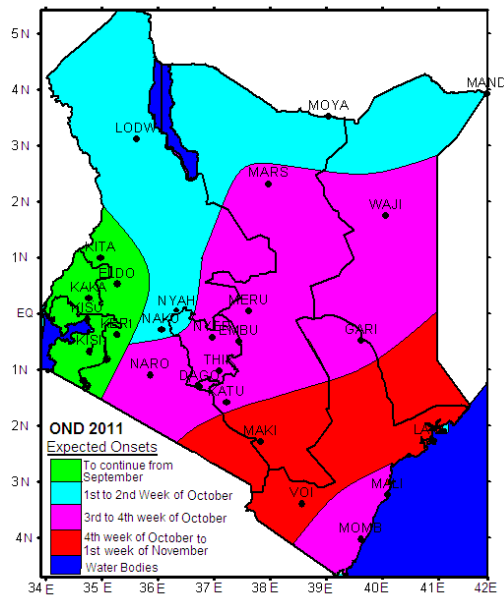
**Figure 1: October 2011 rainfall performance as compared to the October long-term means (Kenya Meteorological Department 2011)**



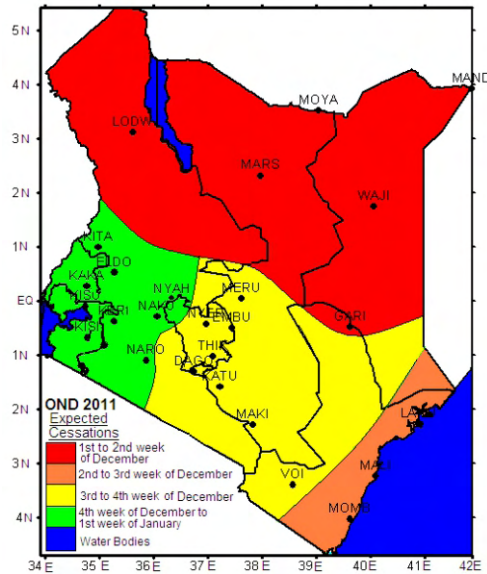
**Figure 2: October 2011 rainfall performance with respect to the October - November - December seasonal long-term means**



**Figure 3: October-November-December 2011 “Short-Rains” Outlook (Kenya Meteorological Department 2011)**



**Figure 4: Expected Onset Dates for October November December 2011 (Kenya Meteorological Department 2011)**



**Figure 5: Expected Cessation Dates for October-November-December 2011 “Short-Rains” Seasonal rainfall. (Kenya Meteorological Department 2011**

### Research Policies and Sustainable Development

It is necessary to emphasize the need for national research policies for national development in Africa. The policies need to cover the whole gamut of sectors central to national development. For example, and just to mention a few, research policies in the areas of Water development, Agriculture, Energy, Technology innovation, economic development and the management of our environment are important for sustainable development. It is particularly important that these policies are seen and promulgated in a coherent and integrated manner.

The only way development is going to make sense is when our water policy is carefully linked to the need for irrigation agriculture and therefore to agricultural policy. Similarly, policies on forestry, water, agriculture and land use must be seen to be climate proofed and therefore in consonant with the climate change policy and the environment policy. There have been complaints by the private sector that many of the policies at national level are not harmonized, hence sending out ambiguous messages to the private sector. In some cases this ambiguity is exploited for the benefit of unscrupulous business men but to the detriment of the larger public interest. Policies must respect the three pillars of development - social, economic and environmental.



For all these policies to make sense in the national development context, research policy must pay attention to both theoretical and applied research because they both are essential, and indeed are supportive of each other. A good example relates to the activities of the Intergovernmental Panel on Climate Change (IPCC). The IPCC [(2007(a)] assesses a lot of literature of a theoretical nature, but brings it down to how it becomes applicable in the understanding of the impacts that climate change is likely to have on socio-economic systems.

The Fourth Assessment Reports of the Intergovernmental Panel on Climate Change [IPCC, 2007 (a) (b)] point to the fact that we not only have climate change with us, but that its impacts will be most pronounced in the African continent. Thankfully, and because of this development, the policy makers in Africa are taking stock of the likely impact of climate change on their socio-economic systems and have now internalized the value of research in the area of climate science and its impacts. This is a good example of scientific research informing policy and indeed changing attitudes and lifestyles in response to findings. We now know that climate change is a development challenge. A development challenge because it affects literally all sectors of the national economy. It must be factored into national decision making and form an important part of national policy frameworks.

All research policies are as good as the extent to which they are applied to national development priorities. Indeed these priorities must inform the policies in the first place and guide the researchers in their work. It is precisely because in some cases the research priorities may not be in sync with national development priorities that research findings hardly inform policy or meet with support in practice. For that support to be provided the dialogues between researchers and policy makers and indeed practitioners are important. It is through such dialogues that an effective and strategic approach in the implementation of the research findings can evolve.

For research findings to find acceptance in practice, policies must provide the essential environment for application. For example, the need to move from fossil fuel energy generation to renewable sources of energy generation requires that the policies facilitate the private sector to take up renewable energy. This is important because renewable energy is, in relative terms, much more expensive than fossil fuel sources of energy. It is also for the same reason that developing countries continue to argue during negotiations of the Climate Convention that for them to adopt renewable energy, they need the support of Annex I Parties to the United Nations Framework Convention on Climate Change (United Nations, 1992) and its Kyoto Protocol (United Nations 1998). This also brings out the significance of international policies that are essential in facilitation of Regional and National policies. Indeed

under Kenya's new constitutional dispensation, it is specifically stated: “any treaty or convention ratified by Kenya shall form part of the law of Kenya under this constitution.”(Republic of Kenya, 2010)

Recent findings from the combination of social and physical science research now show that participatory action research (PAR) has a way of getting quick results at least in the climate change adaptation work. It suffices to point out that development of research policy need to encourage participation of interested parties, at all levels. This again helps build rapport and have a meeting of minds by all. A good example of participatory research is the Climate Change Adaptation Africa (CCAA) Research programme supported by the IDRC and DFID that comes to an end in 2012 (CCAA, 2011).

Green Economic Growth is the new development paradigm that will form part of the agenda at the conference on Rio+20 in June, 2012 in Rio de Janeiro, Brazil. It is a development framework that requires a low emission development strategy in terms of greenhouse gas emissions throughout the economy. The challenge is that these approaches to development are expensive and would require not just a national policy, but also an international strategy that would aid the developing countries that wish to change to green development, to do so. The Copenhagen Accord (UNFCCC, 2009) and the Cancun Agreements (2010) that would avail quick start financing for climate change adaptation and the start of implementation of nationally appropriate mitigation actions are important international policy initiatives that help support climate change policies at the national and regional levels.

In more specific terms, it has been observed that to achieve the Millennium Development Goals, energy services will need to be provided for all, in a sustainable manner (Clark, 2011). This would require the cooperation and coordination of all development partners. The issue of poverty reduction, energy for all, and climate change demonstrate the significance of coordinated policy initiatives and the linkages between climate-related issues and poverty alleviation. For Africa to extricate itself from the poverty cycle, Africa must develop a harmonized approach to development. This can best be achieved through organized and research-supported policies that evolve consultatively.

## **Conclusions**

We have discussed the value of research in policy formulation and in application of research findings in real life practice. However, for this to be achieved, research findings need to be customized for policy and practice. Properly utilized research findings will be applied in national development. Dialogue needs to be urgently developed between the three groups on

a regular basis in order to remove the communication gaps that may exist between them. Policies need to be integrated and harmonized to be effective. We have observed that regional and national policies may need to be supported by overarching international policy frameworks. The example of international support for energy for all to support efforts in realizing poverty alleviation and the achievement of the Millennium Development Goals in general has been highlighted.

Examples have been identified in the climate and meteorological science that clearly suggest the very significant linkage between research and policy, policy and practice, and research and practice. Consultations and dialogue are essential for success in making sure that policy benefits from research findings and that the practitioner gains from the linkage between researchers and policymakers.

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# 4. Linking Policy Research & Policy Making for African Sustainable Development: Private Sector Perspective

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## **Abstract**

*Researchers in Africa have been criticized for their lengthy reports in a language that is inaccessible to the policymakers and other stakeholders. This situation is worsened by governments' institutional cultures of secrecy. As a result, policymakers deprive themselves of the services of experienced researchers when dealing with critical issues which they may be ill prepared to tackle. In the past few years, however, development organizations have instituted research programs aimed at improving the linkages between research and policy and show how research can contribute to policies and improve the use of evidence in policy making and practice. These organizations are funded by international donors raising the issue of ownership, priorities being served, use of external consultants and perceived legitimacy. Even so, there has been a steady growth of indigenous African capacity and expertise conducting relevant research which has developed the capacity of both researchers and policymakers. Nonetheless, the core problem is that research to policy is not sufficiently anchored to the most pressing questions facing the developing countries leaders, advisors and investors. It is however important to note that there is no single solution to this situation; it requires the collaboration of all stakeholders.*

## **Introduction**

The impact of research on policy action cannot be assumed but has to be deliberately and concertedly developed. In the last few years, a number of development organisations have instituted research programs aimed at improving the linkages between research and policy and to gain a better understanding of how research can contribute to policies and improve the use of evidence in policy making and practice.

There are a number of gaps between research and policy that must be bridged such as:

- > Limited policy relevant research
- > Insufficient access to research
- > Ineffective communication by researchers
- > An under-emphasized but very important area is the limited understanding by policy makers, politicians and incapacity of overstretched bureaucrats to absorb research, and
- > Improving the demand for evidence in a systematic and rigorous way.

Many researchers feel quite strongly that research should not be limited to or directed by the demands of society, but that more is accomplished when research is unchained and free to follow its own discourse. All too often, however, research projects do not result in policy change, because they do not take into account the complex realities of a country or a sector and fail to involve the main stakeholders in the research process. Yet, better utilization of research and evidence in development policy and practice can help save lives, reduce poverty and improve the quality of life (Court and Young, 2006). There are a number of activities that can facilitate the process of linking research to policy such as:

- > Communication,
- > Translation,
- > Interaction and exchange, using social influence and intermediaries.

Realizing increased relevance also requires a time-consuming commitment to approaching public and private officials and to developing relationships based on trust and reliability in the delivery of quality output that is timely and easily understandable to laypersons. Indeed, researchers are often criticized for producing lengthy reports in a language that is inaccessible to decision-makers. Even with the best of intentions, however, researchers' efforts may be stifled by governments' institutional cultures of secrecy and politically-motivated distrust of nationals who often play an active role in politics or whose political leanings are not evident. As a result, policy-makers may unwillingly deprive themselves of the services of experienced researchers when dealing with critical, yet sensitive issues, for which they may be ill prepared to tackle.

### **Linking Research into Policy**

Policy processes are complex, multidimensional and unpredictable and there is an urgent need to find mechanisms to promote the use of research-based and other forms of evidence in policy making. If more were understood about the context within which researchers, policy makers and stakeholders are working, if the links between them were improved, and if high quality research were disseminated more effectively, then better policy making might follow.

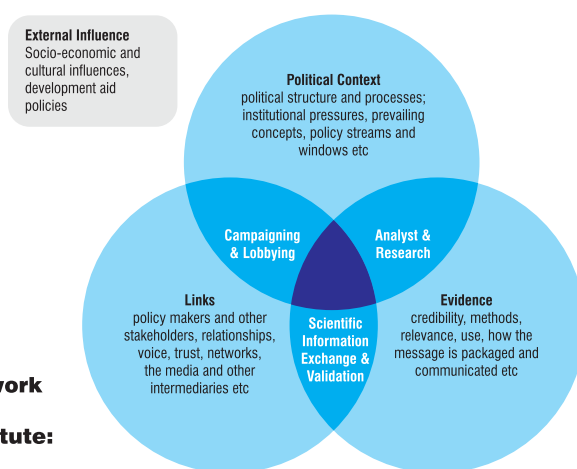
Policy makers could make more constructive use of research and researchers could communicate their findings more effectively to influence policy (Court and Young, 2006).

There has been growing interest in evidence-based policy making and in how research influences policy in the developing country context. The World Bank (2010) advocates for a more open and strategic approach to research that is firmly grounded in the key knowledge gaps for development policy emerging from the experience of developing countries including questions that policy makers in these countries ask.

The Overseas Development Institute (ODI) has developed a simple analytical framework and practical tool that links research and policy. This research and policy in development (RAPID) framework looks at factors that contribute to, or limit, the roles that the different stakeholders play in the process, (Court and Cotterrell, 2006; Crewe and Young, 2002). These factors are broadly divided into three overlapping areas namely:

- > the political context;
- > the evidence; and
- > the links between policy and research communities; within a fourth set of factors: the external context.

The interplay of these four areas is laid out in Figure 1 below. The framework should be seen as a generic perhaps ideal explanatory model. In some cases there will not be much overlap between the different spheres and in others the overlap may vary considerably. Yet, it provides clear and flexible guidance as to what researchers need to know, what they need to do and how they should go about it.



**Figure 1:**  
**The Rapid Framework**  
**Source: Overseas Development Institute: (Court et al, 2004)**

A fusion of the RAPID framework emphasizes the impact of external forces and donors action on research – policy interactions. Much of the research on African development issues has been undertaken by Northern institutions. This has raised concerns of the relevance and beneficiaries' access to findings.

A substantial amount of research in poor countries is funded by international donors, which raises a range of issues around ownership and whose priorities are being served and the use of external consultants and perceived legitimacy.

However over the past twenty years a quiet revolution has been taking place in terms of development of indigenous African capacity and expertise and think tanks to conduct policy relevant research. What the RAPID framework indicates is that policy influence of research goes far beyond changing policies themselves. It includes building the capacities of those involved, both researchers and decision makers in using research in the decision process. It also includes expanding what we look at in the policy and research processes knowing that policy is not usually made within a narrow domain of study and that, researchers need to have a much broader understanding of society and must bring other factors to bear on the findings they are putting forward.

### **Private Sector Perspective**

As the private sector, we are uniquely positioned to play a catalytic role in providing policy advice to our policy makers by conducting high quality research and leveraging policy relevant innovative knowledge that are aligned to our priority areas of operational policies and programs to generate a deeper understanding of the development challenges facing the continent. We are calling for more creative use of knowledge products than previously to promote sustainable economic transformation and growth as well as reduce poverty in Africa.

It is not that we need a new deeper understanding of the development challenges facing Africa; what we need is baseline data and information on what we already know in order to promote sustainable development. Research findings can only be used as an input to national development policies if researchers and policy-makers cooperate closely to understand specific needs, ensure relevance of topics, and improve communication, dissemination and implementation of the research recommendations.

Our policy makers like other policy-makers across the world need to base their decisions on information from reliable sources and they need to know the kinds of research that can help



them make the right choices. A wide gap exists between the producers and consumers of knowledge, and research can have a greater impact on development policy than it has had to date when this gap is closed.

Researchers as “knowledge makers” cannot understand why there is resistance to policy change despite clear and convincing evidence. Policymakers as “knowledge consumers” complains about the inability of many researchers to make their findings accessible and digestible in time for policy decisions

### **Status Quo**

There tends to be a lack of communication between researchers and policy makers. Policy makers are not always informed about on-going research and researchers often lack knowledge of the most pressing policy questions that they would need to make their research more relevant. The World Bank in a recent publication on Research for Development (World Bank, 2010) highlighted that many researchers do not start with the key knowledge gaps facing development practitioners but rather search for questions they can answer with the field's current tools. The core problem in the research to policy is that despite the impressive set of data and analytical tools now available, it is not sufficiently anchored to the most pressing questions facing developing country leaders, advisers and investors. From the private sector perspective, it is the policy questions that should drive the research agenda, and not the researcher's disciplinary background or favourite method.

Applying to policy and practice what is already known from research and analysis can close the know-do gap in Africa, thereby enabling policies and interventions that reflect best possible current state of knowledge. The critical issue for the future is how to improve researchers' effectiveness in producing output that directly and indirectly changes both policy and practice and is truly relevant to people's needs and sustainable development.

### **Conclusion**

Our conclusion is that there is no linear course from research to policy outcome, and no single actor in that course can determine a particular policy outcome. Each of the actors and institutions has a role to play and their relationships with each other are key to ensuring a successful outcome.

# 5. Challenges and Opportunities for Effective Linkages Between Research, Policy and Practice

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## **Abstract**

*A country's pace of development depends largely on how well its leaders harness and use the best research-based knowledge and experience available. Research can answer leaders' key development questions correctly, help them choose the best pro-poor policies, solve socioeconomic problems, improve public accountability and maintain an independent economy that is propelled by science, technology and innovation. When beneficiaries' interests, aspirations, needs and challenges - often embedded in national policies - have not adequately guided the research agenda, researchers often generate knowledge with little or no direct value to society. In order to win public trust, confidence and support and to influence policy and practice, research must be policy-oriented and its findings must add value to people's lives. This requires active consultations with stakeholders throughout the research process. Effective linkages offer the best forum for such consultations. Understanding the challenges and opportunities for effective linkages may help leaders improve the functioning of the knowledge and information system. This paper defines policy, linkages and related terms, showing their similarities and differences. It discusses the importance of research to national development, the value of effective linkages and the challenges of establishing them. Finally, it describes effective ways and opportunities of improving linkages and proposes evaluation criteria for linkages.*

**Keywords:** *Challenges, Opportunities, Policymaking, Research-Policy-Practice Linkages*

### **Introduction**

For research to be relevant to its potential beneficiaries, it must focus on their cultural, social and economic aspirations, needs, values and realities embodied in national policies. Research can help leaders learn from the best knowledge and experience available. It can guide them in developing pro-poor policies and in addressing socio-economic development challenges of a nation (Jones, 2011). Policy makers can use research to get the right answers to key development questions while educators can use it to get useful information for effective classroom teaching (World Bank, 2011). Leaders can use research to solve scientific problems, to improve public accountability in managing development projects, and to maintain a technologically independent economy that commands respect from other nations. However, despite the usefulness of research output, researchers are often accused of wasting time and resources in generating knowledge with little or no direct value to society (Mathooko, 2010). Therefore, in order to win public trust, confidence and support, research must address the challenges, needs and priorities of society. It must be policy-oriented and must focus clearly on the practical usefulness of technologies and innovations developed for practice. But this goal is elusive without strong linkages between research, policy and practice. Effective linkages may enhance our understanding of the role of university-industry relations, for instance, in fostering industrial development and competitiveness. They may accelerate the development of innovations while creating conditions that facilitate commercialization of new products (Okoth-Owiro, 2002). Effective linkages between research, policy and practice may reduce the time gap between the development of scientific findings and their commercial application.

### **Purpose and Information Sources**

This experience/literature-based paper highlights the challenges and opportunities for effective linkages between research, policy and practice. The author hypothesizes that a good understanding of reasons for poor linkages can help readers improve the functioning of the knowledge and information system. The contents of this paper are drawn mainly from the author's many years' experience in extension and research work within and outside Kenya; literature review; and face-to-face interactive interviews with 20 respondents comprised of researchers, policy makers and implementers as well as beneficiaries of research output. A significant contribution was made by both administrative and academic staff from various professional disciplines within and outside Egerton University.

### **The Meaning of Policy, Linkages and Related Terminologies**

**Policy:** Information from various sources including Webster's dictionary and Sycamias (2010) indicates that a policy is a statement of organizational objectives and expectations that

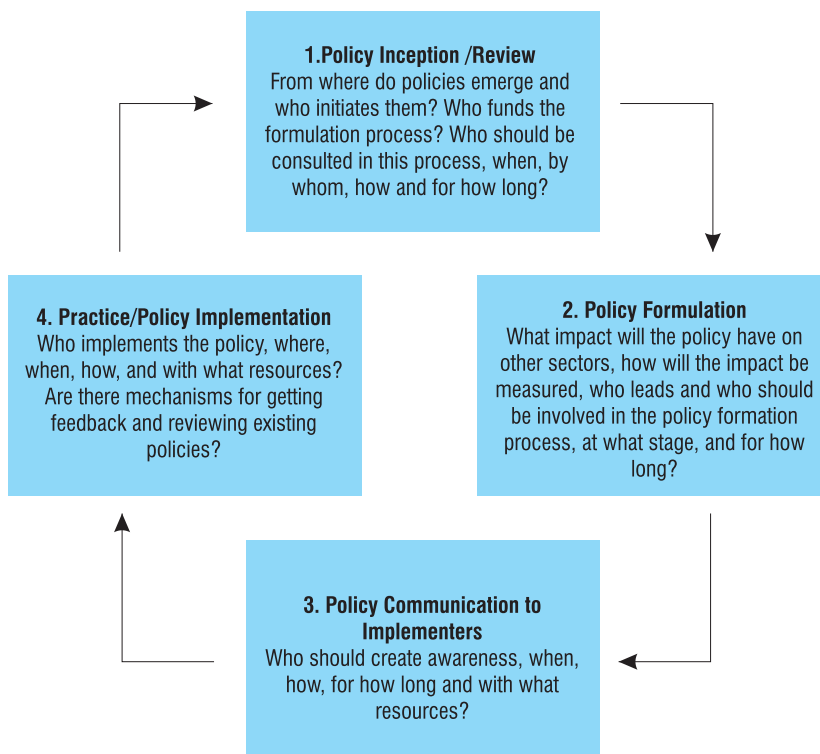
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reflects the social values and needs of the masses, which is intended to add value to the lives of the people it serves. It is a set of coherent decisions, or responses to a problem, with a common long-term purpose(s) designed to carry out a course of action or to implement related courses of action, often supported by legislation but not limited in time. The course of action is selected from several alternatives to guide and determine present and future decisions. Public Policy - usually written in a document - helps a government or a political party to determine decisions and actions useful to society. Government policies are intended to add value to people's lives and should therefore express and embody the needs and values of society.

### Effective Linkages between Research, Policy and Practice: A SWOT Analysis

Policy/Practice	Strengths	Weaknesses	Opportunities	Threats
Policy on cassava content in baking flour.	Policy may promote cassava markets.	Policy may lower the amount of wheat needed for baking and may also reduce wheat markets.	Policy may increase cassava production and raw materials for emerging animal feed industries.	Unforeseen climate changes may affect sustainable cassava production.
Policy on Individual Property Rights (IPR).	Policy gives IPR to inventors and innovators.	Inventors and innovators are required to pay cost of application fee for patents.	Policy may help inventors and innovators to acquire IPR from the Kenya Intellectual Property Institute (KIPI).	Policy may be ineffective in controlling loss of ownership through piracy.
National Agricultural Research Systems (NARS) Policy.	The policy may help coordinate research activities.	Most stakeholders may not own the policy if they did not participate in its formulation.	Most stakeholders support the role of NARS policy in Kenya's development.	Stakeholders' inadequate contributions to policy formulation.
Policy implementation (Practice).	Goodwill exists for partners to participate.	Most policy implementers are rarely involved in policy formulation.	Use of ICT to share policy information may shorten the process of policy implementation.	Long Government bureaucratic process may lower the speed of policy implementation.



**Figure 1: A Policy Formulation & Implementation Process**

Literature on linkages shows that the terms collaboration, cooperation and partnership are related to one another and that some of them are synonymous or are used interchangeably (Concise Oxford Dictionary, Gardner, 2005; ICRA, n.d.; Jones, 2011; Pluskowski, 2010; Valenzuela, 2011; Vela, 2010). The terms are defined as follows:

**Linkages:** These are interactions between organizations, which allow exchange or transfer of information, resources or power. The term linkages refers to all types of collaborations, coalitions, joint workings or partnership agreements between institutions, which aim to achieve common goals or to facilitate access, management or financing of social security. Linkages may be formal and institutionally recognized, or informal and temporary. They enhance consensus building and people's understanding of relevant issues, goals and priorities. They also enhance collaborative, seamless and integrated decision-making. They minimize duplication of effort and delay from planning, through to project implementation. Although some people believe that the word partnership is different from collaboration, others consider the two words to be synonymous.

**Partnership:** This is a collaborative relationship between two or more parties based on trust, equality, and mutual understanding for the achievement of a specific goal. It involves risks, benefits, absolute interdependence and collaboration as well as mutual accountability, influence, respect, equal participation in decision-making, shared power, and transparency. A partnership may enhance people's self-esteem by delivering services that make a difference to their lives.

**Collaboration:** Collaboration, which means teamwork or working together harmoniously in pursuit of a common goal, is a process in which autonomous stakeholders interact and act or decide on issues related to a problem using shared rules, norms, and structures. It evolves in partnerships and teams, and has three phases namely, problem setting, direction setting, and structuring. It is both a process and an outcome in which shared interest or conflict that a single person or organization cannot accomplish alone is done by key stakeholders who are influenced directly by the actions others take to solve the problem. Although sharing takes time, the return on interaction is huge. Collaboration is also a conflict resolution strategy that uses assertiveness and cooperation to seek satisfactory solutions that are advantageous to all parties. It succeeds if participants' goals are compatible, and the interaction among them is important in attaining the goals. Collaboration is a skill learnt through practice and it is critical in creating and sustaining a competitive advantage. It involves coordinating multiple resources as well as managing, and enabling group interactions to ensure harmony and effectiveness. It also involves sharing, connecting, assigning roles and tasks to those involved, communicating and giving feedback, and making personal and group goals merge for an ultimate goal or task. In its negative sense, it may mean working as a traitor. Although it implies equal partners working together, this may not be the case if one party rules the other.

**Cooperation:** This refers to teamwork or process of working together peacefully either intentionally or unintentionally towards mutually agreed goals, instead of working separately in competition. Each cooperating organization remains totally independent, takes no risk, and retains total authority but the parties cooperate to make their autonomous programs more successful. In a competition, one cannot win unless the other side loses but in cooperation a person only succeeds if the others with whom he or she is linked attain their goals.

**Coordination:** This is slightly more formal than cooperation because coordinating parties work together to advance their separate but compatible missions.

### **Importance of Research to National Development**

Good research challenges old thinking, provides better ways of doing things and avails information that is useful in allocating scarce public resources for development. Evidence-based research may help a nation to set development agenda and priorities correctly. Through unbiased observations of phenomena, good researchers objectively use multiple data sources to corroborate their findings and to promote the use of research-based development policy, considering the complex, multidimensional and unpredictable nature of the policy-formulation processes.

### **Formal Institutional Linkages and Informal Networks**

Formal institutional linkages and informal networks are interactions between organizations that allow exchange or transfer of information, resources or power. Both have similarities and differences as follows:

**Similarities:** Formal institutional linkages and informal networks are characterized by joint planning, division and implementation of tasks, and sharing of information and resources. Both manifest themselves in common areas of interest and are stronger at the local operation level than at the administrative level.

**Differences:** According to Hanyani-Mlambo (2002), formal linkages are institutional in nature. They have everything formalized and laid down. For example, they have written goals and procedures. All participants know their responsibilities and their organizations are represented on the boards of collaborating organizations. Informal networks depend more on individual efforts or personal contact to network, based on need, than on organizational mandates or initiatives. They generate knowledge and exchange information and resources through regular interaction or informal contacts among different actors, and are sometimes based on reciprocal exchange of information and favours. Their emphasis is on a one-to-one networking effort as opposed to the organizational culture that characterizes most formal linkages.

### **The Value of Effective Linkages between Research, Policy and Practice**

Policy-makers, particularly in Africa where a wide gap exists between knowledge producers and consumers, have under-utilized cutting-edge knowledge for many years. Yet they can use the services of experienced researchers to deal effectively with issues that they cannot tackle alone (INURED, 2011; Jones, 2011). Globally, there is a growing interest to use evidence-based research to influence policy and practice directly and indirectly, and provide effective ways of improving government performance and accountability in service delivery.

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Evidence-based research is critical in helping a nation understand the context within which researchers, policy makers, implementers and other stakeholders work, and how they can improve existing linkages and create new and better ones for stimulating growth of national economies under peaceful and stable political environments emanating from responsive and accountable leaders. Weak linkages between research, policy and practice exist because of stakeholders' lack of passion, interest and motivation to participate, caused by poor understanding of mutual benefits derived from effective linkages or lack of convergent needs (INURED, 2011).

Weak linkages may not produce the intended results but strong linkages may motivate those involved to work together for their mutual benefit, which include fostering and supporting the production, dissemination and application of research results, leading to policies and technologies that enhance people's livelihoods. Strong linkages may help leaders to seamlessly integrate research ideas in their day-to-day decision making. They might help them to harness local talent from professionals who are more familiar with the country and clearly understand its domestic development agenda, processes and priorities. Without locally generated information and analysis, well intentioned programs will not respond well to realities on ground (INURED, 2011, Mathooko, 2011). Learning through linkages, about earlier studies might improve our understanding of how research can contribute to pro-poor policies and facilitate use of evidence in development policy and practice. It might also help us to improve the impact of research on policy action by making the right choices using the best knowledge and experience available.

### **The Challenges of Linking Research, Policy and Practice Effectively**

The core challenge in closing the research to policy gap is how to provide practical answers to the most pressing questions that policy makers, their advisers and investors ask. Inadequate government funding for research is a challenge that forces local scientists to over-rely on donor funds. This makes most of the research conducted to be donor-driven and to focus on donor interests and priorities, which may be different from, or irrelevant to, national needs, aspirations and priorities (Theobald, Tulloch, Crichton, Hawkins, Zulu, Mayaud, Parkhurst, Whiteside, & Standing, 2011). Many funders have an interest to show through research, the impact of their investment, and to justify it to their constituencies (Theobald et al., 2011). In evaluating European Union funded research proposals for instance, research impact accounts for a third of the total marks. Donor-funding of, and use of external consultants to conduct research, raises issues of perceived legitimacy and ownership and may affect relevance of research and beneficiaries' access to research findings, as donors often influence research-policy interactions.



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Other challenges include: limited policy-relevant research; inaccessible research findings; researchers' inability to communicate effectively; inadequate understanding by policy makers and politicians, of the value of effective linkages; stakeholders' poor motivation to participate; and incapacity of overstretched bureaucrats to absorb research outputs, and to improve demand for evidence in a systematic and rigorous manner. These challenges weaken existing linkages and the possibilities for establishing new and better ones. Stakeholders' capacity to achieve intended impacts is reduced by: poor leadership that enables politics, corruption and suspicion to thrive; raising the cost of doing business; failure to use evidence-based research in policy formulation; and representation of policy makers in policy-formulation meetings by their juniors who cannot make decisions on their own. This drags the policy-formulation process and makes it harder for a policy to translate into action.

Lack of clear guidelines on who should initiate the policy formulation process and how the process should proceed from policy concept inception to policy implementation remains a challenge. Within Kenyan public and private universities, a big time imbalance exists between research and teaching activities in favour of teaching, which occupies 50-60% of the lecturers' workload (Mathooko, 2010). Research is hardly given the prominence it deserves in the university function. This, according to Mathoko, is the main reason why research outputs from universities are pathetically low, with very few being patented. Although research proposals should be aligned with the end-users' needs through the bottom-up strategy in their preparation, this is usually poorly done, partly due to time constraints and inadequate funding. Another challenge is unfavourable reward systems and weak appreciation, willingness and commitment to honour best performing researchers, innovators and practitioners. They are left to rely too much on external recognition for outstanding contributions to society. The late Nobel Peace Prize winner, Prof. Wangari Muta Mary Jo Maathai, is an excellent example of a highly talented individual with an impeccable record of achievement and global recognition, whose contributions in environmental protection, through afforestation, almost went unnoticed in her own country until outsiders put her on the global map of truly outstanding achievers.

The challenge of inappropriate or lack of planning and failure to invest adequately in a strong knowledge base, reduces development impact of research and policy. Though decision makers are duty bound to ensure that all policy decisions and actions have a sound empirical basis, and although they are obligated to work closely with researchers, their performance in this role has been less than optimal. Yet for any policy-oriented development action to be effective, both policy initiators and implementers must identify, understand and involve key stakeholders in the policy formulation. Poor dissemination of research findings is another

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challenge because researchers do not always disseminate their recommendations at the right time or communicate in a language those policy makers and practitioners understand.

Inappropriate organizational structure and weak management capacity pose challenges. Lack of staff capacity, interest and motivation for the job often weaken their commitment to create, maintain and strengthen linkages. Currently in Kenya for instance, there is no clear structure on who should initiate linkages between research, policy and practice. Neither is there a clear procedure for ensuring that research is policy-oriented; that policy is research-oriented and that policy translates into practice. Yet for research to have the greatest positive impact on national development, it should be driven by policy questions rather than the researchers' disciplines. Better utilization of evidence-based research findings in policy formulation and implementation may lead to interventions that reflect the complex realities on ground. It may save lives, reduce poverty and improve quality of life.

Governance can be a challenge because it can cause a regime change and destabilize a nation or lead to change of government priorities, which may weaken or curtail improvement of existing linkages or creation of new and better ones. Differences in organizational cultures, priorities, expectations and operating procedures may also affect the process of establishing effective linkages. Time and money constraints are challenges that are sometimes worsened by globally unpredictable crises that cause political and economic instability, weakening existing linkages and their expected outcomes. A good example is the weakening of the Kenyan Shilling in 2011 and 2012 that affected the research budget and subsequent implementation of planned activities.

Lukewarm support for linkages by chief executive officers (CEOs) is another challenge. Although there are many exceptions, most CEOs of research institutions, non-governmental organizations (NGOs) and universities are largely responsible for weak linkages between research, policy and practice. Many of them rarely reach out to entrepreneurs and business leaders in the industries or to policy makers and try to understand what they require and how best to engage them in mutually beneficial joint activities. Yet they have the mandate and capacity to provide transformational leadership that would create the intended development impact. They would create a very big positive impact if they spent a small fraction of their entertainment allowance occasionally to organize consultative breakfast meetings on research and policy, and invite private sector representatives, policy makers and implementers to participate. Universities, for instance, could invite key public and private sector players to address their staff and students particularly during graduation ceremonies, or could arrange for senators and council members to visit selected industries to brainstorm with industrialists

on how their universities could add value in realizing their visions and missions. This would also give potential employers an excellent chance to inform students, teachers and parents about the employment opportunities available and the skills required from potential applicants. Less time should be spent lamenting about lack of cooperation by industries and more time strategizing on how to initiate, improve and strengthen linkages. Less time should also be spent looking for linkages with outsiders at the expense of developing, improving and strengthening linkages with local institutions. A new District Commissioner posted to a district near a university, for instance, should be made part of the university and encouraged to actively involve the university in the planning and implementation of development activities. The linkage between the Kenya Agricultural Research Institute (KARI) researchers, Egerton University faculty, and Lare farmers on water harvesting in Njoro district is an example of an effective linkage that successfully brought water self-sufficiency for participating farmers in Lare in 2004. The farmers learnt, through the project how to harvest rain water for use during the dry season.

Seeking linkages with industries without showing them what they stand to gain from the cooperation is a big challenge. Students' exposure, through field attachment to the real work environment gives them industrial discipline and the skills necessary for improving their performance and ability to meet employers' expectations after training (Owour, 2002). However, universities should not write to industries only when they seek field attachment positions for their students. But should first try to understand the problems industries face so that they can send their students with a clear mandate to solve them. Industries receiving the students would then benefit from their presence and would consequently want more students attached in their firms. This would ultimately strengthen the linkages between the universities and participating firms and further improve employment opportunities for the students upon graduation.

Inadequate monitoring and evaluation of the interaction process and the suspicion and mistrust of research, pose another challenge. The effectiveness of policy implementation depends on the timing and duration of sensitizing stakeholders; their understanding, willingness and ability to implement as well as the competence of facilitators. Failure to understand the strategic importance of investing in knowledge management and communication is a big challenge, and so is the unnecessarily long bureaucratic procedure that prolong the time a policy takes from concept inception to implementation. However, creation of a direct link between research and policy is still controversial. Many researchers feel strongly that research should not be limited to, or directed by the demands of society. In their view, more is accomplished when research is free to follow its own discourse (Jones, 2011).

### **Effective Ways of Improving Linkages between Research, Policy and Practice**

All research should be policy-oriented and all policy should be research-oriented so that both research and policy can benefit the people intended (Mathooko, 2010). Research will influence policy making only if it is policy-relevant. Soliciting the views of different policy stakeholders will lead to policy-relevant research being undertaken, whose results could help in decision making (Jones, 2011). To influence policy and practice through strong linkages, one needs to know who the policy makers are, their demands for new ideas and when they require those ideas, their agenda and constraints as well as potential policy supporters and opponents. Also one needs to know sources and strengths of resistance, the policy making process, opportunities and timing for input into formal processes and the critical evidence needed to convince policymakers. People interested in strengthening linkages should focus less on stakeholders' differences and more on what they have in common. They should know when and when not to establish a linkage. But once they decide to establish one, they should invest more in developing the human capital to enhance growth and should be ready and willing to recognize and award people who get outstanding results by applying researchers' recommendations. They should ensure that their communication strategies are effective by making them flexible, innovative, jargon free and relevant to research objectives of participating organizations. They should consider launching a magazine, free of intimidating technical jargon, fully dedicated to communicating policies and research findings to the public. People who value linkages should incorporate research-based knowledge into policy by initiating and continuously engaging in effective consultations with all the stakeholders while making a commitment to develop and strengthen linkages with public and private officials based on trust. Researchers should avoid producing lengthy reports in a language that decision-makers least understand and should learn how to create rapport with different public and private sector stakeholders. They should regularly consult stakeholders on how best to frame research evidence to increase decision makers' receptivity.

The government should allocate more financial and human resources to build a stronger research capacity that can provide policy makers with relevant evidence-based research information promptly, when they require it. The government should also initiate a scheme for matching private donations for research with its own funding based on an agreed ratio and should have a clear policy that specifies important areas of research focus. The policy should guide researchers' engagement with donors; establish and maintain a strong link between each university department, faculty, or school with its parent ministry; and encourage, promote and reward people whose strong industry-university linkages solve important national problems. In addition, government should encourage industrialists and business entrepreneurs to team up with university researchers in findings ways of solving socio-economic problems and

developing commercially-viable products that could be released to the public for mass production after an incubation period. It should encourage industrialists to regularly engage university professionals in training their employees. In America, for instance, extension agents take on-the-job training courses regularly to update their skills. In Kenya, there are many opportunities for university professionals to engage in activities that could greatly benefit the community. For instance, they could train and certify public vehicle operators in safe driving, good customer relations, and in developing skills for detecting potential car jerkers. Such training might improve road safety, by reducing road accidents and their negative effects on Kenya's population and economy. But someone must take the initiative as one of the Egerton University faculty members, Prof. F. K. Lelo, did in 2011 when he trained Road Engineers on environmental impact assessment and got them registered by the Kenya's National Environmental Management Authority (NEMA) after the training, as Environmental Impact Assessment Experts. Their training and subsequent certification meant that their Ministry no longer needed to hire expensive consultants to do the job, which could now be done more cheaply and faster.

After deciding what one can do best, one can identify the relevant stakeholders, consult them and make a report on what was agreed on, and the follow-up needed. For purposes of soliciting funds, it is important to remember that most donors commit their funds at the beginning of the year and although they may be eager to fulfil their social and corporate responsibilities, approaching them in the middle of the year would be unwise. It is also important to remember that potential donors listen favourably to someone who has approached them. Knowledge of how to domesticate national policies; readiness to learn from best practices that have worked elsewhere; and having a national professional forum that would lobby for researchers to be consulted before major policy decisions are made, may strengthen linkages between research, policy makers, and implementers.

Linkages may help increase research impact. They can supplement traditional research communication methods such as peer reviewed journals, academic reports, patents, technological innovations, face-to-face meetings, and techniques that improve timely messaging and engagement with decision makers including media, ICT and phone messaging (Jones, 2011; Mathooko, 2010). Fostering on-going long-term engagement with different stakeholders throughout the research cycle is better than disseminating research results at the end of the projects. Effective strategies for engaging policy makers are particularly important where policy makers politicize or neglect certain development issues. In order to improve research engagement, develop effective linkages with stakeholders, and overcome mutual distrust, one can effectively use structured and informal lunch meetings, mutual training and

incentives to raise awareness and to promote the use of under-utilized services (Jones, 2011). Communicating research findings through mass media is important in moving research to policy and action, contributing to specific policy decisions, addressing the culture of silence on pertinent issues, and promoting access to information. Researchers and their sponsors should develop strategies for tracking research impact in order to ensure that it is relevant in offering practical solutions to the development challenges facing the nation.

### **Opportunities for Linking Research, Policy and Practice Effectively**

In order to fast track the pace of development, researchers and policy makers and implementers need to work together. Effective linkages provide the best opportunities for them to share information and experiences in policy formulation and to translate policies into action. Existing linkages may be strengthened by active participation of key stakeholders. Since the population is relatively well educated and more enlightened than it was in the past, the stakeholders have the opportunities to learn from one another through more innovative and simple modern ways of engagement that are faster and cheaper. These include the use of media to communicate research findings and feedback in the process of developing linkages that improve teamwork and result in better policies and faster socio-economic development. Opportunities exist in Kenya for researchers to communicate their research findings through annual and biennial scientific conferences, seminars as well as sensitization and reflective workshops. The public service, universities and research institutions such as KARI and Kenya Institute of Public Policy Research Analysis (KIPPRA), have well-trained human resources that may be used to improve existing linkages or to create new and stronger ones, through which various stakeholders can learn from one another by sharing information. University researchers may have a weaker financial base than people from the industry but may possess better knowledge and skills. The available human capacity in the industries may not match that in the universities but it can be greatly improved through effective linkages.

### **Criteria for Evaluating Linkages**

The effectiveness of linkages between research, policy and practice may be evaluated on the basis of: (a) intensity and formality of contact; (b) whether one-way or two-way contact; (c) flexibility of organizations to bring diverse constituencies to support legitimacy and engender trust; (d) knowledge of stakeholders' functions; as well as (e) accessibility, relevance, urgency and timeliness of services. One can also evaluate the linkages based on the resources and people required to initiate and maintain them; quality of communication; progress being made; and the mandate and legitimacy of representatives.



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# 6. Research Uptake, Communication and Brokerage: Role of Science Writers and Media in Africa

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## Abstract

*The mass media, and specifically science journalists in Africa, are just beginning to be aware of the need to explore their potential role in “communication and brokerage” of information needed to enhance research uptake and home-grown policy making. The role of the science journalists in facilitating research uptake by communicating and brokering information in a manner that strengthens policymaking actually begins with appropriately gathering, packaging and disseminating of information. For Africa the latter should be relevant to the target audience and enhance socio-economic development including basic human needs. The media in Africa should credibly “facilitate” information flow including those packaged to enhance research uptake by policymakers without compromising its core role as the people's watchdog. The media should help the continent improve the practical uptake or use of good research results for development and poverty alleviation. Thus science journalists should always strive to make an appropriate impact apart from merely making information on R&D more accessible. The mass media is increasingly evolving to be the “centre of communication networking” thus helping fill information gaps among various groups- communities, policy makers and researchers at local, national, regional and global levels. When it comes to research uptake and impact, the mass media is well placed to highlight “lessons learnt.” It means monitoring and evaluating outputs from researchers, policymakers and how it involves and benefits the people. Science writers can contribute towards uptake and effective implementations of research results if they understand or are able to cope with the multidisciplinary nature of research uptake. Science journalists must constantly sharpen skill to unearth exclusive stories hidden in mountains of data surrounding policymakers and researchers. The media can improve research uptake by maximizing proximity. It includes innovative use of ICT, local languages, FM or community radio stations at local levels. Policymakers respond best to issues highlighted by media, targeting wider audience at international and national levels -newspapers, radio and television stations.*

## Introduction

Two decades ago, the issue of linking science writers and mass media with research uptake seemed far-fetched or non-existent. However, the role of the mass media worldwide is evolving and expanding rapidly to include or cope with emerging issues and areas of specialization that are useful or relevant to the socio-economic wellbeing of the public or particular communities. The media, especially in Africa, has to credibly “facilitate” information flow including those packaged to enhance research uptake by policymakers and the intended beneficiaries without compromising its core role as the people's watchdog. The media should help the continent improve the practical uptake or use of good research results for development and poverty alleviation. For Science Writers and Media Houses it involves “Turning Research Findings, Facts and data, into locally Credible and Relevant information packages with Locally Appropriate Examples.

Africa's ability to place STI at the top of development agenda and its intended race to catch up with other developing regions, especially some key Asian and Latin American nations, depends on what may seem to be the much hidden issue of “Research Uptake.” It in turn depends on the capacity to effectively communicate with various key stakeholders or audiences including policy makers, researchers, the media, entrepreneurs, donors, intended beneficiaries and others. Below is an example of media stories by science writers that clearly show the need for effective Communication and Brokerage designed to boost Research Uptake in Africa.

### **Nigeria: Over 100 R&D Products Await Commercialization**

By Alex Abutu (SciDev)

*...Failure to commercialise existing research is holding back Nigeria's economic development, minister of science and technology, Mohammed Ka'oje Abubakar, has said. He identified a lack of 'demand-driven' research, and poor links between research institutes and the private sector, as the main culprits. “Nigeria has not attained....*

Researchers in Africa are beginning to accept that they need to communicate beyond the confines of publishing important findings in peer reviewed journals if they are to contribute meaningfully towards poverty alleviation and sustainable socio-economic growth in the region. Going beyond the journals could result in increased recognition and goodwill among the public and policymakers. This makes it easier to seek increased funding or support for R&D. Researchers thus need to appropriately help in extending their communication to other important target groups. However, when it comes to research uptake science writers and the

media in Africa are increasingly at the centre of information flow among key stakeholders. The role of science writers and the media in communication and brokerage of research uptake in Africa is thus crucial.

The media as the people's watchdog and the fourth estate after – executive, judiciary and parliament- may not be comfortable with terms like “brokerage” because its role tends to be that of a “double-edged sword” meaning it does not guarantee or confer “special status” to the activities of any group. However, its social responsibility or key roles of informing, educating and entertaining the people can be credibly used to help communicate and broker research uptake in various fields like food production and processing, health, adaptation or coping with climate change, and others.

Communication is at the centre of socio-economic development and the media is well placed to sensitize and hold policymakers accountable by being able to gather, package and disseminate information linked to various aspects of research uptake. The media creates awareness, helps set agenda and increasingly influences what and who we think about. Much depends on the manner in which information is availed.

However, in Africa where policymakers need “more persuasion” to support and utilize relevant R&D results, science writers and the media remain well placed to help close the gaps between research, policy and practice. They can play the key role of enhancing knowledge brokerage and communication among researchers, potential beneficiaries, policymakers and practitioners for African development.

The mass media, and specifically science journalists in Africa, are just beginning to be aware of the need to explore their potential role in “communication and brokerage” of information needed to enhance research uptake through communication, home-grown policy making and policy research. There are some emerging examples that illustrate on-going efforts that are designed to directly and indirectly enhance the capacity of the mass media and science writers in enhancing research uptake through communication and brokerage. There is already an increasing number of capacity building or training workshops that sensitize the media on the need to improve information flow among policymakers, researches, the general public, donors, intended beneficiaries and other stakeholders. The Economic Commission for Africa, United Nations Educational, Scientific and Cultural Organization (UNESCO), and African Technology Policy Studies Network, are among those involved in activities designed to help the media close the communication gaps and improve research uptake.

However, there are some emerging trends, key issues and factors that must be constantly highlighted if science writers and the media should effectively play their role in research uptake through communication and brokerage. These include innovative use of electronic media, local languages, figures or data, ICTs, appropriate use of national, regional, and international media outlets. All these can be associated with strategies to improve linkages amongst researchers, policymakers and practitioners in Africa and the move towards improving the use of home-grown policy research evidence in policymaking and policy implementation. Greater involvement between researchers, intended beneficiaries, policy makers, results in more effective application of knowledge.

### **Electronic**

Science writers in Africa should pay close attention and get involved in electronic media especially FM or community radio stations. These can be effectively used to improve research uptake. They are ideal in helping extend “expert voice” to the local community where the audience can be given a chance to ask important questions and get answers from the experts. It means that the science writers in Africa -where innovations designed to help avail basic human needs are at the centre of relevant R&D and research uptake- also need to be in a position to interact with both researchers and policy makers through community radio programmes. National radio or television stations are ideal in getting top policymakers to respond to issues touching on them mostly because of the “increased pressure”- real or imagined- that is linked to having a much larger audience at national and regional levels.

However, local FM stations or community radio stations are ideal in informing, educating and entertaining local communities in a relevant manner on important development issues especially potential innovations that are associated with the results of R&D. These could include better services and products, appropriate behavioural changes that help curb some endemic health or agricultural problems. In this era of curbing “carbon trails” newspapers may have to “reinvent themselves” or adds lots of value to their stories, to survive the evolving radical trends in the gathering, packaging and disseminating information by the electronic media.

### **Language**

In Africa science writers, researchers and policy makers need to ensure that they can at least communicate important concepts, messages and innovations linked to their R&D activities using local languages. Anyone who has, for example, conducted research on local livestock diseases among Kenya's Maasai or Nigeria's Fulani should at least know or master local names and descriptions of diseases and other major problems. It is common to find researchers who

do not know local names for cattle, ticks, milk and even meat. All these tend to make their work look “foreign” to the local communities and contribute minimally towards research uptake by the intended beneficiaries. There is an urgent need to change the belief that modern innovations can only be communicated through foreign languages and this has resulted in researchers failing to even try knowing local words and concepts linked to their work.

Using local languages increase proximity thus making information and messages more acceptable to the end users. This may be linked to positive research uptake. The assumption that science and its concept can only be communicated in non-African languages needs to be overcome. Journalists, researchers and even policymakers in Africa easily attain advanced degrees using foreign languages including Chinese, Russian, French, English and others which some learn as they begin their graduate work or university education; yet most if not all do not have an appropriate local name for their degrees.

In short the issue of communicating development issues, especially scientific, via local and regional languages like Swahili in east, central and southern Africa, needs a fresh outlook. Already a major global television station, Aljazeera is launching Swahili programmes focusing on East and Central Africa. However, the media, especially the FM station is ahead in trying to close this major gap hindering research uptake and information flow aimed at end users.

The electronic media can easily bring together researchers, policy makers, and science writers in programmes thus making information flow even more direct and opening much room for impact or research uptake at national and local levels. The input by the public consists of calling in or sending messages displayed on TV screens. Such interactions increase awareness, create trust and confidence among the parties and may lead to increased research uptake. Information from credible sources may empower people to help themselves or others.

## **INFORMATION COMMUNICATION AND TECHNOLOGY (ICT)**

The era of Information Communication Technology is now rapidly evolving in Africa especially in the last five years, and with a move away from merely having computers in newsrooms. There are already online versions of newspapers, and the electronic media in the continent is rapidly moving online including FM radio stations.

Already the widespread use of mobile phones seems to be revolutionizing information dissemination by the media. People can be instantly and constantly updated on events as they emerge. Still, information on health, agriculture and weather is being availed to mobile users.

All these represent increased opportunities for research uptake including regular sensitization of policymakers and end users of research results. The media is bound to evolve, to cope with increased opportunities for information dissemination to target audiences. Science writers may also have to repackage themselves including working more closely with researchers than before when they seem to rely on workshops or conferences. The use of emails, Skype etc. has practically turned the world into a global village. Internet is rapidly replacing encyclopaedias, dictionaries and other documents that were kept in newsroom libraries. Indeed, science writers can nowadays interview experts in various regions of the continent without having to travel. Such advances present increased opportunities for research uptake and interactions with key stakeholders. However, there is still much to be learnt.

### **Figures, Data**

The role of science writers and the mass media in brokering and communicating research uptake involves *Turning Research Findings, Facts and data, into locally Credible and Relevant Information Packages with Locally Appropriate Examples*. It is directly linked to their skills or ability to credibly analyse mountains of data hidden in various documents on budgets, research findings, imports, exports, population, environment, planning, health, finance, water resources, housing, weather, infrastructure, education, industries, livestock, climate change etc. Science writers and media houses that fear to deal with numbers or figures and lack the capacity to monitor and evaluate outputs from researchers and policymakers are not in position to communicate and broker research uptake including the socio-economic impact and how the people can benefit.

In most, if not all media houses only weather forecasters and financial or business writers routinely include figures or data in their stories. There is still much fear of numbers. However the newsroom ability to analyse and generate stories with impact from figures, graphs and charts handled by key policymakers and researchers remains minimal. For example science journalists and the media houses hardly question or interrogate annual national and regional budgetary allocations for health, agriculture, industrializations, R&D funding, expected donor funding, various imports, infrastructure and others. Policy makers and researcher respond fast to data extracted from “their own” documents.

The need to help or train the media in effective use of figures or data is at the core of uptake of research results. However, most reporters and even editors pay minimal attention to figures or data and their implications in the various fields of national development. Newsrooms use figures casually or without double checking as illustrated by the extract from the online version of a leading Kenyan daily.

### **Ernest Kebenei wins 2011 Nairobi StanChart race**

*(Online Team Updated 1 hr(s) 16 min(s) ago Sunday 30th October 2011)*

*“Half Marathon winners each get Sh150,00, second place Sh10,000 and third place Sh50,000”*

**The figures above indicate that the person in the third position got the highest pay and there are still other mistakes.**

Data can be used to generate many stories that could facilitate research uptake and improve the linkages among policymakers, researchers, donors, entrepreneurs and intended beneficiaries. Even science journalists with mathematical skills hardly give special attention or take time to generate stories that impact from budgetary allocations for health, agriculture, environment, R&D and other related areas. In health reporting they hardly get into the details of allocation for specific problems like child immunization, malaria, cancer, HIV/Aids etc.

Policymakers pay close attention to what the media extracts and analyses from budgetary allocations and official documents in public domain. The linking of research uptake to development issues that are contained in the budget or national development plans easily attracts serious attention from policy makers at various levels. It means that with extended interest and coverage the media and science writers in Africa should be in a position to monitor and evaluate how the funds have been used or are being used on behalf of the public, thus meeting its social-responsibility role as the fourth estate or the people's watchdog. Science writers could easily pick on areas or issues that could be cheaply and effectively solved using appropriate or relevant research results. Effective handling of budgetary stories should include use of local innovations linked to research uptake to curb imports and add value to exports.

### **Researchers, Science Writers**

Science writers like others in the media tend to be detached and prefer to keep a professional distance from those they cover. Equally researchers have for years only focused their energies in ensuring that their important findings are published in peer reviewed journals. However, increases in research uptake require that African experts, especially scientists and researchers, acquire some basic skills in communication that is crucial in facilitating research uptake and information flow to end users or intended beneficiaries.

Being invited to an FM station for example may require that researchers have appropriate language and communication skills needed to help inform and educate the public with science writers or journalists facilitating or making the process easier. There is move towards having



communication with stakeholders as essential component of R&D. This means that science writers will also have opportunities to help researchers formulate project communication strategies. Research uptake depends on information flow that is relevant to implementation of solutions. Science writers and researchers need to always remember that appropriate and effective provision of information improves public understanding of issues and promotes evidence based policies. In Africa this includes being aware of their beliefs, culture, customs or traditions and socio-economic aspects or status.

Researchers, scientists and other experts tend to confuse communication with direct “translation.” Technical Jargons and Scientific Terminologies do not constitute “Science Communication” and are least useful when it comes to brokerage linked to policymakers and end users. Scientific concepts and activities can be packaged into locally appropriate Key Messages including the use of “Native or local” languages.

Policymakers tend to respond to public demands and media reports. Positive or negative stories from end users can facilitate research uptake and favourable policy formulation. However, there is no one solution but a mix of various inputs facilitating communication that increases research uptake. Finally for science writers, like all others in the world of journalism or mass communication it all boils down to having good stories that have an impact. There are stories with a “human face” and examples of successful and failed research uptake with lessons learnt. It involves allocating airtime and space for policymakers and researchers and other experts to express their opinions on various aspects of policy and research uptake.

As a whole the role of Africa's Science Writers and Media in “Research Uptake” is just beginning. Already specialized media outlets that focus on such issues is evolving. It includes for example Science Africa based in Nairobi, Kenya and the newly established weekly online science and development news and features, AfricaSTI, based in Abuja, Nigeria and South Africa's Science in Africa.



# 7. Linking Science, Policy and Practice: The Roles of Ethics and Belief Systems. (A Preliminary Investigation in Nsukka-Nigeria)

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## **Abstract**

*The development scenario in Nigeria nay Africa is indeed a very complex one. Several factors arising from several dimensions of her history and life have arisen either as constitutive factors, - that are positive and enhancing, or debilitating and hindering, to her integral development and well-being of her citizens. Ethics and Belief Systems among a people play very dominant roles that can either hamper or enhance the development dynamics and policies of a nation. It is our task in this presentation to identify the ethical and religious frameworks of these influences, acknowledge their diversity, and propose functional linkage between Research, Ethics and Belief systems in the context of the Common Good. It is the standpoint of this paper that, despite the obvious diversity in ethical and religious backgrounds, the judicious application of the interrelatedness among these dynamic components of development is capable of a radical transformation for Nigeria nay Africa.*

## **Presuppositions**

While the integral welfare of the citizens is the *raison d'etre* of any government, every individual and every community shares in and is responsible for promoting the common good. Thus the quality and standard of life of the people provide the index of assessment about the desirability or otherwise of such a governmental system. Despite the divergences of opinions, settings and beliefs, differences in tribe and tongue, common values of life, peace

and security are core ethical values among peoples of various kinds.

**Key Words:** Science, Policy, Development, Practice, Ethics and Religions Belief Systems, World Views, Indigenous and Contextual Knowledge.

**N/B:** The use of 'Science' throughout this paper is in the ordinary sense of the word meaning 'Knowledge' while 'Belief system' will be used interchangeably with Religion.

### **Research Settings**

Nsukka in Enugu State Nigeria is the setting for this research work. Nsukka is one of the oldest regions of Nigeria among the Igbo Nation of Nigeria. It houses the premier University of Nigeria. And it constitutes the Enugu North Senatorial District of Enugu State Nigeria with 7 local Government Councils. Ethics and Religion play major roles in the life and activities of Nsukka cultural zone. Christianity and African Traditional Religion are dominant.

### **Justification for the Investigation**

The poor state of affairs in the socio-economic and political life of the people in Nsukka-Nigeria nay Africa in the midst of the numerous material and human resources endowed is indicative of a missing link. It is a sign that an essential aspect of our life in the research, planning and execution of governmental policies seem not to be effectively adverted to. It is the actual influence of Ethics and the Belief systems in the context of research, policy and practice in governance. This investigation risks to hazard a position that Ethics and Belief systems have crucial roles in the private and public settings for integral national development. And here lies the justification for this research enterprise.

### **Understanding the Dynamics of Science, Policy and Practice in Development**

Man is not an island. Man lives in society with others. And life in any human society faces a whole lot of challenges. In the first place, the organisation of life and the evolution of moral and ethical values under which the society can be structured pose sufficient difficulties. The political dimension is another element in which choices of forms of government and their operational principles must be made in order to realize the essence of life in the society. But of great significance and influence in the life of man in the society today is Science and Technology. The history of human development has shown that sustainable development and the progress of any nation have generally followed the development and application of science and technology. The great developmental feat experienced in the West and the rest of the world is as a result of the adaptation of technology and development of an efficient

science and technology capacity. The enhancement of these capacities through research, communication of research results, and the ability to bring these factors to bear on policy and practice of governance is the secret of the great strides attained in the west. As it were, the development of any nation is consequent upon the degree of scientific innovations at its disposal. No nation can reasonably develop and attain any reasonable status in providing for its citizens those structures and infrastructures that are needed without a judicious and determined exploitation of technologies in economic productivity.

In fact, today more than ever before, science and technology play dominant roles in the life of the society. It determines the ebb and flow of life in the whole gamut of other life considerations. For instance, the astronomical scientific innovations and technological breakthroughs in the areas of high tech agriculture, transport, medicine, communication, biotechnology, engineering etc. exert tremendous influences in the life of man. Science and Technology in their several forms and dimensions have structured and continue to structure lives in our society. Quality life would have been impossible today in society without the benefits of science and technology. Take for instance the simple introduction of the GSM phones in Nigeria in the last couple of years. This has had an enormous influence in the way people live and communicate today. It has turned things around in both the quality and quantity of inter personal relationships in the dynamics of social interactions. However, the fear associated with the Masks of the various Communication Companies as 'potential cancer carriers' given its radioactive materials, and the politics surrounding their establishments in the various villages and cities corroborate the attendant consequences that often characterize such innovations and developments. Depending on how these are packaged, it can lead to loss of public confidence in both the companies and the act of Government that made such innovations possible. And in this case, a whole lot of issues are involved. They are both political and ethical. From the point of view of politics, the introduction of the GSM for instance involves the process of policy enactment and practice and the duty and right of governments to take responsibility for the public in one hand and the rights of the public to participate and contribute ideas in matters affecting their own interests, taking cognisance of their levels of scientific knowledge, disposition and their public esteemed values. It has not been an easy process to translate from science to practice without policy or from policy alone to science without practice. It becomes therefore essential to cast a look at the roles of Ethics and Belief systems in the context of the linkage between science, policy and practice for optimal life of man in the society in the light of the abundant scientific and technological innovations that are today conceivable and realisable. Are Ethics and Belief Systems inhibitive or enhancing to scientific innovations and technological developments today?

The White Paper on European Governance (European Commission 2000), articulating the public and ethical dimensions of science innovations in its attempt to describe its remit in the wider context of 'democratising expertise and establishing European scientific references,' averred thus, "Be it genetically modified food, nuclear waste management or medical advances, science and technology are shaping our lives... Science and technology are playing an ever more important role in public policies". Though the impact of science is undeniable, but the degree of involvement in scientific enterprise is not even. There seem to be more demands especially in the west for more participation in the decisions that involves the public. And so it becomes necessary to determine how the scientific expertise can be made more democratic to enable the citizens to participate in public decisions. This constitutes one major contention in the issue of linkage between science, policy and practice for authentic scientific and technological development.

True to fact, the issue of science, policy and practice are crucial issues involving several dimensions. There is this reality of 'diversity of publics and the changing relationship between their knowledge's and those of policy makers and experts of various kinds.' (Alan and Mike 2003). Again there is this presumption that the citizens required scientific education since they were essentially deficient in scientific knowledge and thus disabled from proper involvement in the democratic process that increasingly depended, or so it was claimed, upon a certain level of scientific literacy (Alan and Mike 2003). In other words, what does the public know about science vis-a-vis the expert and professionals in the area of science and how can this knowledge be made useful and meaningful in the life of the society? What is the degree of the rights of the scientists to impose its expertise knowledge on the public? And what is the appropriate means of doing exactly this? Has the society any right to make up its own minds about such scientific issues? As a matter of principle, it is our standpoint in this discourse that the public response to the so called expert knowledge and scientific institutions and innovations are bound up with issues of identity and trust, which are fundamental to ethics. The public no doubt is in possession of local or situated knowledge, experiences and skills that can play indispensable roles in the crafting of policies.

Even with the experience of democracy and its landscapes that have continued to shape political lives of nations today, it is evident, that the public has the power and the ability of voice in intimate matters of their concern. People feel dis-empowered when excluded from discussions on matters of their own interest. And this is today unbearable.

As a result, there is at the moral and ethical levels an insistence that the society is equipped and most able to "scorn patronising assumptions based on the premise that they don't know

what's good for them. On the contrary, people insist that it is their society and their world and they will decide what's acceptable and what is not" (Peter Melchett, Greenpeace). It is indeed obvious, that "policy makers will find it hard to win public support on any issue with a science component unless the public's attitude and values are recognized, respected, and weighed along with the scientific and other factors" (Select Committee, 2000). And this constitutes the heartthrob of ethics, belief systems and public values in the scientific innovation discourse.

Besides the issues of democracy and public participation, there are other concerns about science and its inventions. In the words of (Alan and Mike 2003), some of these concerns are "questions of facts, but others are questions of beliefs, of traditions, and of values. And such questions include: Is this application for science ethically correct? Are we playing God, and do we have the wisdom to use these technologies well"? These are valid concerns which require careful considerations.

In another development, the Report of the British Department of Trade and Industry 2000 White Paper on Excellence and Opportunity: A Science and Innovation Policy for 21st Century, made it apodictic, that consumers are presented as 'agents in the process of innovation' and confident consumers are essential part of the whole system, for they will only buy new products which they trust. And the role of government is to spread the benefits of innovations as widely as possible while also 'assuring consumers that the highest possible standards of safety are being adhered to".

It is therefore evident, that "Science and technology are too important for the life of man in the society to be left only to the expert scientists. Their knowledge and their assessment of risks is only one dimension of the challenge for society. And so when science raises profound ethical and social issues, the whole of society needs to take part in the debate" (Alan and Mike, 2003). Nevertheless, while exclusion of the public from scientific literary discourse on the grounds of their lack of expertise scientific knowledge is absurd, it remains no less daunting a challenge, to reconcile the situated and indigenous knowledge of the public and the scientific views within the policy process. As a matter of urgency, (Alan and Mike, 2003), it is apodictic that when the work and technique of the scientist fail to take into account the comparable skills of the public for instance, there is bound to be a discrepancy.

The recognition of the relevance of non-scientific craft knowledge is essential for trust and belief in the expertise information of the scientist or even the policy of government that makes its policy therefrom- result of the scientist's research. There is an obvious need for synergy if the benefits of both valid forms of knowledge are to be deeply appreciated.

In a series of publications, Brian Wynnes, (1991, 1992, 1996) has developed the most famous case study of the problematic character of science-public relations. Rather than assuming that the key problem is the public ignorance of science, (as in the conventional deficit theory), in Wynne's account, it is the representatives of science who emerge as both ignorant and unreflexive in the face of public understandings (Alan and Mike, 2003). In fact, the 'wholesale, unreflexive transplantation of scientific knowledge ...can devalue the ...hard-earned less formally organized knowledge (see also Croll and Parkin, 1992) of the public. This too can wound their collective way of life and in sum their social identity. After all we can presume, following the sociology of scientific knowledge and the influential analysis made by Wynne, 'that all knowledge is derived from its particular cultural and social contexts' (Alan and Mike, 2003), in which case a clash of cultures between the expert and the lay is inevitable. But this form of clash is most unnecessary. Valid knowledge will forever govern ignorance. And so the various aspects of knowledge can be harmonised for greater service to the people. In other words, a pro-active and people oriented development requires a collaboration and synergy among the key stakeholders in research, policy and practice. Collaboration and advocacy have potencies to impact on the life of the people and bring forth positive change for the needed development.

### **Ethics and Belief System in Development Discourse**

Ethics and Belief system in development discourse is an exciting area of study. Ethics simply put deals with the customs and the ways of doing things. It is ordinarily about human actions done in a particular way and place. But more interestingly ethics is a branch of philosophy and draws its conclusions from human reason, and concerns itself with what can be described and interpreted with the requirements of morality insofar as these can be rationally appreciated and justified. It is the study of values in realm of human conduct and deals with such questions as- what is the good life for human beings? How do we determine which actions are performed rightly or wrongly? How do we arrive at a decision that a certain action is right or wrong? What criterion or standard do we employ in making such a decision or making such a judgement? What actually do we refer to when we say that a certain action is morally right or wrong? (Eboh, 2005). Ethics from the foregoing is concerned with values as the basis of right actions. As a normative science, it attempts to establish and explain the proper norms of human conducts (Eboh, 2005). It is further an inquiry as far as it is possible, the most ultimate reasons why one ought to do anything (Archie, 1992).

Apart from the personal and individual levels, ethics has a social dimension. Man is a social and rational being. And by reasons of his nature, man lives in society with others. Man is not self-sufficient and therefore needs the support and cooperation of others to make life in the

society meaningful. With man's rationality, man realizes the need of others and his inability to live and work alone. Of necessity man's life is impossible without the other hence there is a whole lot of network of interconnectedness. Social ethics deals with man's conduct in the society with others. It deals with the norms guiding the conducts of the various institutions and organisations in their relations with one another for the good of the society. In fact, Social Ethics deals with the moral principles needed for a harmonious living in the society. Otherwise the life of man in the society would be chaotic and short.

Religion on its part draws its conclusions from revelations. It is concerned about God as the source of man, and man's virtue to render to Him in devotion the homage that is his due (J. Goetz, 1981). There is this vertical relationship with God and the horizontal relationship with man. And the quality of these relationships in relation to God and the other is indicative of the quality of faith one possess. In other words faith in God plays itself out in acts of love and service to God and neighbour.

Ethics and religion are thus crucial areas of knowledge for man. Both are essential in our current discourse on the problematics involved in the linkages between research, policy and practice for science and technological development in Africa. It is challenging to find out the place of ethics and religion in the theoretical discourse involving science and technology for African development.

The concept of development is a complex one. It is not always clear what it means and to whom it applies. But the history of humanity has shown that the major goals of human activities in their contexts have always been the sustenance of life – that is the provision of basic life necessities in the form of food, clothing and shelter (Obodoechina, 2005). But development is more than provision of these essentials. The attitude towards higher standards of life finds their resonance in the great scientific discoveries and the numerous technological innovations that have come to be synonymous with development. In the words of M. J. Esman, although the concept of development has been and remains imprecise, it connotes steady progress towards improvement in the human condition, reduction and eventual elimination of poverty, ignorance, and disease and the expansion of well-being and opportunity for all. It entails rapid change, but change alone is insufficient, it must be directed to specific ends. Development involves societal transformation- political, social, and cultural as well as economic, it implies modernisation and industrialization (Esman, 1991).

The distinctive feature of development as economic growth measured in the Gross National Products and integral human promotion that transcends purely economic considerations



indicates the precise place of ethics and belief system in the gamut of development discourse. In other words, it is in the context of human development that involves the entire human person in its integrality that ethics and belief system can play vital roles. The Pastoral Constitution of the Church in the Modern World exhorted that economic growth and technical progress must not be for profit or domination. Rather, it must be for the service of man, and indeed the whole man, viewed in terms of his material needs and the demands of his intellectual, moral, spiritual and religious life. And when we say man, we mean every man whatsoever and every group of men, of whatever race and from whatever part of the world (*Gaudium et Spes*, 64). The development that serves its purpose is the integral development of man, a development that is total and promotes the good of every man and the whole man (*Populorum Progressio*, 14). Man remains the centre of all developments.

The exclusion of sound ethical and moral rectitude in the context of human development has contributed extensively to the failure of the so many developments efforts in Nigeria nay Africa. The eruption of ethical relativism in the context of ethics and belief systems in development discourse is one that poses veritable challenges. For ethical relativism, truth is relative and depends entirely on variable factors such as person, place, culture, time and circumstance (Ekwutosi, 2006). In other words, there are no universal moral standards-standards that can be universally applied to all peoples and at all times (Singer, 1993). This is contestable. For if no moral certainty and objectivity exists then there would be no basis for objective moral judgement. And when objective moral judgement does not exist, universally accepted truths both in sciences and in the lives of people would have been impossible. Besides, if there is no objectivity in moral matters, the objectivity of science and technology would also be limping. But what is objective morality? What do we mean when we say that morality is objective? In the words of Ben Okwu Ebo, "When we say that morality is objective we are not referring to a tangible thing that can be measured in the laboratory, but rather the objectivity lies in the fact that as human beings we have the same disposition to think alike in things that concern morality" (Eboh, 2005).

Nevertheless, it does not mean also that there are no certain relative elements in morality. Omoregbe teaches, "The fundamental moral principles are the same all over the world but the particular manner in which these principles are concretely applied in any given society is relative depending on the special circumstances of the society in question. Hence there are different moral rules distinct from the fundamental moral principles in different societies. These moral rules prescribe the manner in which certain fundamental moral principles are to apply in a given society in view of the special circumstance of that society" (Omoregbe, 1989). Given the two positions advanced, solely relativist ethical theory would be highly unrealistic



while a solely absolutist ethical theory would sound so dogmatic that it could lose sight of the freedom of the individual to act as free moral agents (Echekwobe, 1999). The safety lies in the complementarity of both approaches for true human development.

Indeed, every true development that would serve the good of man as a moral agent cannot be indifferent to Ethics and Belief systems. Man is not just a being that deals with economics; man is essentially an ethical being that can differentiate between good and evil. And true development of man and society cannot take place in such situation of evil and deceit. It must respect the fundamental values, norms and healthy customs of a people. After all, development is not only about scientific innovations and technological breakthroughs. It is the entirety of what makes life of man in the society liveable. In fact, John Paul II averred, to 'have' objects and goods does not in itself perfect the human subject, unless it contributes to the maturing and enrichment of that subject's being' that is to say, unless it contributes to the realization of the human vocations as such (John Paul II, *Sollicitudo rei Socialis*, 28).

### **Ethics and Belief System as Inhibiting to Research, Policy and Practice in Development?**

From the foregoing analysis of the interactions between Ethics and Belief Systems, it is evident that both disciplines have tremendous influences in the lives of the people, who are in turn active agents of development and positive changes. It is our aim in the current session to investigate on the possible negative influences or otherwise of Ethics and Belief Systems in the wide spectrum of our developmental discourse. Opinions abound that Ethics and Religion can influence the natural flow of research and policy in the dynamics of development. It is our task here to explore such a possibility.

It was John Mbiti who widely wrote that Africans are incurably religious (Mbiti, 1991). Ethics and Religion are therefore essential for the understanding of the background and operative forces of the African life and world view (Obodoechina, 2005).

Yet our preoccupation is to underscore the intimate relations between Ethics and Belief Systems in their common roles about linking research, policy and practice for development. Ethics and Belief systems constitute essential aspects of the life of man in the society. They are both pervasive in their influences. They can affect both positively and or negatively research, policy and practice. For instance, the experience of widespread corruption in all the segments of Nigerian society is as a result of ethical and moral barrenness. And corruption is the bane of all projects and policies in Nigeria. In the atmosphere of corruption, where neither ethics nor religion can influence the ebb and flow of events, research results, policy

enactment processes and the implementation of the policies into practical use cannot be realised. It is therefore not surprising that the expected scientific and technological innovation in Africa has not happened. It is not the problems of research and policies; it is the problem of corruption. Policies cannot implement themselves. And Nigeria nay Africa is not lacking in good policies that are capable of turning the development scenario in Africa around. The human and material capital in Nigeria and nay Africa are enormous and are quite capable of moving the continent of Africa far above the emerging Asian tigers in industrialization and technological advancement. But for lack of moral responsibility and an enduring ethics of value, Nigeria nay Africa is trailing behind in all aspects of development. It is not surprising that when a nation begins to lose its sustaining ethical and moral orientations, it begins to sink into oblivion.

Disorientation and the erosion of the foundational values of a people can tarnish the social identity of such a people. At this stage, the worms that are capable of destroying the beans are no longer outside, the worms are inside the beans, and there is no hope of cure. The 'worms of corruption' and 'valuelessness', have eaten deep into the moral fabric of the African nations that development policies remain unapplied and they suffer attrition and rust. The clear absence of the rule of law that is capable of some form of decency in the private and public fora is another index of a nation that is heading for perdition. The rule of law can safeguard life and property and ensure the common good of the people. But where the respective arm of government and the appropriate agencies vested with the authority and powers to ensure proper implementations are soaked in frivolities, lawless and violent actions occasioning harm would be rife. This is the fate of the Nigerian society.

In the study of the state of contemporary America, 'Habit of the Heart' by Robert Bellah, Richard Madson, William Sullivan, Ann Swidler and Steven Tipton, had argued that 'any coherent and viable society rests on a common set of moral understandings about good and evil, right and wrong, in the realm of individual and social action and that these common moral understanding must also in turn rest upon a common set of religious understanding that provide a picture of the universe in terms of which the moral understanding make sense (Bellah, 1975). Is it possible to argue here that the development scenario in Nigeria nay Africa has failed on its inability to reflect these dimensions? Is it possible to think that corruption and moral decadence which is the bane of our African socio-political experience make our development agenda untenable? Is it even conceivable, (given these antecedents), that authentic integral development, with all its implications for the rule of law and the avowed respect for the dignity of every human person, will continue to elude Africa, with its sophistications in research, policy and practice, if the ethical and religious armaments direly

needed for a national reorientation are not consciously pursued, persevered and made to be effective in the entire private and public sectors of our life as a people?

In fact, it is worrisome that one of the greatest social and economic problems in Nigeria and indeed Africa which must be tackled is the breakdown of morals, work ethics, discipline, social responsibility, and general civility among its citizens (Akinyemi, 2002). No nation can attain any reasonable developmental heights without these essential ethical and moral indicatives. As a matter of fact, Several Reports Index of the Transparency International makes it evident that Nigeria is among the most corrupt Nations of the world. Is it any wonder that we are not developing? It is our moral ecology that is depleted. It is that tragic loss of that sense of meaning beyond us, that creates certain emptiness at the heart of our common life.

I think it is in the realisation of the dire need for ethical and moral probity in the private and public sectors of our life that informed the actions of subsequent Nigerian governments to embark on several moral agenda. For instance, on assumption of political office in 1979, President Shehu Shagari remarked that, 'more than anything else, among the problems facing his administration were that of bribery, corruption, and lack of dedication to duty, dishonesty, and all such vices' (Enahoro, 1982). It was the same motive that occasioned the several Acts of Government and Decrees like the War Against Indiscipline (WAI) of General Muhammed Buhari/Idiagbon administration of 1984, which was later changed to Directorate of Mass Mobilisation for Social Justice and Economic Recovery (MAMSER) by General Ibrahim Babangida administration of 1985. This too was changed to what we have today, the National Orientation Agency (NOA) by the General Sani Abacha administration of 1993. The Act of National Assembly under the General Olusegun Obasanjo administration established in 2000 the Independent Corrupt Practices and other Offences Commission (ICPC), and in 2004, the Economic and Financial Crime Commission (EFCC) with a view to dealing with corruption in our society. It is doubtful whether these agencies and bodies achieved their reasons of being since the spate of corruption and crime in Nigeria nay Africa is still alarming.

It suffices therefore to underscore that all the mega stakeholders in the enterprise of government, from research to policy enactment and its applications, at all the stages and procedures of their involvement, if the business of governance will translate into well-being of the people, must toe the part of ethical and moral integrity. The task in normative ethical theory within the purview of our theoretical ethical discourse admits nothing less than this commitment. And it is in this commitment that the expected linkage between research, policy and practice will translate to proactive development for Africa and its nations.

Apart from the endemic corruption in the fabric of our society, religious ignorance and superstition, hypocrisy and obnoxious religious beliefs, obduracy and fanaticism result in Mind Block that make research, policy and practice for development impossible in Africa. Religious ignorance and superstition for instance are the lack of due knowledge of one's religious teachings and doctrines. It includes the possessions of half-truths of faith and the inability to grow in due knowledge about one's religious faith. The consequences of this anomaly are great. First and foremost, one is not a good religious man or woman for lack of due knowledge. For the want of knowledge too, one begins to act in grave culpable ignorance and interprets the tenets of one's religion in the most abysmal form. Most times the personal interpretation of the tenets of one's religion becomes too inhibitive to the discipline of hard work required for authentic human promotion and development. The setback in development that results from useless mind sets over religious matters in most of our rural communities is incalculable.

For instance, in Opi Nsukka Nigeria, a good number of developments projects have been abandoned. A simple survey within the local inhabitants across religious divides was conducted in the community to assess the impact of science, policy and practice in the light of Ethics and Belief systems around them. Below is the output of response given by 200 persons selected among teachers, community leaders, religious leaders and higher school students using stratified random sampling technique (cf. Annexe 1-4, pp.26-28).

The above graphic demonstration in respect of the obstacles facing the implementation of government policies within Nsukka geo-political zone is vivid on corruption and superstitious belief in the Deities as the major obstacles. Beginning with the case of Copernicus and Galileo the exact relationship between Science and Religion was a subject of great debate. Even till today, the debate goes on in several fronts. But whether true Religion obstructs the development of science as a self-perpetuating field of intellectual endeavour is disputable. Sometimes a distinction between the tenets of a religion and the actual practice of the adherents reveals a thick religious ignorance and extreme fundamentalism. Faulty interpretation of some Biblical and Koranic texts can sometimes hamper economic development. People can become fatalistic.

In his historical excursions on how the Catholic Church built the Western Civilization in the context of hostility towards science, Thomas Woods, remarked, that "The animism that characterized ancient cultures which conceived of the divine as immanent in created things, hindered the growth of science by making the idea of constant natural laws foreign. Created things had mind and wills of their own –an idea that all but precluded the possibility of

thinking of them as behaving according to regular, fixed patterns (Woods, 2005). It is therefore possible that science could have had stillbirth in certain cultures and traditions. Just like in Opi - Nsukka Nigeria my community of residence where fear of the 'Uhere Deity' at Opi Agu, prevented the Engineering Firm handling the Uhere Bridge from completing its assignment. As a result, the entire residence of Opi Agu Nsukka Nigeria who were otherwise blessed with fertile arable lands are now living almost isolated from the rest of the world for lack of access road. Their rich agricultural produce cannot be transported into the city. And their life of abject poverty cannot be changed in the context of a warped and atavistic notion of religion.

In the same vein, obduracy and fundamentalism in religious matters is another hindrance to innovation and development. This is where one does a useless word-for-word Biblical or Koranic exegesis favouring a point of view that is totally out of tune with the reality of religion and good life. It is a form of religious extremism where one recognizes no legitimate boundaries between the language of faith and reason. As it were, one fails to recognize the signs of the times in such approach to religious issues. The evil of the Inquisitions and the Jihads had their history and operational guidelines from such barbaric fundamentalist dispositions. With a brazen arrogance, and pride, fundamentalism is gravely intolerant. It is also injurious to scientific innovations and development. It breeds incessant religious conflicts and wars that disrupt life and progress in the society. In fact, the attempt to impose single religious visions on a society runs counter to the religious imperative of a highly pluralistic world (Sacks, 2005). Yet we live with the carnage and blood bath that result from such barbaric impositions. Take for instance the manipulation of the religious sentiments of the Moslems in some parts of Northern Nigeria with the introduction of the Sharia religious law in some of the Northern states. Here Governor Ahmed Sanni Yerima of Zamfara state, who actually began this, had other sinister political and economic motives in view. Even as he introduced the religious Sharia law, he was of the opinion that the sharia was capable of bringing back peace and order, wiping out corruption and bringing economic prosperity to the people. With this, he achieved an unbelievable cheap popularity among the Moslem populace of Northern Nigeria. It is sad, that this type of undertaking which has all the appearance of a vicarious religious duty was in reality an exploitation of the deep-seated religious sentiment of the people in the context of seeking political power and influence. His interference in the specific area of religion with such bravado was tantamount to politicization of religion. And this caused great strife and rancour among the different adherents of other religions. The politicisation of religion has nothing to do with the doctrines of the respective religions apart from causing death of opponents. It is largely evident in the pages of history and even now and again in our society to witness where

religion has been instrumental to racial tensions and even wars. Instances abound with the Christian Inquisition and Crusades, of the late Middle and early Modern Ages and the Moslem Jihads or the Holy Wars of our time (Ukwuegbu, 2008) Religion has also been understood to have contributed intensively in many cases of ethnic, political and economic conflicts, flagging with zeal the embers of hatred and intolerance.

### **Recommendations and the Way out of the Labyrinth**

At the end of our reflections on the roles of Ethics and Belief systems in the quest for proper linkage between research, policy and practice for African development, we have been able to underscore the place of Ethics and Belief systems as crucial in the said inquiry. We now dare to hazard prospects for a proper harmonization of Ethics and Belief systems as useful tools capable of aiding scientific and technological innovations in Nigeria nay Africa.

Linking science, policy and practice in governance is indeed an interesting dimension in the dynamics of national development. It indicates the indispensable place of and the intricate relationship that exists between research, policy and practice in any developmental agenda of any nation. In fact most developmental efforts of governments in Nigeria and nay African have yielded no appreciable results as a result of dearth on studied research on one hand and the ineptitude of failing to utilize the very few available research results, along with paucity of implementation of enacted policies.

It is absolutely being recommended that effective communication networks between researchers and policy makers and practitioners' be designed, setting out the strategies and the pro-active ways forward for bridging the gap for African development.

It was also evident in the course of our reflections, that economic development has much to do with human endowments, social attitudes, political conditions, and historical accidents' or antecedents. Social attitude is the totality of beliefs and values that can cause human behaviour to be what it is. The technological backwardness of the nations of Africa has been blamed on the inability to take care of these fundamental caveats in the development scenario. Education, persuasion and introduction of new methods and techniques of production may serve useful purposes. This involves the adoption of 'Modernisation ideals' for rapid economic development. This means the involvement of 'the social, cultural, psychological frameworks which facilitates the application of tested knowledge to all phases of production' This include rationality in thought and action through a deliberate cultivation of scientific attitude and application of modern technology in order to increase productivity,

raise level and standard of living, and bring about social and economic equalization.

Corruption arising from grave ethical and moral barrenness has also been identified as the bane of Africa's development. There is therefore an urgent need for ethical and moral regeneration and rebirth. This applies to every segment of the Nigerian and African societies since we have all been endangered with endemic corruption in every fabric of our society life. Ethical and moral rebirth can take several forms, beginning from the families to the larger organisations and bodies in the society. The rebirth has to be aggressive, since 'the worm that spoils the beans is already inside the beans'.

Though religious bigotry and superstition with their attendant consequences of religious violence and mind blocks have been identified also as inhibiting factors in the attempt at African science and technological innovations, ethics and belief systems remain pervasive in the life of man in the society. It remains true that rightly lived relationship of man with God is a force for justice and peace in the society. In a society where peace remains a value, holistic development can be attempted.

In the words of Jonathan Sacks, religious values may have been eroded but they are not eclipsed. They lie at the heart of some of our deepest moral commitments; to the worth of the individual, to society as a covenant rather than as a contract, to morality itself as a communal endeavour, and to the family as the crucible of personal relationships (Sacks, 2005). I see ethics and belief systems dominant in the life of the society. It remains as the network of symbols and meanings that constitute society' (Thomas Luckmann, 1967). In fact religion endures as 'the awareness of men of their finiteness and the inexorable limits to their powers, and the consequent effort to find a coherent answer to reconcile them to that human condition.' (Daniel Bell, 1977). A more tolerant attitude towards religion for the good of the society must be adopted. For instance, the invitation to a meeting of heads and representatives of world religions in Assisi in 1986 was not just a gathering of religious institutions, rather, it is a 'case of being together on a journey towards truth, a case of taking a decisive stand for human dignity and a case of common engagement for peace against every form of destructive force' (Benedict XVI, 2011). In the light of the pervasiveness of ethics and belief systems, development experts must admit that true religions have the necessary functions of helping to dispose human hearts, so that true peace can be fostered and preserved. And we know that no meaningful development can take place in the absence of peace and order. We must bear witness to the great power of religion for good. In fact, true religion will be able to address the anomalies associated with religious bigotry and superstition, and create human harmony, justice, prosperity and improved standard of human life.



Just as we have the ability to draw back from the abyss of ecological disaster, so we have also the ability to change directions in the face of social disaster (Sacks, 2005), that are the fruits of our ethical and moral decadence that make our research, policy and practice yield no results. It must be borne in mind that the government legislations and fiscal policies alone are not adequate to solve all societal problems. In fact, survey after survey reveals the extent to which social ills survive legislative attempts to cure them. Poverty, underachievement, educational standards etc. are relatively resistant to government actions, whether the state is pursuing a maximalist or minimalist course. Hence, the force that shapes a society lie too deep to be reached by any of the political regimes (Sacks, 2005). And so a combined effort and synergy among the major stakeholders in human development become essential for the needed scientific and technological transformations in Africa.

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# Section 2

## **Conceptualizing Research, Policy and Practice for Sustainable African Development**

# 8. Triangulation of Research, Policy and Practice: Pathway for African Development

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## **Abstract**

*The scenario in developing countries is such that, researchers, actors of policy and practitioners live in isolation in terms of their goals and operations, without synergy of purpose and orientations. As a result of this researchers baffle on why much resistance are found in policy changes despite good, clear and strong inferences from research findings, while drivers of policy bemoan the inability of many proactive researchers to communicate and make their research findings accessible and digestible on time for policy implementations. On the other hand, practitioners in most cases are not so much concerned, but rather go on with life as they trade on the threshold of events. However, utilization of research findings in policy development, decision making and practice have the potential to save life, reduce poverty, fight hidden hunger, improve livelihood, aid continent's ability to withstand global shock and sustainable development. This paper uses Triangulation of Research, Policy and Practice Pathway (TRPPP) to argue that there are more potential for effective development, when good linkages exist between research, policy and practice in African countries. It identifies, funding, political structures, socio-economic statuses, enabling environment, credibility, advocacy, networking, media and external influences as major challenges. The paper also highlights some strategies and opportunities which could enhance linkages between research, policy and practice for African development.*

**Keywords:** *Triangulation, Research, Policy, Practice, Development.*

## **Introduction**

In both local and international communities, economic and social developments are increasingly driven by the advancement and application of knowledge. Most advanced societies depend on evidence based researches to secure a robust foundation of knowledge for its citizens. Education in general and higher education in particular are fundamental to the construction of this knowledge through research findings.

In this 21st century, constructive research evidence is the driving factor in developmental enhancement. Ogunji et al. (2011) stated that the most effective strategy to break away from the vicious cycles of under-development, poverty, ignorance, disease, chronic economic dependency and political instability is through qualitative education. It was further opined that the entire intellectual and professional life of a country depends on sound higher education, especially from universities which provide quality products of international standard through meaningful research aimed at solving societal problems. The long-term development of society is therefore dependent upon such curiosity-driven pure research to secure a robust foundation of knowledge which constitutes the bedrock for development and the prosperity of coming generations.

The translation of evidence based research into implementation strategies is the sole responsibility of policy makers, who incidentally are often in conflict, bias or completely not attuned to the values of this knowledge (Drayton, 2011). Greater integration between research, policy and practice are required to provide an evidence based research that is transparent, and adaptive to solving the complexities of problems facing mankind (Macleod et al., 2008). Linking research evidence to policy is crucial to improving the evidence base of social, economic, health and environmental development of any country. This process has not been recognized in most African countries and as such hinders equitable distribution of high quality services for the advancement of human capacity.

Linkages between research, policy and practice becomes necessary because, it is when all the actors in these sectors are taken into consideration that research results will have impact on development. Sauerborn (1999) noted that the world of actions are not separate from the sphere and origin of knowledge, but rather are inseparable parts of each other. The man and woman of action have no less responsibility to understand the world than the scholar who is the researcher, while ideas are the true forces that change the tangible world.

Advanced communities have responded to this challenge and achieved a stable state where the search for workable policies and practices have shifted from 'one-size fits all' solution to

tailoring research findings to problem solving devices (Court et al., 2005) through collaborative integration among all the actors of development.

Evidence of this could be seen from the giant steps taken by WHO, when it convened the Ministerial Summit on Health Research in Mexico City, where all major stakeholders were mandated to strengthen or to establish activities to communicate, improve access to, and promote the use of reliable, relevant, unbiased and timely information from research for development. The organization further mandated WHO's Director-General to assist in the development of more effective mechanisms to bridge the gap between the ways in which knowledge is generated and the ways in which it is used, including the transformation of research findings into policy and practice (WHO, 2004; Lavis et al., 2006). African countries need to key into this approach of development-driven knowledge, disseminated to the practitioners through translations made by drivers of policy.

The failure of policy makers and researchers in many African communities to understand each other's roles and contributions in policy making is a major stumbling block in linking evidence based research findings into policy and practice. Evidence have shown that those strategies promoting interactions and linkages between researchers, policy makers and practitioners could be useful in development, only if the entire stakeholders understand each other's role and work in close collaboration. It will generate evidences which are in line with policy needs and therefore aid timely utilization of findings in policy making process for practice (Zahiruddin et al., 2010). This is very important, as ineffective or misdirected policies incur substantial financial and social costs, resulting to underdevelopment. The main objectives of this review paper are to: 1) identify the challenges hindering research linkages to policy and practice, and 2) highlight the prospects and opportunities of research linkages to African development.

### **Why linkages of research, policy and practice?**

Researchers, policymakers, civil society organisations (CSOs) and practitioners in capacity development often live in separate worlds. Their dynamics, values and ways of handling evidence are quite different. Researchers often baffle on why much resistances are found in policy changes despite good clear and strong evidence from research findings, while drivers of policy bemoan the inability of many proactive researchers to communicate and make their research findings accessible and digestible on time for policy implementations. On the other hand, practitioners in most cases are not so much concerned but rather go on with life as they trade on the threshold of events (Court et al., 2005). There is an indication of gap amongst these actors. The actors include the academia, the government, politicians; professionals in

various fields of endeavours, NGOs, business men and women, knowledge brokers, industrialists, community leaders, students, civil servants, health care providers, funding bodies, the media and many more. Some of these actors come into play because they are the people to identify the policymaking process; adapt to the dynamics of the political debate; get the timing right in disseminating research results; and communicate them in a language that policymakers and practitioners can understand and finally get the feedback to researchers (Almeida and Báscolo, 2006).

Linking research to policy and practice then calls for the proper integration of all these stakeholders in a collaborative network. This is necessary because the uptake of research findings by policy makers are usually taken to be a one way traffic process, whereby a set of research findings or knowledge shift from research spheres to policy sphere without interaction (Court et al., 2004).

Research results often do not go into implementation without first being debated upon within the policy floor. When the result of the debate becomes favourable, it goes for testing which if eventually successful may be useful for policy intervention. At this stage therefore, a consensus can be reached to recommend this for implementation into practice. Young (2009) noted that even at that stage so many obstacles remain, because policy processes are very rarely linear and logical.

### **Potential challenges hindering linking research to policy and practice in Africa**

A common exhortation in developing countries is that theories and resolutions from research originate in the laboratories and end on the shelves after publications for appraisals. Research results are hardly translated downwards to the community to influence livelihood or get to the tables and faces of the policy makers for timely implementation and intervention on societal problems (Court et al., 2005). There are many potential challenges hindering the linkages between research findings to policy and practice in Africa. These barriers include:

#### **Socio-economic status**

Research and its benefits to any country's development are enormous but for it to realize all its benefits fully, its findings must be put to use. Industrialized countries utilize research for greater development because they have grown above poverty level. They go into research for the sole purpose of proffering solutions to societal problems. As soon as something new that will enhance life is discovered, it is made available to the general public using the media, internet, health care providers and educational institutions or through strong university-community engagements that are inbuilt into the entire process. Even when the research is

still in the "oven" words are already out everywhere about what use and benefit the results or expected findings would be to mankind and the society at large (Court, et al 2005).

This is however, not so in most African communities, where researchers and research evidences are faced with lots of challenges. According to Duze (2011), investments in education seem to have failed to deliver the goods in most African countries, since most of them are still battling with under-development in areas of unemployment, poverty, personal and regional inequality; illiteracy and inability to becoming self-reliant. All these put together constitute challenges to the ineffectiveness of researcher in providing evidence-based results which could sell through for effective policy translation to practice.

### **Poor funding of educational research and external influence**

Most of the educational institutions established to be centres of knowledge creation and dissemination are financially handicapped. Researches which are evidence based that will enhance development are usually sponsored and tailored by external bodies, who establish the guidelines for such research processes to suit their own mandates.

For example, a breakdown of Nigerian budget of 2010 showed that N295.3 billion representing about 6.4% of the budget was allocated to education. Although, this was slightly bigger than the President Umaru Musa Yar' Adua's initial proposal, which was N249 billion (6%), it failed to address those major challenges in the sector. The Education Rights Campaign (ERC) rejected the 2010 Appropriation Bill passed by both houses of the National Assembly saying that it failed to address funding of vital social services most especially educational related researches. It therefore called on the President Goodluck Jonathan not to sign the 2010 appropriation bill into law until the allocation to education is increased up to 26% as recommended by UNESCO.

Okoli and Duze (2011) noted that, there is obvious discrepancy in the management of Nigeria's education that must be quickly addressed to ensure education's capacity to bring about sustainable national development. By June, 2010, Nigeria still grouped by UNESCO among the 'e-9' countries parading about 70 per cent of the world's illiterate population. The only other African country in this group is Egypt with a lower percentage than Nigeria.

Also, among African Countries, Nigeria (the giant of Africa) was noted to have allocated the least in recent years to education (highest 11.12% in 1999, lowest 1.83% in 2003) as against UNESCO's 26 per cent minimum budgetary allocation to education (Ajao, 2003).



### **Political environment**

Court et al (2005) noted that political context has consistently been identified as the most influential factor hindering the linkages between research, policy implementations and practice. Policy makers in most developing countries of the world are often heavily influenced by relatively uneducated politicians who do not value research evidence much and this is the reason why evidence based researches often play very minor roles in policy processes.

Young (2009) noted that a recent ODI study of factors influencing chronic poverty in Uganda discovered that only 2 of 25 were researchable issues. He continued that in 2003, Vincent Cable, a senior member of the UK parliament, said that politicians are practically incapable of using research-based evidence because, among other things, few are scientists, and they don't understand the concept of testing a hypothesis; while Phil Davies, then deputy director of the governmental and social research unit in the UK Cabinet Office, described how policymakers tend to be more heavily influenced by their own values, experience, expertise and judgement. There is also the influence of lobbyists, pressure groups and pragmatism based on the amount of resources they have available rather than by research-based evidence.

For this and other reasons the chances of policy makers accepting inputs from research evidence is bleak. Hamper et al (2010) emphasized, that the nature of the political system, as well as level of strength of government leaders in accepting research findings are governed by their personal interest, those around the corridors of policy, capacities of both policymakers and level of influence of external actors. These factors shape who will participate in the policy process, on what terms, and how the process will be structured. Perpetually, it becomes imperative that only those interest groups at the corridors of power will have access to the forum where policy decisions are made (Hussain, 2011).

### **Lack of well-coordinated communication**

The process of cross-referencing of ideas among all actors of development is crucial for any meaningful advancement in any country. Historically, there has been a rigid separation between researchers and policymakers, allied to a mutual intellectual disdain. Generally the notion has been that the fields of knowledge production, policy formulation and implementation are very different, their goals and modes of operations are completely parallel, unconnected and not easily interchangeable. This lack of cooperation hinders coordinated strategies for effective developing, and equally bridges proper communication and understanding between actors of policy in Africa.

### **The character and credibility of researcher**

The reputation of the people conducting research may hinder the proper utilization of research findings for policy and practice. Robin (2005) highlighted that in most African communities, the out coming of research is usually a reflection of the politics, values and assumptions of the researchers and those commissioning the research. Research has the most access to policy-decision when it is topically relevant to the pressing policy issue of the day and when the source of information together with the commissioning body is well known to the policy makers. When findings do not key into the pressing need and interest of the policy makers, its implementation becomes difficult. It is important that analysts examine the societal interest and priority before embarking on any research work so as to influence policy.

Hanney et al., (2003) noted that the existence of relevant research alone, though necessary, is not sufficient to drive development. He suggested that examination of the policy-making process confirmed it to be extremely complex, with many genuine obstacles hindering evidence-based policy-making practicable. However, there are some effective strategies and opportunities which could boast linkages between research, policy and practice for African development and thus make the policy making process easier.

### **Triangulation Pathway**

The involvement of potential users of research as well as the policy makers at the formulation stage of research will increase the likelihood that such research results will be utilized in solving the societal problems. The justification for triangulation pathway in research, policy and practice is coherent in synthesizing the priorities of the people among all odds. It provides greater transparency and accountability in policy formulation and implementations. Triangulation opens-up mechanism to be widely used by the players of research, policy and practice in a consultative manner. It involves a situation, where specific questions are widely circulated to gather opinions. Views from key stakeholders and interested parties are sorted and selected before policy decisions are made (Morris, 2006).

The process of triangulation ensures that all stakeholders eschew bias and work together in unity of purpose. Interest groups may lobby at various stages by collating data from all actors and influencing definition of priorities among the needs, decisions, or policies of the country. Some decisions generate a search for additional information and further negotiations, while others produce policies.

New policies can also lead to new interest groups and new political challenges (Morris, 2003). It is important that analysts examine the actors in the process and evaluate the sources of

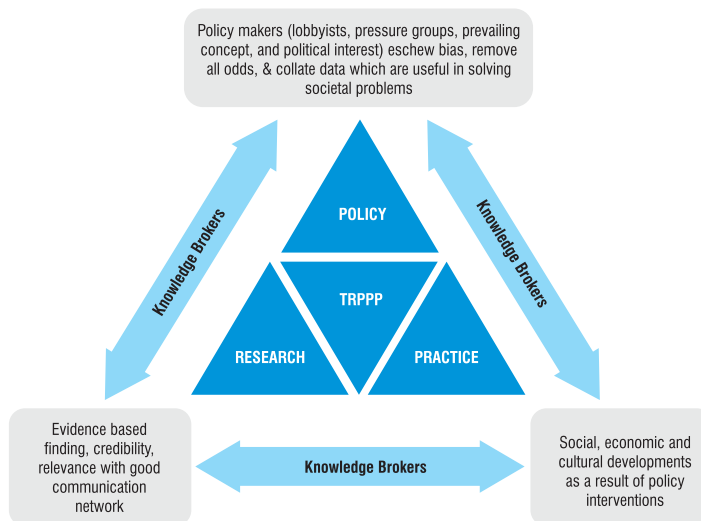
## Triangulation of Research, Policy and Practice: Pathway for African Development

*Nnamani, C. V. and Oselebe, H. O.*

information they trust, the type of information that interests them, how they evaluate information, what motivates them to make decisions, and the actors with whom they interact, compete, and form alliances with (Almeida and Báscolo, 2006).

The triangulation linkages and synergy between result oriented researchers, drivers of policy and practitioners in African contemporary society (Fig.1) is the pathway for any meaningful development. The policy process is similarly represented, starting on the left side of the conceptual figure and moving clockwise. When the needs or problems that arise can be addressed on the basis of specific policies, there is an endeavour to gather information on them from a variety of sources by all the stakeholders. Interest groups may lobby at various stages and thereby influence definition of priorities among their needs, decisions, or policies. As in the previous process, some questions return to the information-gathering stage, before policy is designed. Some decisions generate a search for additional information and further negotiations, while others produce policies. New policies can also lead to new interest groups and new policy challenges.

Triangulation of research-based evidence can contribute to policies and practices which will greatly have dramatic impact on peoples' lives in many African countries if properly utilized. The near absence of this integration in most African setting necessitated a recent collaborative project between Association of African Universities (AAU) and Association of Universities and Colleges of Canada (AUCC) project funded by the Canadian International



**Figure 1: The Triangulation Pathway Model**

**Legend: TRPPP - Triangulation of Research, Policy and Practice Pathway**

Development Agency (CIDA), aimed at strengthening university-stakeholder relations in higher education, for which six universities in Africa is benefiting (including Ebonyi State University, Abakaliki, Nigeria).

### **Confidence in the researcher and research evidence**

The components essential for successful collaboration are trust, openness, understanding, cooperation and transparency among the stakeholders. Policy-makers look for consistency and reliability of the evidence. The extent to which they value research findings and their utilization in the policy making process is influenced on whether they trust the researcher and her capabilities. Translation of the policy statement into implementation for practical intervention needs a strong convincing hold on the policy makers. The extent to which the policy makers value the research findings in the policy making process will influence how far it is implemented and utilized (Zahiruddin et al., 2010).

Policy actors in most developing countries often do not see research findings as problem solving device but rather as a part of routine work by academia, as an activity to receive some incentives and/or an act to get promotions during appraisals. Rubin (2005) suggested that in order to generate evidences which are highly valued by policy makers researchers need to apply available knowledge, under the prevailing socio-economic and cultural environment of the policy makers, because those are the findings that will attract the interest of those at the corridors of decision making. This is necessary because weak link between research evidences and policy interests explains the lack of consensus between research and policy.

### **Advocacy and Networking**

Research results often need to be contested, debated and tested before a consensus can be reached on their recommendations for practice. Simply, presentation of research results to policymakers and an expectation for their implementation is very unlikely to work, if there are no good advocacies to lobby the policy makers regarding the usefulness of such evidences. Although most policy processes do involve a sequence of stages from agenda-setting through decision-making to implementation and evaluation, they rarely take place in an orderly fashion.

Researchers need to understand the political factors which may enhance or impede uptake and develop appropriate strategies to address them. There is need to engage closely with policymakers throughout the process of research, from identifying the problem, undertaking the research itself and drawing out recommendations for policy and practice (Rubin, 2006). This could enhance successful linkage of research to policy and practice.

### **Making research accessible**

If research results are not accessible or not easily understood by the targeted audiences, it simply does not 'travel', thus, failing at the first hurdle in the process of trying to bring about change. Making research accessible aims to unpack the variety of different ways research can get to its end users, taking into account the different contexts and situations that these actors reside in (Court, 2005).

Evidence providers need to realize that most policy makers are often too busy to access the hung number of data which get to them or not trained enough in the languages of articulating and understanding the intricacies of retrieving information from the internet. Zahiruddin et al (2010) stressed that aside from the above, retrieving of information/evidence is considered as a time consuming process for most policy makers. It then becomes imperative for researchers to carefully articulate ways of sensitizing and assisting policy makers to effectively manage the vast quantity of information they received. Researchers could use media, fliers, conferences, dialogue as well as using the lobbyists to disseminate findings.

### **Establishing good communication channels**

An explicit communication strategy for the researchers is for them to identify the roles and responsibilities for communicating research results to research managers, and all the people who has input to the work. Macleod et al., (2008) suggested that to enable robust policy making, there is a demand for an inclusive process that enables opening up the science-policy discourse to a range of expertise, value positions, and modes of thinking. Such process allows all the stakeholders to have a contributory input to issues that affect them. It equally gives all the players a sense of belonging and that process is through well-coordinated communication medium (Prager and Nagel, 2008).

Rubin (2006) suggested that the acknowledged gap in flows of research information to policy and practice has led to establishment of appropriate bodies whose sole responsibility are to network, lobby and disseminate research results to the various players. Such initiative led to the formation of Getting Research into Policy and Practice (GRIPP) - a collaboration of research programmes concerned with operations and health systems research - and the Global Development Network (GDNNet), which devotes particular attention to supporting researchers and research institutions to raise the profile of evidence based research in developed countries, and provide greater scope for 'home-grown' policy for developing and transitional countries. This type of bodies could ensure research linkages between policy and practice in African development.

### **Organizing research seminars, conferences and workshops**

Seminars aimed at encouraging dialogue between policy makers, practitioners and researchers to promote linkage and exchange of ideas between these groups are very necessary. The audience is targeted according to the topic of the seminar. For example the triangulation conference organized in 2009 in Nigeria on HIVAIDS had various stakeholders like practitioners who were conference conveners, the researchers who had conducted evaluation works on various aspects of the epidemic, vulnerable members within the society, carriers and policy makers.

Face to face discussion allowed researchers to express the usefulness of their results and concerns to the prevalence of the epidemic, practitioners to talk about case examples out of personal experiences and policy makers to ask questions about research evidences and their applicability. Seminars and workshops could equally be organized for the same purpose to enhance linkage of research to policy and practice on diverse topics which could trigger off development in African counties.

### **Writing research brief**

Briefs are important communication tools for linking research findings to policy and practice, this is because most actors of policy and practice including other stakeholders do not spare much time in reading the full paper on research evidence. Hence the executive summary tells the story quicker and ultimately affects change (Dublin, 2005).

### **Conclusion**

This review paper on linkages between research, policy and practice to enhance development in African countries has actually noted policy-making process to be extremely complex, with many genuine obstacles hindering evidence-based policy-making efforts. However, there are some strategies and opportunities available to researchers which could facilitate their efforts in bringing effective research linkages to policy and practice in African communities.

Such strategies include triangulation pathway, organizing research seminars, conferences and workshops, establishing communication channels, making research accessible, advocacy and networking, character and credibility of researcher and writing research brief. Well-coordinated triangulation between researchers, policy makers and practitioners could strengthen linkages, timely and effective development in Africa.

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Written by on February 7, 2011 – 11:03



# 9. The Research - Policy Nexus: Mapping the Terrain of the Literature

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## **Abstract**

*This paper reviews international literatures on the relationship between research and policy-making. It begins by exploring the development of ideas about and models of research 'use' and 'utilisation' roughly over the period from the 1970s to the present day. The paper also covers different conceptions of the policy-making process, from the rational models to the more nuanced and messy political models. This is followed by discussion of the various factors that have been identified through empirical research as impacting on or influencing the nature of, and extent to which, research ideas or findings are taken up in the policy process. The factors discussed include those relating to the knowledge production process (or supply-side factors), the policy-making process (or demand-side factors), as well as what happens in the interaction between researchers and policy-makers. The issues raised are then contextualised and discussed in the developing country and African contexts. In particular, the paper focuses on key challenges at the macro level of the political context in Africa. It also raises issues around knowledge production and research capacity on the continent. This includes reflections on the state of higher education and research systems in Africa; perceptions of inferior quality scholarship coming out of African universities; and, the tendency for governments and international agencies to draw on foreign, rather than local, consultants and experts.*

**Keywords:** *Research-policy interface; policy-making, research use, utilisation*

## **Introduction**

As a field of inquiry, the relationship between research and policy formulation, implementation and evaluation is well established, particularly in the United States and other

developed countries. There is a wide-range of literature available which documents the findings of empirical studies in a variety of disciplinary contexts, and which attempts to theorise and explain the complex interaction of factors that have a bearing on how and the extent to which research influences or impacts on the policy-making process. The focus on these issues within developing country contexts, and particularly the African context, is only recently gaining attention. This paper 'maps the terrain' of the literature and provides an overview of the main issues and themes that emerge.

### **The development of ideas about 'use' and 'utilisation'**

Prior to the so-called 'utilisation studies' of the 1970s, social scientists simply assumed that their research would in one way or another be taken up within the policy-making process. The link between research and policy was assumed to be a direct and linear one, from researchers to policy-makers. In addition, there was considerable faith in the 'objective' and 'valid' basis of the social scientific method (the positivism or empiricism of the nineteenth century), on the one hand, and the 'rational' basis of the policy-making process, on the other. As Bulmer (1982) once observed, the objectivity of the social science method was seen as the only way of overcoming the weaknesses perceived to be inherent in the policy-making process.

In the United Kingdom in the nineteenth century, social research was largely empiricist in nature. The assumption about the relationship between research and policy-making was that researchers would produce social 'facts' which, when fed into the policy-making process, would provide an empirical basis on which policy-makers would make decisions about policy (Lester & Wilds, 1990:314). In the so-called 'empiricist' or 'knowledge-driven' model, the choice of which social 'facts' to produce was the choice of the researcher.

In the United States, in addition to social facts, the social sciences also brought the explanatory power of social science theory to bear on policy problems (Bailey & Mouton, 2005:21). The so-called 'engineering model' of utilisation emphasised the problem-solving role of the researcher: the researcher as technician or social engineer would apply existing knowledge and theory to the solving of social problems (Bulmer, 1982). The engineering model was based on the assumption that the policy-making process is rational and this was matched to the positivist assumptions about social science at the time (Bailey & Mouton, 2005:21-22). This conception of utilisation has also been referred to as the 'problem-solving model' which begins with a policy problem, is followed by the identification of pre-existing research or the commissioning of new research to fill the knowledge gap, the transfer of information from the research domain to the policy arena, resulting in a solution to the problem (Elliott & Popay, 2000:462; Ginsburg & Gorostiaga, 2001:174).

These models of utilisation have embedded within them the notion of 'instrumental use' which "refers to cases where the knowledge of a single study induces users to make decisions that would not have been made otherwise" (Landry et al., 2001:336). Such use is based on a number of assumptions about the nature of research findings and the policy process including, for example, that the research findings are of direct relevance to a decision that needs to be made; that they are available before the decision needs to be made; that they are clear, unambiguous and can be applied to feasible action; that they are not transformed in any way when they move into the policy-making domain; that decision-makers are aware of the findings and can understand them; that resources are available to implement them; and, that they do not conflict with the interests of those in power (Gornitzka, 2003:135; Weiss & Bucuvalas, 1980). With all the emphasis on the use of research knowledge – especially after the Second World War – a number of studies into the extent to which research is utilised in the policy-making process were conducted in the 1970s, predominantly in the United States. The resounding conclusion drawn by these early studies was that there was little evidence of the direct or immediate use of research in government policy- and decision-making processes as suggested by the empiricist or engineering models (Glover, 1997:2; Lester & Wilds, 1990:313; Neilson, 2001:3, Porter & Hicks, 1995:4).

Two important developments followed from this revelation: first, there was further investigation and theorising about why research was not being utilised; second, alternative, broader ways of defining 'use' and understanding utilisation were developed.

A key explanation for non-use at the time centred around the perceived 'mismatch' between the worlds of the researcher and the policy-maker, encapsulated by Caplan's (1979) term 'two-communities theory'. For Caplan, non-use was "a symptom of the cultural, or behavioural, gap between researchers and policy makers" (Neilson, 2001:3). This 'gap' has been described in different ways, including differences in worldview, belief systems, values, orientations and expectations, as well as language, reward systems, and social and professional associations (Lester & Wilds 1990:314; Neilson, 2001:4). The relationship between the two has also been characterised by animosity and distrust (Gornitzka, 2003:131). Bulmer (1982) and Albæk (1995) argued that the reason why research was not utilised in policy-making in the way that the engineering model envisaged was, in part, owing to a misunderstanding on the part of both researchers and policy-makers of the processes involved.

The investigations by Weiss, Knorr and others in the 1970s gave rise to evidence of other, more diffuse and indirect ways that research found its way into the policy-making process. One such conception is usually conceived in negative terms as the "misuse of knowledge"

(Ginsburg & Gorostiaga, 2001:175) insofar as research is drawn upon in order to justify or legitimise political views or decisions/choices that have already been made, and to mobilise support in this regard (Gornitzka, 2003:137; Landry et al., 2001:336). This is variously referred to as the 'strategic', 'symbolic' or 'political' use of research. The 'authority' of science can also be used as a tool to persuade others of the merit of a particular choice or position (Gornitzka, 2003:137).

Another more diffuse notion of the utilisation of research in policy-making is that of 'conceptual use' (Landry et al., 2001:336; Gornitzka, 2003:139). This type of use refers to the way in which academic research can influence policy discourses via the development of new or adapted concepts and language, and, as Neilson (2001:8) puts it, “describes the gradual shifts in terms of policy makers' awareness and reorientation of their basic perspectives.” Weiss (1982) encapsulated the essence of this so-called conceptual use in her 'enlightenment model' of research utilisation. In short, the knowledge generated by social research can 'enlighten' policy-makers and broaden their understanding of the policy context and issues, resulting in gradual shifts in their thinking over time. Weiss also introduced the notions of 'knowledge creep' and 'knowledge percolation' to describe the manner in which research findings or concepts slowly filter into policy (and other) discourses by introducing new terms or concepts, by identifying new or reformulating existing policy problems/areas, or by shaping policy discourse (Neilson, 2001:10).

### **The policy-making process and research use**

In this section of the review, I explored different conceptions of the policy-making process, as well as the assumptions about how research is taken up and utilised in these different models or approaches. Broadly speaking, these understandings of research use for policy can be divided into two groups, namely rational and political models.

#### **Rational models**

The engineering model of utilisation and the instrumental use of science correlate with the conception of the policy-making process as rational. Rational models assume that knowledge is neutral or apolitical and “that decision-makers will be persuaded by the most accurate or scientifically plausible option” (Stone et al., 2001:5).

The earliest and most pervasive notion of the policy-making process was that it is a linear process involving a number of logical, sequential steps including problem identification/definition and agenda-setting, policy proposal formulation, formal decision-making, adoption, policy implementation and evaluation (Porter & Hicks, 1995:6; Stone et al.,

2001:5,8). In the linear model, policy-making is viewed “as a problem-solving process which is rational, balanced, objective and analytical” (Sutton, 1999:9) in which political actors make “calculated choices between clearly formulated alternatives” (Albæk, 1995:81). Stone and colleagues refer to this model as the 'rational-comprehensive model'. Here, 'rational' refers to the logical, sequential steps involved in the policy-making process. The model is 'comprehensive' in the sense that it “canvases, assesses and compares all options, calculating all the social, political and economic costs and benefits of a public policy” (Stone et al., 2001:5).

Over the years, this rational, linear model of policy-making came under fire for being an idealised version of reality. For example, it has been noted that policy-makers seldom have the time to assess all sources of research information in order to choose the best option (Neilson, 2001:15). Furthermore, (Stone et al., 2001:5) observe that this is seldom how research is used in policy-making, not least because “the combination of 'sunk costs' in existing policies, the cost (time and resources) of compiling and assessing information, and the (generally) poor predictive capacity of (social) science result in less than 'comprehensive' outcomes from the policy-making process”. And, Grindle and Thomas (1991, quoted in Neilson, 2001:19) argue that rational models “provide little insight into how societal interests, historical experiences, ideologies, values, alliances, and other factors penetrate the world of decision makers and shape or even determine decisional outcomes.”

Critiques of the linear model led to minor revisions which, although addressing some of the problematic areas of the model as a whole, still ascribed to the notion that policy-making is a rational process and draws on information in a rational way. Examples include 'satisficing', which acknowledges that there are limits to rational decision-making (Albæk, 1995:83); and 'incrementalism', which acknowledges that governments seldom have the time or the resources to conduct or consider research to inform the policy-making process and, instead, make minor alterations to existing policies (Stone et al., 2001:6). A third example is the 'interactive model' which focuses on the implementation phase of the policy-making process and is based on experience of policy reforms in developing countries. Here, policy reform is viewed as a process “in which interested parties can exert pressure for change at many points” (Grindle & Thomas, 1990, quoted in Neilson, 2001:20).

### **Political models**

These early ideas about the policy-making process as rational problem-solving gave way to other more textured notions, including decision-making as a political bargaining process, characterised by conflicting interests and limits on rationality (Gornitzka, 2003:137). Policy-

making has been characterised as a much messier and chaotic process than the rational models suggest, involving a much wider range of actors than formal decision-makers. One such model is the so-called 'garbage-can model'. Rather than calculated, optimum solutions being matched to policy problems, the garbage-can metaphor suggests that “decisions are made as if decision-makers reach into a garbage can – drawing a problem with one hand and a solution with the other, and the two are joined together” (Stone et al., 2001:10). Another is the notion of 'policy paradigms' which (Stone et al., 2001:7) defined as “an overarching framework of ideas that structures policy making in a particular field”.

Within this model, for the most part, the policy-making process is characterised by small, incremental changes to existing policies, infrequently interspersed with major policy change. In the 'policy network models', the development of public policy is seen as resulting from “conflict, bargaining, and coalition formation among a potentially large number of societal groups organized to protect or advance particular interests common to their members” (Grindle & Thomas, 1991, quoted in Neilson, 2001:23). Researchers, scientists and policy analysts are amongst such groups. Four policy network approaches can be distinguished including issue networks, epistemic communities, policy communities, and advocacy coalitions. Finally, the notions of 'policy narratives' and 'policy discourses' “emphasise how language or discourse shapes the policy agenda, and how problems and solutions are understood” (Stone et al., 2001:12).

### **Factors that impact on utilisation of research**

Studies on utilisation over the past few decades have highlighted a range of factors that impact on the effective uptake and use of research in the policy-making process. This section serves to unpack these factors.

### **Supply-side factors: The knowledge production process**

A number of issues emerge in the literature relating to the nature of social science research and the research process, and how these inhibit utilisation. A commonly cited issue is that academic research is often a slow process that spans quite a period of time (from months to years) whereas the policy process often requires answers in a very short space of time. There is also sometimes a disconnection or 'mismatch' between the process and/or the products of research, on the one hand, and the knowledge needs and realities of policy-makers and the policy-making process, on the other (Davies, 2004; Ginsburg & Gorostiaga, 2001; Glover, 1997; Neilson, 2001; Porter & Hicks, 1995; Stone et al., 2001). Many academics (and their research reports) draw on specialised terminology and jargon which makes them less accessible by non-academics and their communication about their research, findings or

analyses less effective. Even when researchers want to do research that will inform policy, they often have a poor understanding of the policy process and of “how research might be relevant to this process” (Stone et al., 2001:3).

Another example is the open-ended, critical and uncertain nature of social science research. This frequently presents a problem since social research does not offer clear-cut suggestions for action, but instead provides a variety of options or alternatives. Similarly, there is seldom consensus within the social sciences, which further serves to complicate, rather than clarify or simplify, policy options (Glover, 1993:4).

Perceptions about the quality of the research, as well as the producers of the research, have also been found to impact on the extent to which policy-makers will factor research in as “a source of useable knowledge” (Neilson, 2001:44).

The research that is available for policy-makers to draw on comes in many different forms. Weiss (1991), for example, proposed three models or hypotheses of research that would give rise to different forms of use in the policy-making process.

These included research as data, research as ideas, and research as argumentation. (Davies, 2004:7-11) lists systematic reviews, single studies, pilot studies and case studies, as well as expert evidence. He also outlines different types of evidence on which social research is often based, including impact evidence, implementation evidence, descriptive and analytical evidence, public attitudes and understanding, statistical modelling, economic evidence, and ethical evidence (ibid.:11-15).

### **Demand-side factors: The policy-making process.**

The nature of policy objectives and the manner in which these are formulated in general are often not amenable to rigorous analysis and many political issues are value-laden and, as such, are difficult to research or evaluate (Glover, 1997:2). The issue of timing is again highlighted. (Glover, 1997:2) observes that “the need for research often becomes apparent too late” primarily because governments are generally resistant to suggestions (from research/ers) for improvements or change unless there is a serious problem at hand. However, owing to the nature of policy-makers' work, it is often not possible for them to be able “to specify the exact information they need in advance” (Garrett & Islam, 1998:8).

Another factor relates to who really makes the decisions. Earlier conceptions assumed that the interaction was primarily between researcher and policy-maker. The political reality is that the



process of arriving at decisions involves a range of people including politicians and bureaucrats, but also other external interest groups (Garrett & Islam, 1998:4; Glover, 1997:3).

Research findings and information can be used in different ways by different levels of decision-makers which include, amongst others, politicians and senior civil servants; middle-ranking and street-level bureaucrats; experts, specialists and advisors appointed by government; foundation officials; and, members of civil society or non-governmental organisations (Garrett & Islam, 1998:5; Stone et al., 2001:21).

Another set of factors relates to information behaviour and use in the decision-making process. A commonly cited problem is that policy-makers are bombarded with enormous amounts of information on a daily basis but, in fact, have very little time to read, absorb and assimilate relevant information. They also give as much, if not more, attention to knowledge gained from “practical experience and common-sense wisdom” (Gornitzka, 2003:134), and to values, ideologies and beliefs of the political actors or agencies, or the pressure applied by lobbyists, interest groups and consultants (Davies, 2004:5-6).

Some of the factors that impact on utilisation are rooted in the characteristics and orientations of the decision-makers themselves. These might include their “attitudes toward information, their perceived need for information and their perception of the decision-making process” (Gornitzka, 2003:143). Education, training and experience (socialisation) of decision-makers also impact on information behaviour and use: the greater the exposure to higher education and research, the more likely the decision-maker will be to interact with researchers and possibly also incorporate research knowledge into the policy process (Gornitzka, 2003:152-153; Marouani & Ayuk, 2007:10). The organisational context also plays a role. According to (Gornitzka, 2003:145), “organisational structure defines what tasks an organisation and its members are set to perform and how these tasks are to be handled.” This includes the manner in which information is sought out, handled, interpreted and utilised.

At a broader level are factors such as the structure and culture of the political context. Gornitzka (*ibid.*:26-27) argues that different forms of state represent “different approaches to the national government's control and steering of research and higher education institutions ... as well as to the institutional context of policy processes” which, in turn, have a bearing on what happens in the research-policy nexus. Similarly, the prevailing bureaucratic tradition and political culture in a country can also shape the way in which research is used in the policy-making process, if at all, as does attitudes towards science and experts.



### **The interaction between researchers and policy-makers**

The 'two communities' theory has been critiqued for being an over-simplified and stereotypical portrayal of the worlds and individuals of research and policy. (Ginsburg and Gorostiaga, 2001:179-185) highlight a variety of similarities or at least overlaps between researchers and policy-makers including, for example, that not all theorists/researchers regard social science knowledge as objective and disinterested, but instead recognise its political nature; that theorists/researchers are heterogeneous in terms of their activities, their organisational contexts, their beliefs and values (e.g. functionalists vs. interpretivists, or those working in the centre/North vs. periphery/South); that there is heterogeneity within the policy-maker/practitioner subgroup (e.g. planning vs. implementation); and that there is overlapping membership of some researchers and policy-makers, where they have experience working in each other's worlds.

In the 1970s and 1980s, ideas about how to improve the uptake of research findings by policy-makers focussed on improving the dissemination of research. The 'how-to' of effective research communication and dissemination usually points to the importance of target audience, content (of interest to the policy-maker), packaging (accessible language, format and style), appropriate and effective communication channels (including media, lectures, training programmes), amongst others (see, for example, Garrett & Islam, 1998:10-11). The emphasis on improving communication and dissemination strategies in these ways, as a method for improving research utilisation, has been criticised in many quarters. (Stone et al., 2001:17), for example, argue that such strategies assume a one-way flow from researchers to policy-makers rather than an on-going interaction between the two and others; that they are not tailored to different target groups, nor do they take account of possible communication constraints in developing countries. In fact, (Gornitzka, 2003:132) highlights a number of ways in which increasing dissemination can have an adverse effect including “information overload, spread of premature information or wrong/false information.” She also observes that simply improving the flow of research results to policy-makers does not take account of the relevance or appropriateness of the information to policy questions.

A variety of social research methods have been developed with the express aim of improving the chances that the findings of research, as well as the associated ideas, theories and concepts, reach the intended users. These include, amongst others, qualitative methods, formative or process evaluation, stakeholder models, and utilisation-focussed evaluation (Albæk, 1995:86). Similarly, certain kinds of research designs have emerged which aim to break down the traditional barriers between researchers and policy-makers and to improve communication between the two, in order to ensure more relevant research. Such designs include applied

research, evaluation research, policy research and interest-driven research, amongst others. A well-known example is Michael Quinn Patton's 'utilization-focused evaluation' (Patton, 1997). 'Policy analyses emerged as a distinct form of inquiry designed to optimise the impact of research and analysis on policy-making. Policy analysis is action-oriented, aims to produce specific changes, provides suggestions on how to bring about such change taking political feasibility into account, and has specific user(s) in mind (Glover 1993:7).

(Ginsburg and Gorostiaga, 2001:192) use the term 'collective research and praxis' to describe an approach which they believe facilitates the greatest communication and interaction – in the form of dialogue – between researchers and their clients.

Making research more use- and user-oriented implies a range of possible new or different roles for researchers. For instance, research has shown that when researchers have different roles within their particular policy arena, beyond their role as researcher in an academic setting, the communication, dissemination and application of their research is greatly facilitated. Such roles could include those within government committees, non-governmental organisations, international agencies or professional groups.

Teaching is another method through which researchers can interact with and influence the policy community (Shove & Simmons, 1997:219). These authors also suggest that the involvement of researchers in different roles within the policy arena (“policy advisor, informant, teacher, activist or participating member of a policy community”) facilitates greater engagement with intended or potential users, and hence facilitates greater possibilities for utilisation (ibid.). They also highlight the need for researchers to assume a much more proactive role in relation to the utilisation of their work in the policy-making process. For example, some have suggested that researchers need to actively create 'spaces' in which researchers, policy-makers and other members of the policy community can interact, exchange ideas and perspectives, and debate issues (ibid.:220).

Others go beyond communication and dissemination and urge researchers and policy analysts to assume the role of 'advocate'. (Porter and Hicks, 1995:5), for example, suggest that “[at] the very least, policy projects should recognize that much of what they are about is persuasion and argumentation, and not simply the kind of self-confined, academic research effort that has inspired the (self-centred) utilization question.” Kingdom refers to 'policy entrepreneurs' who “are advocates for certain proposals or for the prominence of an idea” (Neilson, 2001:26). Policy entrepreneurs can emerge from within government, interest groups, civil society or research organisations, and are seen by some as central to the successful influence of research

on policy-making (ibid:37). For others, there is a role for mediation and translation, encapsulated in such terms as 'knowledge brokers', 'linkers', 'research brokers' or 'translators' (Ginsburg & Gorostiaga 2001:187; Glover 1993:8). Such individuals understand the research and the research environment intimately, but also understand the policy process and how to package and communicate research findings for policy. They act as intermediaries between researchers and policy-makers.

With the growing emphasis on utilisation, and greater understanding of the dynamics and challenges associated with the processes involved, specific structural or organisational arrangements have emerged that seek to play the role of intermediary in the research-policy nexus. A key literature in this regard is that relating to 'boundary work' and 'boundary organisations'. Waterton (2005:435) defines boundary organisations as “institutions that mediate between policy- or decision-makers and scientists”. Boundary organisations create the space for a common language to develop and for different parties working in different contexts (scientists, regulators bureaucrats, decision-makers, etc.) to come together (ibid.:436).

As part of a broader study into the production and utilisation of knowledge in South African higher education, (Galant, 2005) explored nine organisational forms that acted as intermediaries in the utilisation of research. These included industry-based associations, and forums and networks of researchers and practitioners, as well as a non-governmental organisation. The industry-based associations emerged “from their respective constituencies” while the forums and networks were “driven by researchers sensitive to the needs of primary users” (ibid.:10). The intermediary organisations engaged a variety of stakeholders in a range of different ways (e.g. direct interaction between users and producers, interaction at particular meetings, regional study groups, participation in committees and councils). They also employed a wide variety of strategies for disseminating research to users. For the researchers involved in these associations, networks and forums, the intermediary agencies played a critical role in “facilitating access to users and modes of dissemination that the researchers would not have been able to achieve on their own” (ibid.:11).

### **The research-policy nexus in the African context**

As highlighted in the introduction to this review, much of the literature on research utilisation and the policy-making process are based on work undertaken in developed countries, and especially the United States. There is far less literature, and hence theory and empirical research, pertaining to the research-policy nexus in developing countries, and in Africa in particular. Having said this, it is noteworthy that in the last decade, considerably more

attention has been given to the developing country/African contexts. (Court and Young, 2003:1), for example, point to the substantial initiatives on the part of organisations such as the International Food Policy Research Institute, the Overseas Development Institute, the International Development Research Centre, and the UK's Department for International Development to investigate the impact of their research on development policy. However, there is still a paucity of work on the relationship between knowledge production and development in general, and the research-policy nexus in particular, in developing countries. And, it cannot escape one's attention that all of these organisations are agencies that operate in developing countries but which have their base in the developed world. The historical context of knowledge production and policy-making in the less developed countries of the South is quite different to that of the developed countries of the North. It is important, therefore, to consider the earlier discussions about 'use' and the policy-making process, and the range of factors that impact on the research-policy nexus, in the national and regional experiences of the South.

There appears to be general agreement in the literature consulted that, like elsewhere in the world, limited use is made of research in policy-making. Perhaps more importantly is the observation that research produced by Africans for Africans is under-utilised and has little influence over policy-making on the continent (Ajakaiye, 2007; May, 2003). Various explanations for this limited use of research have been offered. Some explanations focus on the macro and micro a political context within which policy-making happens. Others give attention to the perceived weaknesses and poor quality of African research. These are discussed below.

### **The political and policy contexts of the research-policy nexus in Africa**

Court and Young (2006:3-4) observe that international development policy formulation and implementation is subject to and takes place within the context of a wide range of global trends and regulations. These authors propose that developing countries face four key challenges at the macro level of political context in relation to effective utilisation.

The first is democratisation: “It is thought that democratic contexts better enable research to be conducted and communicated (due to freedoms), and provide greater incentives for policy makers to use research (due to accountability mechanisms)” (ibid.:3). They argue that in developing country contexts, even those that are democratically constituted, the political process is not conducive to drawing inputs – including empirical research and analysis – from a wide range of sectors and actors. Their explanations for this include that policy-making processes tend to be centralised and inaccessible to the broader population; civil society is

often regarded as illegitimate or inefficient; and, policy formulation is more a response to the elite than the poor majority. (Glover, 1993:5) adds to this when he observes that “in those societies where politics is highly ideological, researchers and research institutions tend to be similarly divided, often with explicit partisan affiliations” and, as such, that research ideas and findings are only influential when the respective political party is in power. These thoughts are echoed by (Porter and Hicks, 1995:12), with specific reference to Africa. Amongst other things, they suggest that African governments tend to exhibit tighter control over the expertise available in the research-policy nexus than their Western counterparts do.

The second key challenge is markets. Court and Young suggest that as more and more developing countries enter into the global market economy (economic openness), the greater is the demand for research-policy linkages by both government and private firms. This brings new actors into the political process. Similarly, the growth in the number of civil society organisations (non-governmental organisations, the media, think tanks, etc.) is also increasing the diversity and potential influence of these policy actors. However, as (Court and Young, 2006:4) observe, “the input of civil society into public policy is still quite limited”; governments still tend to set political and policy agendas and sometimes intimidate anyone who is critical or who proposes different ideas and courses of action. Finally, information and communication technologies can be very powerful in sharing information and making some kind of impact on policy by the broad majority; but the digital divide and marginalisation of the poor can exclude many from these critical information networks.

(Ajakaiye, 2007:26) takes as his point of departure that the three major groups in the policy-making process in Africa include the governments, non-state actors, and the international financial institutions and donors. He argues that owners and non-owners of research organisations have different degrees of access to and control over policy research for Africa. Non-owners (which can include both non-state actors as well as donors) have less influence over the policy-making process, especially because their demand for research is more sporadic (ibid.:29).

There is also a range of issues about the policy-making processes in Africa that emerge in the literature. Ajakaiye (ibid.:22) suggests that the linear (or 'stages') model of policy-making is the most common conception of the process in Africa on the part of donors and other international financial institutions, as is the associated linear problem-solving model of utilisation: “The expectation has always been that good policy analysis will translate into good decision-making and subsequently into good policies.” He argues that the “undesirable outcomes” or even downright failure of many policies in sub-Saharan Africa, including those

of the structural adjustment programmes of the 1980s and 1990s, is owing to the fact that the international financial institutions tend to pay “excessive attention” to the first three stages of the linear policy model (i.e. problem definition, weighing up different options and selecting an option for implementation) (ibid.:23). Furthermore, the financial institutions tend to dominate these early stages, especially in those countries “that depend heavily on foreign aid and/or have a high debt burden” (ibid.:25). Once a policy decision has been made, these institutions or donors withdraw from the process, leaving the government and other non-state actors to implement and later evaluate the implementation. It is during this phase of the policy process that governments often confront contestation, protest and even civil unrest from special interest groups, for whom the policy decision is unacceptable or undesirable (ibid.:31-32).

### **Knowledge production and research capacity in Africa**

A number of authors have observed that African researchers are generally marginalised from the policy-making process on the continent and that research generated in Africa by Africans is seldom used for policy-making – either by governments or by donor agencies (Ajakaiye, 2007:19; Marouani & Ayuk, 2007:14). Some point to the under-developed, resource-poor higher education research and science systems in Africa (and other developing countries) as contributing to the limited use of indigenous research (Stone et al., 2001:26).

There seems to be a fairly widespread impression (on the part of international agencies and/or African governments) that local researchers/scholars are less experienced or skilled at doing research and that the research that they produce is of an inferior quality. According to (Neilson, 2001:45), this translates into less funding for indigenous scholars. (Nwaka, 2006) explains the very limited impact that social science research has on the policy-making processes in Nigeria in terms of the emphasis on disinterested, discipline-based research that is typical of Nigerian higher education institutions.

Within the existing constraints of the research capabilities of a country, it is often cheaper and easier for developing countries to buy in the research capacity they need which is often what happens (ibid.:5). As (Neilson, 2001:45) notes, policy-makers in developing countries “often utilize research results or research consultants originating from industrialized countries, since this research is perceived to be of better quality and therefore a more credible base for decisions.”

Running alongside these apparent deficiencies in the higher education and science systems in Africa is the ubiquitous presence of the international financial institutions, such as the

International Monetary Fund (IMF) and the World Bank, as well as United Nations agencies and international donors. According to some authors, in the first decade after independence, both research and policy-making were dominated by these external bodies (Ajakaiye, 2007:20; Court & Young, 2006:7; Marouani & Ayuk, 2007:4). While research and science capacity in African countries has increased and improved over the last few decades, the dominance of these agencies has continued and they still exert considerable control over policy and policy-making in Africa. A key instrument in this regard is the financial aid provided to African governments (Marouani & Ayuk, 2007:11).

Another channel of influence is through what Marouani and Ayuk (ibid.) term the “ideas aid” produced by donor research policy units, research centres or think tanks in developed countries. A third channel of influence is through “capacity-building for African civil servants and policy-makers” which allows “donors to have counterparts with a common or similar perspective of the issues in the recipient countries” (ibid.:12).

Despite the potentially negative effects of the above mentioned channels of donor influence on African countries' capacity to generate their own research for policy-making, Marouani and Ayuk (ibid.:12) mention a fourth channel of aid which can have positive implications; namely, financial support and capacity building towards developing an “independent and competent research capacity within and for Africa”. The dominance of international agencies in the production of knowledge raises all kinds of issues relating to access to research on Africa, as well as the relevance, ownership and legitimacy of such research (Court & Young, 2006:7; Nwaka, 2006:6).

(Ajakaiye, 2007:27-28) provides a typology of policy research (defined as “scientific inquiry into a phenomenon or subject that is intended to produce facts that translate into policy advice to feed into the process”) that is available to policy-making in Africa. These include surveillance/monitoring research; evaluative research; prognostic research; and prospective research. According to Ajakaiye (ibid.: 28-29), both African governments and non-state actors have limited resources and, as such, their research activities are generally limited to surveillance/monitoring and evaluative research. By comparison, the international financial institutions and donors have a wealth of funds, resources and capacities to undertake all types of policy research in and for Africa. Ajakaiye (ibid.:30) argues that the fact that African governments are confined to carrying out surveillance/monitoring and evaluative research, and not prognostic or prospective research, puts them in a Catch-22 situation. The fact that the international agencies and donors have the resources to undertake all four forms of policy research means that they are able to dominate the agenda-setting and solution stages of the



policy-making process, giving them a powerful influence over the process (ibid.:30-31). And, of course, as Ajakaiye (ibid.:31) observes, “there is nothing guaranteeing that proposals that are consistent with the interests of these organizations will necessarily be in the interest of their client countries.” This raises issue around the unequal power relations between countries and external international agencies.

Despite these obvious disparities between the capabilities to produce science and research of the developed and developing countries, some authors note that research capacity in the South has increased considerably over the past couple of decades. According to Ajakaiye (ibid.: 20), over the last decade, both the supply side and demand side of policy research in and for Africa has become more competitive. On the supply side, there has been a growth in the establishment of policy research organisations linked to governments, central banks, labour unions and other associations, chambers of commerce, consultancies and non-governmental organisations. On the demand side, the democratisation of many African countries has seen the strengthening of national legislatures and a concomitant increase in the influence of other groups – political parties, civil society, and labour unions and so on – on the policy-making process. Nevertheless, the situation is far from adequate.

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# Section 3

## **Youth and Gender Empowerment**

# 10. Strengthening Linkages between Policy Research and Policy Making for African Development: The Need for Youth and Gender Empowerment to Attain Development in Kenya

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## Abstract

*The paper articulated the need for youth and gender empowerment as a strategy for strengthening linkages between research, policy and practice for sustainable development in Kenya. It observed that youths and women form majority of the population of the country but yet remained neglected, poor, and not motivated. Reducing these impacts and concerns as well as breaking the vicious circle require concerted efforts with development interventions specifically targeted to youths and gender.*

*In Kenya, poverty manifests itself in the forms of hunger, malnutrition, illiteracy, lack of shelter and failure to access essential social services such education, health. Commitment of Kenya Government to eradicate poverty is manifest in its current development strategies, as demonstrated with the efforts towards achieving the Millennium Development Goals, especially number one, on eradication of poverty to less than 30% of the Kenyans by 2015 and the Kenya Vision 2030.*

*However, the reality on ground is that despite the many interventions put in place the poverty rate amongst these groups of people is still high, thus creating a need to intensify poverty reduction efforts in planning and programming for youths and gender. Key sectors that were discussed to ensure this empowerment were; health, employment, agriculture, education, law and order because they play significant roles in scaling up the*

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*development process and in poverty eradication. The paper concludes with discussions of challenges of policy and practice in the empowerment interventions and identifies key dimensions that are critical to youth and gender empowerment.*

**Keywords:** *youth, women, empowerment, development, poverty, Kenya.*

### **Introduction**

Empowerment is a multi-level construct consisting of practical approaches and applications, social action processes, and individual and collective outcomes. In the broadest sense, empowerment refers to individuals, families, organizations, and communities gaining control and mastery, within the social, economic, and political contexts of their lives, in order to improve equity and quality of life (Rappaport, 1984; Rappaport, 1987; Zimmerman, 2000). Efforts to support youths' healthy development and integration into the community have experienced several shifts in focus over the past few decades (Small, 2004) from a primary function of youth programs focusing on rehabilitation or containment (e.g., keeping youth off the streets) to the direction of fostering healthy youth development and capacity building through active community participation (Kim, 1998; Small, 2004) to more recent, positive youth and gender development approaches that incorporate a focus on youth and gender empowerment.

Critical to the empowerment process, is the collective aspect that occurs within families, organizations, and communities, involving processes and structures that enhance members' skills, provide them with mutual support necessary to effect change, improve their collective well-being, and strengthen intra and inter-organizational networks and linkages to improve or maintain the quality of community life (Jennings et al, 2006). The paper reviews existing literature to point out some of the efforts put in place in form of policies to address the already identified youth and gender issues to enhance Kenyan development. Throughout this paper, the term gender heavily leans towards the female gender; women. The first section focuses on areas for gender issues and the second section takes a look at the youth issues in Kenya.

### **Gender Empowerment**

The Government of Kenya recognizes that women who constitute over 50.3 % of the population (Kenya National Human Development Report, Youth and Human Development, 2008/09) are a pillar in the development of the country and that investing in women is critical. Kenya cannot fully develop when more than half of its human resource does not fully

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participate in the spheres of the economy. The achievement of Kenya Vision 2030 is pegged on the commitment to identifying and addressing the existing gender disparities in social, economic and political development. Poverty subjects an individual to a state of powerlessness, hopelessness, and lack of self-esteem, confidence, and integrity, leading to a situation of multidimensional vulnerability. Poverty has a gender dimension since women and men experience and react differently to its impact (Elishiba et al, 2010). The promotion of women's socio-economic well-being thus has to be guided by the existing global, regional and sub-regional agreements that underline gender equality as a core human rights value and principle of good governance for just and sustainable development, as noted during the EAC conference on the role of women in socio-economic development in business (Kigali, Rwanda 2011).

### **Gender and poverty**

Majority of the Kenyan poor are women. Few of them access educational opportunities due to the low value placed on the girl child, as compared to the boy. Based on the traditional beliefs and practices, women have had less or no ownership, access and control to family assets and resources, as compared to their male counterparts. In this respect, in the incidences of deprivation through poverty, they are more vulnerable. Commitment of Kenya Government to eradicate poverty is manifest in its current development strategies, with the efforts towards the achievement of the Millennium Development Goals, especially No. 1, on the eradication of poverty to less than 30% by 2015. This has created a need to intensify gender empowerment especially as regards to human resource development, health, employment, physical infrastructures, agriculture, rural development, trade, public safety, law and order, all of which are instrumental to scaling up the development process and poverty eradication.

### **Gender and employability**

Absence of women from decision-making positions as a result of which the government policies lack critical gender perspective adds to the frustration in Kenya's fight for increased development. Key in this is the low representation of women in Parliament and local Authority, which is currently at 18 and 21%, respectively as is the case in the trade unions an indication of the low levels of education and skills. The impact of these is that the policies and decisions made in these institutions are not balanced in terms of gender perspectives- men and women-hence perpetuating the existing gender disparities in resource allocation and distribution of the benefits. Equality of access and attainment of educational qualifications is necessary if more women are to be alleviated from poverty and also be facilitated to become

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key players in development efforts in Kenya. This is because high literacy levels among women is key to improving health, nutrition and education in the family and for the empowerment to participate in decision making processes, which in effect influences formulation and implementation of policies and programs at all levels.

Enrolment at the primary school levels almost has gender parity though as pupils/students advance higher in the education ladder, less and less women enrol. The percentages of women who are enrolled in the universities are few, with majority in the social sciences and few in the fields of sciences and technology.

Politics on the other hand doesn't make it any easier for the women. With a long standing stereotype that politics is a dirty game, and a reserve for men plus the violence associated with the campaigns, Kenyan women have had difficulties in campaigning for political seats. Policies to redress these serious gender imbalances would ultimately go a long way in reducing poverty as education increases one's capacity to learn and earn.

### **Gender and Health**

A healthy population is both productive and is of less liability to government expenditure. In Kenya, women have unequal access to and use of basic health facilities more so to opportunities for the protection, promotion and maintenance of their reproductive health. Deteriorating health is a big setback for any development process. Poor health affects the ability to work and fend for the basic needs which in turn escalates the poverty situation pulling down the development rates.

Education empowers women to make choices on health matters including family planning services and to decide on the number of children to have, which is a positive effort towards population control. The women engaged in professional careers or income generating activities can ill afford the opportunity cost of having many children. HIV/AIDS has for long frustrated Kenya in its efforts to reduce poverty levels among its population mainly because the woman is not empowered enough to effectively negotiate for sex related matters. Married women are the worst hit by this due to the patriarchal nature of the Kenyan society. This situation thus calls for the need to protect everyone against this infection with more attention to the more vulnerable groups who are the women and youth. Though, male condoms, have been brought into the picture to help fight this problem women need to have the negotiation skills and access to methods of protection against the HIV infection that are within their power, to initiate easily with or without compliance of the male partners for the intervention

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to work. Their input into the policy formulation and implementation to fight this pandemic is very critical as they have their own views, opinions and perspectives being in the majority of the infected as well as the managers of the sick by virtue of the gender division of labour.

### **Gender and Agriculture**

With 75 percent of the 9.2 million labor force engaged in farming (constituting mainly of youths and women), the agricultural sector is the mainstay of the Kenyan economy. The sector contributes an estimated 26 percent of GDP, and generates 60 percent of the total foreign exchange earnings (1998 estimates) (Encyclopedia of Nations, 2011). The major agricultural products in Kenya include tea, coffee, horticulture, corn, wheat, sugarcane, dairy products, beef, pork, poultry, and eggs. Tea production, which netted US\$520 million in 1998, is Kenya's largest single foreign exchange earner. Coffee and horticulture are the other major agricultural export foreign exchange earners.

The biggest sectors are still subsistent with a small percentage being commercial though efforts are being put in place to increase the scale of production, where over 70% of the activities take place in rural areas. Highest source of labour for the subsistence are the youths and women who perform majority of the agricultural work including site selection, tillage, cultivation, planting, weeding, harvesting, processing, storage and even cooking the food. Their knowledge, experience and skills on food production and processing should thus be acknowledged, appreciated and efforts made to tap it through research. Majority of the women neither have full access to and control of land nor do they have access to capital or agricultural credit. At the local levels, they are under-represented in the decision making processes dealing with land.

Gaining access to credit facilities in financial institutions, one must have securities or collaterals such as land title deeds which most women in Kenya don't have because culture doesn't allow them to own land. Women efforts to better or expand their agricultural ventures are mostly determined by the males. The government thus needs to look at the legal structures and policy frameworks that discriminate against women in regard to land ownership and access to credit facilities with the view of repealing them. The need for special programs to empower women cannot be overemphasized. But this should be based on the results of scientific/empirical need assessment. Hence, the linkage of research and policy in providing information for integration of women into modern technology of using new and improved farming techniques.



### **Gender Mainstreaming**

Commonwealth secretariat publication, Vivienne Taylor, on gender mainstreaming in development planning in 1999, reiterates that there is cognizance of the fact that indicators of development in most regions revealed that women, who constituted more than 50% of the population in most countries remained the majority living in poverty. Thus empowering women economically is not only an effective strategy for poverty alleviation but also enables them to share fully in the benefits of national development process and the production of their own labour.

Gender mainstreaming in planning and budgeting makes the development process more efficient, better and more appropriate in dealing with poverty reduction. In order to eradicate poverty and achieve sustainable development, women and men must participate fully and equally not only in the formulation and implementation of the related macro-and micro economic and social policies and strategies but also in the sharing of the accrued benefits. The marginalization and exclusion of women has been identified as a major constraint in development in Kenya and Africa as a whole. Development planners and policy makers should encourage research and therefore make policy decisions with men and women in their minds to redress the imbalance and ensure that specific needs and concerns for all members of the society are addressed and that the people most affected by poverty are involved and own the production initiatives and outcomes. The Beijing Declaration and Platform for Action (BPFA) recommends that the government should not only focus on the poverty reduction programs alone but have a review of the laws and practices to ensure the woman's access to economic resources and opportunities as well as saving and credit mechanisms

Manyasa (2006) noted that low literacy level among women contributes to high population growth rate which in turn exacerbates poverty among both women and men. This view was corroborated by Sachs (2005) who documented that women without any formal education had a total fertility rate of 6.5; with incomplete primary education: 6.2; with complete primary education: 6.0; and with secondary and higher education 4.2. Furthermore, Elishiba (2006) advised that policy makers need to stop the assumption that economic planning, programming and implementation impacts equally on women and men and should start focusing on gender as involvement of both is key to achieving development and major stride towards millennium development goals.

The affirmative action, an initiative adopted by the government to put in place gender equity and equality measures is one of the key policy considerations towards development (Ministry

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of gender children and social development; Overview of the policies and legal framework for promoting women in socio-economic development and business); In the perspective of the situation of gender disparities and poverty in Kenya, it is a way of elevating the girl child and woman to equal status as the boy and man thereby bridging the existing gender inequalities. It states that all recruitment, appointments and promotions in the public sector should comprise at least 30% of women

- > Article 81(b) that maintains a one third requirement for either gender in elective bodies giving women of Kenya at least 1/3 minimum in elective bodies

It gains support by articles in the Political Parties Act 2007

- > Article 60 (1) (f) provides for the elimination of gender discrimination in law, customs and practices related to land and property in land. This is a great gain for women as it seeks to rectify historical injustices that have continually faced the women of Kenya
- > Article 68(1) (iii) states in part that “parliament shall enact legislation which shall regulate the recognition and protection of matrimonial property and in particular the matrimonial home during and on the termination of marriage”.

A study by the Institute of Economic Affairs (IEA) in Kenya revealed that majority of the women have better saving habits but only operate small enterprises and use informal financial services due to poverty levels high among them at 50% and 46% in rural and urban areas, respectively. To tap into this resource, banks have set out to offer custom services to the small micro finance organizations operated by the women. Women can now gain access to facilities like small business loans. Initiatives like Women Enterprise Fund (WEF) is a flagship project of Kenya's Vision 2030 under the social pillar established in 2007. The Fund aims to promote women's empowerment. The establishment of the fund in line with its vision “To socially and economically empower Kenyan Women entrepreneurs for economic development through Provision of affordable and accessible credit for enterprise development, capacity building of women entrepreneurs and their institutions, support and facilitate domestic and international market of products produced by women, facilitate and support of linkages between women owned micro, small and medium enterprises with larger companies and facilitate and investment in infrastructure that support women enterprises such as markets and business incubators”, demonstrates the government's commitment to enhance the socio-economic well-being of women as envisaged in key global and regional human rights instruments Kenya associates with. The government through the Ministry of Gender, Children and Social Development currently disburses community grants to Self-Help groups, who are mainly women to start up or boost their business enterprises....”the more resources

are accessible to women, the more that will reach the household level to address the basic needs of the entire family” (Elishiba 2006).

### **Youth Empowerment**

The link between youth and development remain relevant today and for the future. The youth aged 15-35 years constitute 36 percent of the total population of Kenya. About 18.3 percent are female and 17.7 percent are male. This proportion of youth is expected to grow and form the bulk of the population in the next 10-20 years, a phenomenon referred to as a youth bulge. Currently, the youth account for about 60 percent of the total active labour force.

The Government of Kenya identifies the youth as a national priority. Kenya's Economic blue print Vision 2030 and its first Medium Term Plan for the period 2008-2012 clearly articulates that for the country to attain its vision of becoming a middle income and prosperous by 2030, it is paramount to put youth concerns in the forefront. Youth Development Index (YDI) which is notable the first time a YDI has been computed for the country stands at 0.5817. It is observed that only a narrow margin exists between the National Youth Development Index at 0.5817 and the National Human Development Index at 0.5610. This correlation can be attributed to the large proportion of youth (36%) in the total population. In this regard, the goal of Vision 2030 to realize a Human Development Index growth cannot be realized without the Kenya Youth Development Index growing at the same pace.

The concerns for youth have for a time now captured international and national attention. This is attested by landmark recognition of issues pertinent to youth in the 1995 World Summit on Youth and a continuing follow-up focus within the changing economic and social environment. Kenyan youth continue to face many challenges which include limited opportunities for educational advancement and technical training, limited opportunities for on job training and employment, high levels of poverty, lack of finance and access to credit, disproportionate exposure to high health and social risks as well as limited opportunities and mechanisms to participate in decisions that affect their lives.

### **Youth and Governance**

Youth feel excluded from decision making on matters of national development and only consulted at the implementation stage. The youth admit when consulted that they are excluded from ownership of projects and programs meant for their benefit (UNICEF report: Youth situation review and investment in Kenya, 2010). African governments must create opportunities, support and strengthen platforms for youth participation in decision-making

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at local, national, regional, and continental levels of governance. This was reiterated at the Pan African Youth Forum in Nairobi, Kenya 2010 where more than 100 African youth leaders from 24 African countries converged to share their concerns. There is need for the governments to show their commitment to the African Youth Charter by developing and implementing comprehensive and coherent national youth policies that guarantee true and real youth participation in democratic governance and other decision-making bodies and Kenya is no exclusion.

Open Society Institute's youth initiative seeks to empower youth to become active citizens who are willing and able to influence public life and promote open society ideals. Among its programs is the Network Debate Program that encourages youth to engage in critical, reasoned discussion about issues important to their lives and communities, and to call for positive change around the world.

### **Youth and Education**

UNICEF (2010) reports show that 155,000 youths are enrolled in formal technical, entrepreneurial, and vocational training institutions, yet many do not obtain the competencies needed to be successful in micro-enterprise, nor do they easily find employment in the formal sector. There are many more youth who are involved in non-formal education experiences, often linked to the development of micro-enterprise. Yet there is little inter-organizational sharing and no quality control of Non-Formal Education. Out of school youth want and need ways of achieving competencies that are practical and recognized as legitimate. This is a matter of high priority for Kenya's development, and for the growth of opportunity for youth.

The Education Development Centre report 'Cross-Sectoral Assessment for at Risk Youth in Kenya 2009' sought to inform USAID youth programming strategy so as to support the expansion of local youth organizations in those areas most critically affected by post-election violence (PEV) in the Nyanza, Western, Rift Valley, and Central provinces and the poorest areas of Nairobi. The Ministry of Higher Education, Science, and Technology response has proposed to Parliament the development of a National Qualifications Framework (NQF) to address this critical need.

### **Youth and Employability**

Employment or access to income-earning opportunity is recognized as the single most

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important facet of participation in the economy and the basis for raising standards of living. The youth unemployment estimated at 75 percent in Kenya is a concern, since it is a precursor to increasing poverty. The cause of the growing unemployment is partly attributed to lack of appropriate skills required in the labour industry. As indicated in the report by Education Development Centre, Inc. (EDC) in November 2009 to USAID, almost 2 million youth (15–30 years) are out of school and most of them do not have regular work or income, making them vulnerable to recruitment into political campaigns and criminal gangs. An influx of youth is recorded daily in the urban areas as the rural youth move to the urban areas to seek for the employment or 'greener pastures'. There is a large and increasing urban population which accounts for 32 percent of the population of those aged (15-30) with a rapid rate of urbanization which is unable to provide employment opportunities to the 75% out-of school youth who do not have regular, full-time employment.

Although there are thousands of registered youth organizations, they do not necessarily reach the most vulnerable, their impact is highly variable, and many are short-lived and dependent on a single source of financing or support.

Kenya's informal enterprise sector, *jua kali*, has grown to engage some 70 percent of the labour force, albeit often in part-time, underpaid, and short term status. Given the very low growth of employment in the formal sector, the growth of microenterprise provides the best opportunity for youth livelihood. The growth and spread of micro-financing in Kenya is remarkable, providing a strong base for financing start-up, small scale youth organized enterprise. Youth who become engaged in viable micro-enterprise move through what is termed as “Three Stage Youth Enterprise Development Process”, starting with assessments and often voluntary service projects, then moving onto informal money earning activities, and ending with micro-finance and viable enterprise. It is a process that typically takes up to three years. There are hundreds, if not thousands, of youth-led informal enterprises and organizations that are successful (and even more that are not sustained).

Emphasis needs to be given to non-conventional employment opportunities such as ICT, music, performing arts and sports. Technology is growing at a very first rate. Access to technologies is spreading rapidly and it has proven to be an effective tool for development with its ability to foster the sharing of information and opportunities especially for the youth to express their ideas and opinions. ICT sector is the fastest growing business segment in Kenya with youth forming the majority of employment. The youth need to be nurtured and

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equipped with literacy, and numeric skills and knowledge in order to steer growth and break the intergenerational spiral of poverty, morbidity, illiteracy and inequality which is vital for development. Youth need to be supported to play an important role through ICT and automation of government programs as ICT provides a medium upon which the youth contribute to the shared values of transparency, accountability, performance, effectiveness and efficiency.

Achievement of the MDG can only be attained if institutions and processes stop tradition of leaving the youth out in key development issues. Their potential and efforts has been under rated and underutilized. There arises the need to redress the issue of unemployment for the youth and attain development through realigning of the policies and programs. Few programs like Economic Stimulus Program funded by the government focuses on sectors that will generate maximum benefits as well as protecting the livelihoods of the poor and creating employment for the youth; and The Kazi Kwa Vijana (KKV) government program initiated to create jobs in all constituencies and is intended to help youth and improve food security, have to be put in place to push development and reduce poverty levels.

### **Youth and Health**

It is also of great concern that a third of all HIV/AIDS patients are young and over 75 per cent of new infections are amongst the youth, majority of who are young women.

Youth feel that their health problems have been too narrowly defined as sexually transmitted disease and HIV/AIDS, yet it is a broad perspective which includes personal health; community and environmental conditions; and psycho-social well-being, including values of integrity, caring, unity in diversity, spiritual purpose, and lives of service, as well as recreation and sports.

This creates a need for the Youth activities and organizations to engage in activities that promote these said values. There is a high level of sexual abuse of girls and young women, with more than 20 per cent becoming mothers before the age of 16 years, and a much higher percentage who suffer through abortions. Most health services are seen as not 'youth friendly' and the youth concern is to be able to gain access to information and treatment in from a 'one stop friendly' that is confidential and trustworthy. Many non-governmental organizations (NGOs) and community-based organizations (CBOs) have begun working on these issues, particularly those funded to combat HIV/AIDS that have evolved into multi-functional, youth-serving organizations, addressing livelihoods, public advocacy, and capacity building.

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UNDP National Human Development Report Kenya supports the fact that a large youth cohort that is typical of the Kenyan population demographic pattern presents an opportunity, especially if the right macroeconomic and labour market policies are set in a manner that can help the economy benefit from the youth bulge. The youth have often demonstrated the ability to contribute to the development process and have the potential that can be nurtured to promote economic progress. To harness their energy, policy initiatives and resources should be targeted and channelled towards tackling development challenges.

Under the Vision 2030, specific policies and interventions are spelt out for implementation to fully develop the youth potential as well as prepare and engage them in socio-economic development with the key strategic areas of intervention highlighted as: capacity building and empowerment to enable youth engage in productive activities, creation of employment opportunities, provision of financial and market linkage support, character moulding initiatives and participation in decision making.

The government has planned out a course of action to address the challenges facing the youth among others involving raising the average annual incomes per person from an estimated USD 650 in 2006 to above USD 992 by 2012; Reducing poverty levels from 45.9 per cent to 28 per cent by 2012; Reducing rural and urban inequality from the current levels of 0.38 and 0.447 to 0.34 and 0.407 respectively over the same period.

The biggest challenge is that youth programs are often categorized under broad topics such as reproductive health, slum upgrading, violence prevention, women's livelihoods which are assumed to have youth as core participants and beneficiaries thus there is a need for the government and the respective ministries to change the way in which it organizes and implements the programs and policies regarding the youth. Some of the already put in place policies or programs include the Kenya National youth policy established in 1990's but was passed in 2007 to promote youth participation in democratic processes include:

- > National Youth Council bill to act as an advisory Research and policy institution on youth affairs in Kenya
- > Youth Employment Marshal Plan to create 500,000 jobs annually
- > Adolescent Reproductive Health Development Policy (ARH&D) to bring adolescent health issues into the mainstream of health and development
- > National Guidelines for Provision of Adolescent Youth-Friendly Services (YFS) to offer guidelines on reproductive health facilities for the youth; and
- > Kenya's Vision 2030



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As stated in the UNICEF report (2010), on youth situation review and investment in Kenya, the agency advocate for the putting up of youth friendly services, yet the Ministry of Health initiated the Adolescent Reproductive Health and Development Policy (ARH&D) in 2003 and gave National Guidelines for Provision of Youth-Friendly Services (YFS) in 2005. This is indicative of the lack of coordination between government agencies implementing youth related policies and programs. The Ministry of Youth Affairs and Sports (MOYAS) strategic plan is very comprehensive on what the youth issues are and what the implementation strategy will be. However, whilst acknowledging that high population growth rate among the youth exerts pressure on available resources, it does not include the issue of demographics as a policy priority. The document does not clearly articulate how it will collaborate with others successfully to implement programs and projects that are youth related but housed in other ministries.

### **Conclusion**

Society's real wealth is its people. Greater access to knowledge and skills, better nutrition and health, enhanced access to basic social services, more secure livelihoods, among others is imperative for any society to develop. From the literature, it is evident that several issues need to be addressed in subsequent discourses. The youth and women are not homogenous in the eight provinces that we have hence the interventions and strategies needed to address the priority issues in each province will be different due to the diverse needs presented.

Most reports/research gives sound policy proposals that government should pursue. It is important to note that government has already taken most of these proposals into consideration and implemented a considerable number of them. However there is need for targeted investment by government to effectively realize the desired outcomes. There is evidence of lack of coordination between government agencies implementing policies and programs and this must be addressed if the different initiatives are to succeed and have the right impact

Most young people are also unaware of youth and gender related government policies and programs. They need to be educated on the existing programs, policies and legislative frameworks in order for them to adequately access services and participate adequately. Therefore issues affecting the young and women should be fully integrated and harmonized into every aspect of public policy and across all Ministries and government agencies.



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### **Recommendations**

Key dimensions of critical youth and gender empowerment that can be adapted to inform better policies and face out the challenges include:

- > A welcoming, safe environment; where these groups of people get opportunities to experience both success and failure hence feel valued, respected, encouraged and supported. It gives a sense of ownership yet presents challenges at the same time ensuring that participants move out of the comfort zone
- > Meaningful participation and engagement; especially for the youth to engage in new roles and develop skills and insights while engaging in critical reflection and actions
- > Equitable power-sharing between youth and adults, men and women; Many leadership roles come with little decision making power in organizations. In society where the adults and males hold legitimate power and are ultimately responsible for the decision making, creating equitable power sharing within the context of empowerment is a challenge.
- > Engagement in critical reflection on interpersonal and socio-political processes; includes the need to increase understanding of the community, institution and bureaucratic structures that they seek to alter. If people are not aware of the visible and the invisible structures and processes that make up the institutions or their roles in this institutions, then there is little room for empowerment
- > Participation in socio-political processes to influence change; none is empowered if they do not have the capacity to address the structures, processes, social values and practices of the issues at hand
- > Integrated individual- and community-level empowerment; creation of development at both the individual level (skills development) and the community level (access to resources and governance).

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# 11. An Empirical Analysis of the Influence of Country Quality of Institutions on Gender Empowerment in Sub-Saharan Africa

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## Abstract

*Improving gender empowerment can promote effective linkages between research and socially equitable policy and practice in Sub-Saharan Africa, particularly by increasing women political representation at the national legislatures. However, putting such linkages into practice may be affected by the quality of institutions in these countries. The major objective of this study is to model gender empowerment in Sub-Saharan Africa, specifically, it looked at the relationship between women political representation at national legislatures and quality of institutions. Country level data on Millennium Development Goals 3 (MDG3-gender disparity in education and female representation in national legislatures), and quality of institutions data obtained from other sources for the period 2000-2009 were used. We estimated random effects models of gender empowerment, using a country's women representation in national legislature as the outcome variable, and analyse as a function of the quality of institutions, sub-regional location, and post-2005 MDG declaration.*

*Descriptive results indicate a 6% increase in gender empowerment on average annual, and a 4.5% increase in the post-2005 MDG period. Allowing for sub-regional differences, gender empowerment increases by 5.3% in West Africa, Southern Africa (5.0%), East Africa (11.6%), and Central Africa (4.8%). But with regard to post-2005 MDG declaration, East Africa has the highest increase (8.1%) whilst Central Africa records a decline of -1.6%. The results also show differential effects between formal and informal institutions on gender empowerment. The degree of response of gender empowerment to changes in the former (e.g. education attainment) is highly elastic and much greater than the degree of response to changes in the latter (e.g. legal structure and property rights), which is largely inelastic. The study provides a context-specific understanding of*

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*underlying factors mitigating or intensifying, the commitments of African governments to improve gender empowerment.*

**Keywords:** *Random effects model; Sub-Saharan Africa; Institutions; Gender empowerment; Millennium Development Goals.*

### **Introduction**

It is generally accepted that promoting gender empowerment, especially empowerment of women is essential to achieving the developmental goals of countries in Africa, including human development, poverty eradication and economic growth. The Millennium Development Goals (MDGs) recognise the importance of gender empowerment as an effective way to combat poverty and to stimulate sustainable development (United Nations, 2000).

African governments have undertaken a number of declarations and policy initiatives to address gender issues in development. At the global level, the 2005 World summit in New York provided a platform for African heads of state, amongst others, to pledge their commitment to adopt national policies and strategies for achieving the Millennium Development Goals by 2006 (United Nations, 2005).

At the regional level, African governments have agreed to actively promote gender parity principles, and implement legislations that guarantee women's property rights, amongst other commitments (e.g. African Union, AU, 2004)<sup>4</sup>. Also, the various charters and mission statements of the AU recognise gender empowerment as essential element to achieving sustainable development (e.g. United Nations Economic Commission for Africa, UNECA, 2008). In addition, African governments have established various institutional mechanisms to mainstream gender in the formulation of policies and to undertake advocacy (African Development Forum, ADF, 2008). In assessing the progress made against the background of these global and regional initiatives however, existing literature emphasises the importance of key inter-related institutional areas, including economic, social, political and cultural (e.g. World Bank, 2001). The conclusion is that the normative gains are yet to be fully realised, suggesting that considerable gaps remain between socially equitable policy and practice (ADF, 2008).

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<sup>4</sup>*This was a major outcome of the Solemn Declaration on Gender Equality in Africa in Addis Ababa in 2004.*

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In their descriptive analysis of the major obstacles facing gender equality and empowerment in Africa, the African Development Forum identified important areas bordering on institutional factors, including presence of strong cultural and traditional practices constraining progress in the identified areas (op.cit)<sup>5</sup>, suggesting potential relationship between gender empowerment and institutions.

There is a consensus that institutions matter for development (e.g. Trebilock and Prado, 2011), just as in gender empowerment. Institutions are the set of formal and informal rules and norms that shape behaviour in a society. A large body of literature indicates that institutions play the most crucial role in the process of empowering people and in the economic and social development of a country (e.g. Roy et al., 2008). Empowering people provides incentives for them to use their capabilities to improve their social and economic circumstances, thereby enhancing the level of socioeconomic development of the country. For example, prosperous countries are those where property rights are clearly defined and protected, the rule of law is established and enforced, and citizens irrespective of gender, have political and civil liberties (e.g. Coyne and Sober, 2010, Acemoglu and Johnson, 2005).

This paper contributes to the growing body of literature on gender empowerment and institutions relationship by examining empirically, the influence of country quality of institutions on gender empowerment in Sub-Saharan Africa. We model gender empowerment, specifically looking at the influence of quality of institutions on women representation at the national legislatures in 45 Sub-Saharan African countries. We feature the roles of levels of education (primary, secondary, and tertiary), the influence of the post-2005 MDG declaration as well as sub-regional differences in gender empowerment. Using random effects econometric techniques, we analyse measures of quality of institutions commonly used in the literature.

These measures capture the various aspects of institutional development including social, economic, and political institutions. We use country level data on gender-related areas of MDGs (MDG3: gender disparity in education and female representation in national legislatures), complemented with indicators of institutions data obtained from other sources covering the period 2000-2009 (10 years). We also employ model specification that allow for correlated individual country effects.

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<sup>5</sup>For a comprehensive review of the identified major obstacle to the promotion of gender empowerment in Africa, see ADF (2008).

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An empirical analysis of the potential influence of country quality of institutions on gender empowerment is important for some reasons. First, such an analysis enhances a context-specific understanding of the underlying factors that may help explain gaps between policy-making and practice.

The paper is organised as follows. The next section (Section 2) describes the methods used. The descriptive and regression results are presented in Section 3. Section 4 presents the conclusions.

### Methods

#### Data

Data for the analysis were obtained from several sources online. The MDGs address key development challenges relevant to African countries generally, with two explicitly gender-related areas (MDG3: gender disparity in education and female representation in national legislatures, and MDG5: maternal mortality). Data on gender empowerment were obtained from a databank of the official United Nations site for the MDGs<sup>6</sup>. We obtained data on the gender parity index for various levels of education (e.g. primary, secondary and tertiary education). The gender parity index measures the ratio of literate women to men; the bigger the ratio, the higher the proportion of literate women. It also provides information about the proportion (and number) of women compared to men and any ratio greater than 1 is an indication of a great proportion of literate women compared to men.

Another source of data for this analysis is the World Bank Development Statistics<sup>7</sup>, which provides data on several development indicators grouped in terms of health, labour and social protection, economic policy and external debt, education, infrastructure, etc. It is here that we obtain data on measures such as per capita growth in Gross Domestic Product (GDP).

Finally, we sourced data on the measures of quality of institutions from the Economic Freedom of the World (EFW) data sets, collected by the Frazer Institute<sup>8</sup>, and the index of Economic Freedom collected by The Heritage Foundation<sup>9,10</sup>. The EFW index is a summary

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<sup>6</sup> <http://unstats.un.org/unsd/mdg/Data.aspx>.

<sup>7</sup> <http://data.worldbank.org/indicator/SP.DYN.LE00.IN/countries>

<sup>8</sup> <http://www.freetheworld.com/index.html>

<sup>9</sup> <http://www.heritage.org/Index/>

<sup>10</sup> *Both data sets are freely available to the public.*

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measure of five different areas of a country's quality of institutions, covering 191 countries (Gwartney et al., 2010). From the EFW data set, we used the data on legal structure and security of property rights (Area 2). This is measured on a scale ranging between 0 (least free) to 10 (most free), indicating the degree to which the policies and institutions of a country are supportive of economic freedom in such areas as judicial independence, impartial courts, protection of property rights, adherence to the rule of law, integrity of the legal system, legal enforcement of contracts and regulatory restrictions on the ownership and sale of property<sup>11,12</sup>.

From the Heritage Foundation data set, we used the data on business freedom and regulation (Component 1), and freedom from corruption (Component 9). Each of these was measured on a scale ranging from 0 to 100, where 100 represents the maximum freedom. Business freedom measures the overall burden of regulation of business as well as the efficiency of government in the regulatory process. A score of 100 indicates the most friendly business environment. Freedom of corruption is derived originally from Transparency International's Corruption Perceptions Index, which measures the level of corruption in 180 countries<sup>13,14</sup>.

From all the data sources, we also created regional indicators based on the World Health Organisation (WHO) Africa region for Sub-Saharan Africa (SSA) such as West Africa (includes countries such as Cote D'Ivoire, Nigeria), Southern Africa (includes countries such as South Africa and Zimbabwe), East Africa (includes countries such as Kenya and Uganda), and Central Africa (includes countries such as Cameroon and Central African Republic). Although all data sources covered longer periods we restricted attention to indicators for which we have a complete data for the period 2000 to 2009 for the purposes of obtaining more useful data.

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<sup>11</sup>For technical details of the components and derivation of the EFW index, see Gwartney et al (2010).

<sup>12</sup>Over 250 academic papers have used the EFW data set since 1994.

The list is available at <http://www.freetheworld.com/papers.html>.

<sup>13</sup>[http://www.transparency.org/policy\\_research/surveys\\_indices/cpi/2010/in\\_detail](http://www.transparency.org/policy_research/surveys_indices/cpi/2010/in_detail).

<sup>14</sup>For details of the components and derivation of index of Economic Freedom, see Heritage Foundation (2011).

### Model Specification

We used a linear random effects model in which there are repeated measurements in periods ( $t$ ) for each individual country ( $i$ ). The model estimated has the general form of an individual-effects model<sup>15</sup>:

$$y_{it} = X_{it}\beta + \alpha_i + e_{it} \quad i=1, \dots, n; t = 1, \dots, T \quad (1)$$

Where  $y_{it}$  is the observed individual country measure of gender empowerment (dependent variable) in each of the  $t$  years, and  $X$  is a vector of observed independent variables; and  $\alpha_i$  is a vector of parameters to be estimated. The error term in equation (1) consists of two elements:  $\alpha_i$  and  $e_{it}$ ; where the term  $\alpha_i$  is a random country-specific unobserved effect or unobserved characteristics of country  $i$  that remains constant overtime with  $\alpha_i \sim (\alpha, \alpha_a^2)$ , and the term  $e_{it}$  is an idiosyncratic error with  $e_{it} \sim (0, \alpha_e^2)$ .

Given the variance of  $\alpha_i$  and  $e_{it}$ , the total variance ( $\alpha_u^2$ ) is given by:

$$\alpha_u^2 = \alpha_a^2 + \alpha_e^2 \quad (2);$$

and given a covariance  $Cov(u_{is}, u_{it}) = \sigma_a^2$  for all  $s = t$ , the intra-country correlation of the error terms ( $\rho$ ) is given by:

$$\rho = \alpha_a^2 / (\alpha_a^2 + \alpha_e^2) \quad (3).$$

The intra-country correlation coefficient is the proportion of the total variation of the error term attributed to the individual effects.

In panel data models, an important issue to address is whether individual country effects  $\alpha_i$  are correlated with the observed independent variables  $X$ . If this is the case, the regression yields an inconsistent estimate of  $\beta$  (e.g. Cameron and Trivedi, 2009). The general approach to address this problem is to eliminate the fixed effects  $\alpha_i$ . Therefore, we employ the Mundlak (1978) fixed-effects approach in dealing with correlated error terms by taking the mean deviations of each of the time-varying covariates as the deviation from within-country means<sup>16</sup>.

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<sup>15</sup>For a formal presentation of panel data models and estimation, see Baltagi (2005).

<sup>16</sup>Another approach is the first differencing approach, by substituting the value of the time varying variables in  $t-1$  from the value in period  $t$  (e.g. Jones 2005).



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In our analysis, the independent variables ( $X_{it}$ ) consist of both time-varying indicators of quality of institutions including gender disparities in education (primary, secondary and tertiary), annual GDP growth rate, legal structure and property rights, index of business freedom, and index of freedom from corruption; and a fixed time-invariant factor (sub-region of location). In order to capture the possible effect of the post-2005 MDG declaration, we use the year dummies to create a binary variable (post2005MDG) taking the value of 1 in the post-2005 MDG period (i.e. 2006 to 2009) and the value 0, if otherwise<sup>17</sup>. We expect the level of gender empowerment to increase with improvement in indicators of quality of institutions, and in the post-2005 MDG period.

### Results

#### Descriptive results

Table 1 shows the descriptive statistics of the variables. More than half of the data used in this analysis cover countries in West Africa (38 percent) and Southern Africa (31 percent). Descriptive statistics of other variables show mean differences in gender parity index for primary education (9 percent), secondary education (8 percent) and tertiary education (6 percent). This suggests that over the period, women were less empowered relative to men, at higher levels of education. There was also great variation in gender parity index at higher levels of education. GDP per capita grew at an average annual rate of 2 percent, even as there was a 5 percent variation between all the countries analysed. The average score for legal structure and property rights was about half (5 out of 10), and business freedom was a little above half (56 out of 100), and freedom from corruption was well below 30% (28 out of 100). The variations in these institutional variables analysed were generally low at approximately 14%, 12% and 13%, respectively.

The dependent variable is the share (%) of parliamentary seats held by women. On average, women in SSA held about 14 percent of the total seats in parliament in their respective countries over the period from year 2000 to 2009. This proportion ranged from 1 percent to 56 percent, and also varied over time and between countries and regions. Figure 1 presents the distribution of the proportions of parliamentary seats held by women over the study period, broken down into four SSA sub-regions.

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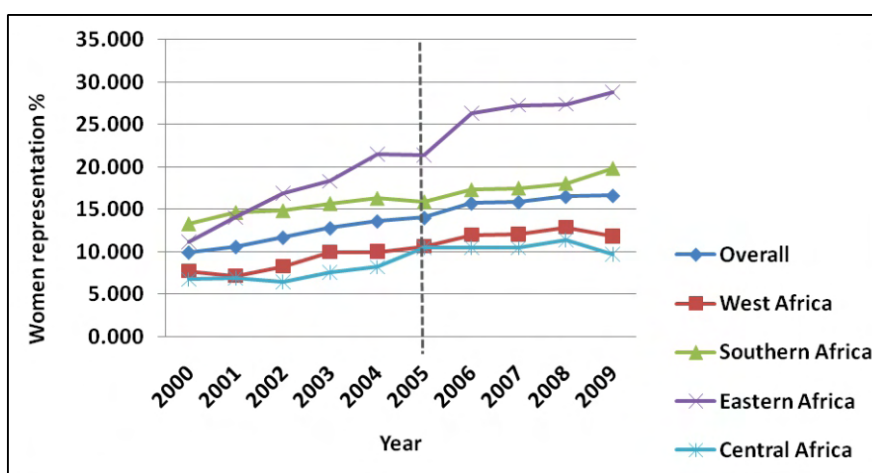
<sup>17</sup> *The post-2005 MDG declaration relates to the 2005 World Summit, held from 14 to 16 September at United Nations Headquarters in New York, when more than 170 Heads of State and Government pledged intention to address issues surrounding development, security, human rights in their respective countries (UN 2005).*

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**Table 1: Summary statistics of variables (2000-2009)**

Variable	mean	sd	min	max
% of parliamentary seats held by women	13.863	9.076	1.20	56.30
Log of % of parliamentary seats held by women	2.419	0.681	0.18	4.03
gender parity index-primary	0.899	0.107	0.61	1.08
Log of gender parity index-primary	-0.114	0.126	-0.49	0.08
gender parity index-secondary	0.810	0.221	0.28	1.38
Log of gender parity index-secondary	-0.252	0.298	-1.27	0.32
gender parity index-secondary	0.599	0.338	0.06	1.66
Log of gender parity index-secondary	-0.683	0.614	-2.81	0.51
GDP per capita growth (annual %)	1.705	4.536	-17.79	29.06
Log of GDP per capita growth (annual %)	0.876	0.989	-3.50	3.37
Legal structure& property rights (out of 10)	4.627	1.355	1.02	8.15
Log of legal structure& property rights	1.485	0.318	0.02	2.10
Business freedom incl. regulation (out of 100)	55.679	11.745	18.30	85.00
Log of business freedom incl. regulations	3.996	0.226	2.91	4.44
Freedom from corruption (out of 100)	27.586	12.903	10.00	70.00
Log of freedom from corruption	3.195	0.519	2.3	4.2
Region1 – West Africa	0.378	0.485	0	1
Region2 – Southern Africa	0.311	0.463	0	1
Region3 – Eastern Africa	0.156	0.363	0	1
Region4 – Central Africa	0.156	0.363	0	1
Post-2005 MDG	0.4	0.490	0	1



**Figure 1: Distribution of gender empowerment overtime**

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There were general upward trends in women empowerment in all sub-regions, although the rates of empowerment differed by sub-region. For example, East Africa had overall greater levels as well as changes in the levels of empowerment compared to the average SSA regional levels and to the levels in other sub-regions. That was followed by Southern Africa, which also recorded above regional average levels of women empowerment. Central Africa has the lowest levels of women empowerment over time. The dashed vertical line in Figure 8 indicates the 2005 MDG declaration. The year 2006 corresponds to the year that African heads of state pledged their commitment to put in place policies and strategies for achieving MGDs. Two interesting points are worth noting. Firstly, the overall rate of increase in the share (%) of women in national legislatures in SSA increased during 2005/06 was significantly higher than the increase during 2004/05. But this increase appeared to level off afterwards. In terms of annual changes (Table 2), this result corresponds to an increase from 3% during 2004/05 to 12.3% during 2005/06, representing more than 4 times as great, but has declined generally afterwards.

**Table 2: Changes in share of women in national legislatures (2000-2009)**

Year	Overall	West Africa	Southern Africa	East Africa	Central Africa
2000	-	-	-	-	
2001	6.657	-7.072	10.099	25.976	2.217
2002	10.412	15.219	1.368	20.756	-6.602
2003	9.505	21.100	5.708	8.206	17.389
2004	6.375	0.251	3.780	17.358	8.571
2005	2.998	6.721	-2.399	-0.533	27.733
2006	12.260	12.466	8.821	23.309	-0.023
2007	0.918	0.595	1.117	3.585	-0.408
2008	4.108	6.830	3.190	0.425	9.141
2009	0.645	-8.128	9.711	5.269	-15.000
<b>Average Annual</b>	<b>5.986</b>	<b>5.331</b>	<b>4.599</b>	<b>11.594</b>	<b>4.780</b>
<b>Av. Post MDG</b>	<b>4.483</b>	<b>2.941</b>	<b>5.710</b>	<b>8.147</b>	<b>-1.572</b>

Secondly, at the sub-regional level similar trends were observed for all of the sub-regions, except Central Africa, which recorded a significant decline (-0.023%) during 2005/06. More generally, countries in East Africa appear to respond to the post-2005 MDG declaration more significantly than countries in any other sub-regions in SSA. The change in the share (%) of

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parliamentary seats held by women post-2005 MDG declaration is highest for East Africa (8.1%), whilst it declined by about -2% annually in Central Africa. In addition, the gap between East Africa and the other sub-regions in terms of gender empowerment, continued to widen more significantly since the post-2005 MDG declaration (Figure 1).

### Measurement of Gender Empowerment

Tables 3 and 4 show the regression results for the random effects estimation and random effects estimation with Mundlak (1978) specification, respectively. The Mundlak specification provides a way of relaxing the assumption of uncorrelated individual effects. The dependent variable is gender-empowerment as measured by the share (%) of parliamentary seats held by women. We use the Stata software (version 11) for estimations. Separate models were estimated for the three stages of education attainment; that is, primary, secondary and tertiary. In estimation, we used a stepwise approach, which allowed us to use an education variable at a time and observe how the results change as more indicators of quality of institutions were included. We estimated a model with only education (Basic models), sub-region of location and post-MDG declaration, and a model with additional institutional variables ('with added institutions') included.

In order to aid interpretation, the coefficients on the time-varying variables are the elasticities measuring the percentage change in gender-empowerment attributed to 1% percentage change in a particular covariate, whilst controlling for other covariates.

Firstly, we examine the elasticities measuring the relative changes in gender-empowerment attributed to relative changes in gender parity index by levels of education (primary, secondary and tertiary). When gender parity index in primary education is used and controlling for other covariates, the result indicates that 1% increase in gender parity index in primary education increases the share of women representation by 2.24% on average, which is elastic and highly statistically significant. This inelastic result remains consistent when other indicators of quality of institutions are controlled for.

When gender parity index in secondary education is used and controlling for other covariates, the coefficient of elasticity is positive but statistically not different from zero. With the inclusion of other indicators of quality of institution however, the result indicates that 1% increase in gender parity index in primary education increases the share of women representation by only 0.92% on average (inelastic), which narrowly missed the unit elasticity threshold of 1), but statistically significant at the 5% level. The relative change in gender

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empowerment attributed to gender parity index in tertiary education is negative and statistically not different from zero. The results suggest that the level of education has differential impacts on gender-empowerment, with primary education showing the strongest impact.

Next, we examine the effect of sub-region of location pre- and post-2005 MDG declaration. Again, the results differ according to the education variable used in the model. In the pre-MDG period (2000-2005), the share of women in national legislature increases significantly in Eastern Africa than in West Africa (reference sub-region). There is no statistical difference between the reference sub-region, Southern Africa and Central Africa. In the post-MDG period (2006-2009) however, the share of women in national legislature increases significantly in all of the sub-regions but Central Africa, where the increase is statistically not different from zero. Comparing between the pre- and post-2005 MDG periods, gender empowerment improved in most of the sub-regions, except for Central Africa.

Controlling for gender parity in higher levels of education (i.e. secondary and tertiary), both Southern and Eastern Africa sub-regions have statistically significant increase in gender empowerment in the pre-2005 MDG declaration compared to West Africa. Also, the estimate and level of statistical significance appear to increase with the level of education. For example, the decline in gender-empowerment in Central Africa pre-2005 MDG became statistically significant in the models controlling for gender parity in secondary and tertiary education.

We also examine the elasticities measuring the relative changes in gender-empowerment attributed to relative changes in the other indicators of quality of institutions. The results indicate that 1% increase in freedom of corruption decreases the share of women representation by -0.05% , -0.018%, and -0.071% on average, respectively. These coefficients of elasticity are within the inelastic range but are statistically significant. None of the remaining indicators of quality of institutions are statistically significant. In the model controlling for gender parity in tertiary education however, the coefficient of elasticity is positive and statistically significant. This suggests that 1% increase in legal structure and property rights index increases the share of women representation by 0.165% (inelastic). Some differences are observed in the models with Mundlak (1978) specification. Firstly, the results on levels of education are not sensitive to model specification. However, eliminating the unobserved individual-effects (i) in the Mundlak specification improves our understanding of the results to some extent. The degree of response of gender-empowerment to changes in gender parity in primary education increases to approximately

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3.0%, whilst the inclusion of other indicators of quality of institution makes little difference to the previous results.

Largely because of the structure of our data with little within variations over time, the coefficients on the mean deviation variables are of interest. The coefficient on the mean deviations indicate that while indicators of quality of institutions such as the economy imposes a positive and statistically significant individual effects on gender-empowerment, legal structure and property rights, freedom from corruption impose negative and statistically significant individual effects on gender empowerment. Notice also that except for East Africa, the effect of sub-region of location disappears once the other indicators of quality of institutions are included in the models.

The coefficient on the Wald (Chi<sup>2</sup>) tests provides a test of the joint significance of the effects of individual variables on gender empowerment. Each of the coefficient has a p-value=0.000, suggesting that the individual effects are jointly significantly significant. Also, the goodness of fit of each of the models is assessed using the R<sup>2</sup> measures for overall (random effects) estimator across the models (Table 5). On the basis of the R<sup>2</sup> values, the random effects model with Mundlak (1978) specification is preferred generally (Table 5).

Finally, these results have important implications for our understanding of the role of institutions in the process of improving gender empowerment. Firstly, the findings are generally consistent with Coyne and Sobel (2010), who used time-series analysis to examine the relationship between indicators of quality of institutions in 190 countries covering 35 years. Their findings suggest that whilst the changes in the formal aspect of a country's institution such as economic and political institutions are non-stationary (changes are permanent), the changes in informal aspects of institutions such as measures of civil liberties, legal structure and property rights may take a long time to manifest. Their study also indicate that most of a country's institutions are co-integrated, suggesting that reforms are jointly undertaken across various indicators of institutions for a sustainable institutional change. We also find differential effects between formal and informal institutional variables on gender empowerment. The degree of response of gender empowerment to changes in primary education is (elastic) much greater than the response to changes on the informal institutions such as legal structure and property rights, which is largely inelastic.

### Conclusions

The motivation for this paper is based on the view that the various declarations and policy initiatives undertaken by African governments to address gender-related issues in

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development have not translated into the expected normative gains, thereby leaving gaps between socially equitable policy-making and practice. We contribute to this literature by examining empirically, the influence of country quality of institutions on gender empowerment in 45 countries in Sub-Saharan Africa.

Our findings highlight the context-specific understanding of underlying factors mitigating or otherwise of meeting the commitments of African governments to improve gender empowerment. Firstly, we find indications of improvement in gender empowerment following the 2005 MDG pledge by African heads of state. However, this improvement has been sustained over time. Secondly, the response of governments in Sub-Saharan Africa to gender issues in development appears to differ according to the sub-region of location, with East Africa accounting for the strongest improvement in gender empowerment during the period under consideration, compared to other sub-regions. By implication, the gap between policy initiatives and practice is wider for these other sub-regions relative to East Africa.

Secondly, we find important differences between the influence of indicators of formal and informal institutions. Whilst the relative change in gender empowerment attributed to changes in primary and secondary education (formal institutions) is highly elastic (at least 2%), the relative changes attributable to changes in property rights and corruption (informal institutions) are inelastic. Rather, these informal institutional variables impose some unobserved country individual effects generally. These institutions are largely informal in Sub-Saharan Africa, as they may be reflecting some strong cultural and traditional ways of doing things, which are slow to change and constraining progress towards achieving gender empowerment. Also, the joint statistical significance of the institutional variables suggests that institutional reforms to nurture effective gender empowerment need to be jointly undertaken across various institutions. As a previous study has demonstrated, this is because a change in one institutional variable may require a simultaneous change in another. In future research, we hope to collect more data and extend the analysis to examine the capacity of governments in Sub-Sahara to effect joint institutional changes.

An implication of our findings is that they highlight the importance of understanding the context-specific underlying issues such as determinants of gender empowerment, for an effective linkage between evidenced-based research, policy and practice. Improved quality of institutions will enhance women's capacity to exercise their rights, greater access to resources and actively participate in policy research, initiate policy dialogue, advocacy, and operationalizing gender-related development policies.



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**Table 3: Random effects regression results**

Variable: <sup>1,2</sup>	Primary		Secondary		Tertiary	
	Basic	with added institutions	Basic	with added institutions	Basic	with added institutions
Log (gender parity-primary)	2.239*** (0.490)	2.074*** (0.679)				
Log (gender parity-secondary)			0.229 (0.289)	0.919** (0.413)		
Log (gender parity-tertiary)					-0.0976 (0.139)	-0.0699 (0.194)
Log(economic growth)		-0.00149 (0.0372)		-0.00664 (0.0454)		0.0371 (0.0585)
Log(legal & property rights)		-0.0955 (0.116)		-0.207 (0.140)		0.165* (0.092)
Log(business freedom)		0.196 (0.141)		0.118 (0.179)		0.0560 (0.232)
Log(freedom from corruption)		-0.0547* (0.0312)		-0.0184** (0.0076)		-0.0707* (0.0401)
Region2(Southern Africa) <sup>3</sup>	0.103 (0.216)	0.319 (0.337)	0.406* (0.244)	0.566 (0.373)	0.436* (0.246)	0.392 (0.426)
Region3 (East Africa)	0.516** (0.248)	0.503 (0.372)	0.681*** (0.264)	0.625* (0.361)	0.562** (0.248)	0.760* (0.413)
Region3 (Central Africa)	-0.0588 (0.251)	-0.210 (0.192)	-0.0615 (0.284)	-0.332* (0.183)	-0.0943 (0.073)	-0.299* (0.150)
Post_mdg#(West Africa)	0.242*** (0.0784)	0.0090 (0.0866)	0.361*** (0.0880)	0.0698 (0.0931)	0.550*** (0.114)	-0.0337 (0.156)
Post_mdg#(Southern Africa)	0.397* (0.220)	0.596* (0.345)	0.762*** (0.252)	0.882** (0.384)	0.836*** (0.267)	0.852* (0.449)
Post_mdg#(East Africa)	0.904*** (0.257)	0.799** (0.383)	1.182*** (0.267)	1.017*** (0.361)	1.276*** (0.273)	1.253*** (0.426)
Post_mdg#(Central Africa)	0.172 (0.255)	0.123 (0.420)	0.311 (0.290)	0.217 (0.417)	0.134 (0.272)	-0.155 (0.596)
Constant	2.410*** (0.165)	3.464*** (0.652)	2.064*** (0.186)	3.100*** (0.796)	1.900*** (0.193)	2.111* (1.133)
Wald (Chi2) test <sup>5</sup>	120.7	95.2	82.8	76.1	62.5	33.0
Obs.	355	142	284	113	192	75
No. of country	43	23	41	20	36	19

Notes: <sup>1</sup> The dependent variable = Log (% of women in national legislature); <sup>2</sup> Standard errors in parentheses  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1; <sup>3</sup> Reference sub-region= West Africa; <sup>4,5</sup> The p-value for each of the models =0.000.



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**Table 4: Random effects regression results with Mundlak (1978) specification**

Variable: <sup>1,2</sup>	Primary		Secondary		Tertiary	
	Basic	with added institutions	Basic	with added institutions	Basic	with added institutions
Log (gender parity-primary)	2.975*** (0.618)	1.904** (0.789)				
Mean(gender parity-primary)	-2.131* (1.111)	-1.424 (2.070)				
Log (gender parity-secondary)			0.211 (0.412)	0.987* (0.578)		
mean(gender parity-secondary)			0.045 (0.032)	-1.116 (1.464)		
Log (gender parity-tertiary)					-0.0955 (0.184)	-0.261 (0.204)
mean (gender parity-tertiary)					-0.0129 (0.469)	1.354 (1.374)
Log(economic growth)		-0.0138 (0.0370)		-0.0164 (0.0456)		0.0287 (0.0551)
Mean(economic growth)		0.162*** (0.0553)		0.157** (0.0647)		0.136** (0.0669)
Log(legal & property rights)		-0.0849 (0.116)		-0.168 (0.139)		0.159 (0.277)
Mean(legal & property rights)		-0.468** (0.203)		-0.473** (0.232)		-0.556* (0.329)
Log(business freedom)		0.230* (0.140)		0.160 (0.176)		0.201* (0.114)
Mean(business freedom)		-0.0133 (0.0031)		-0.0116 (0.0276)		-0.0115 (0.0491)
Log(freedom from corruption)		-0.0780* (0.0433)		-0.0536** (0.0247)		-0.145 (0.101)
Mean(corruption)		-0.0494** (0.0238)		-0.0508** (0.0223)		-0.0675** (0.0327)
Region2(Southern Africa) <sup>3</sup>	0.246 (0.230)	0.386 (0.414)	0.399 (0.265)	0.570 (0.468)	0.441 (0.275)	-0.0243 (0.684)
Region3 (East Africa)	0.612** (0.255)	0.566 (0.472)	0.680** (0.267)	0.660 (0.431)	0.562** (0.253)	0.599 (0.528)
Region3 (Central Africa)	-0.0691 (0.253)	-0.200 (0.352)	-0.0606 (0.287)	-0.0494 (0.369)	-0.0946 (0.277)	-0.164 (0.709)
Post_mdg#(West Africa)	0.189** (0.0827)	0.0132 (0.0911)	0.362*** (0.0909)	0.0552 (0.0942)	0.549*** (0.116)	-0.106 (0.147)
Post_mdg#(Southern Africa)	0.529** (0.231)	0.665 (0.417)	0.756*** (0.270)	0.886* (0.470)	0.842*** (0.293)	0.462 (0.690)
Post_mdg#(East Africa)	0.952***	0.866*	1.181***	1.049**	1.276***	1.135**

Notes: 1 The dependent variable = Log(% of women in national legislature); 2 Standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1; 3 Reference sub-region= West Africa; 4, 5 The p-value for each of the models =0.000.

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**Table 5. Comparing models, using overall R-squared values**

R-squared	Standard random effects		Random effects with Mundlak specification	
	Basic	With institutions	Basic	With institutions
Primary				
Overall <sup>1</sup>	0.278	0.409	0.303	0.616
Secondary				
Overall	0.289	0.409	0.612	0.186
Tertiary				
Overall	0.187	0.262	0.288	0.379

Note: <sup>1</sup>The  $R^2$  reported for 'overall' are based on the random effects estimator.

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**An Empirical Analysis of the Influence of Country Quality of Institutions on  
Gender Empowerment in Sub-Saharan Africa**

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# 12. Youth Mobilization under the Agricultural Development Programme: Lessons for Effective Linkages between Research, Extension and Farmers for Agricultural Transformation in South-Eastern Nigeria

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## Abstract

*Youth possess regenerative energies, intelligence and capabilities for sustainable development of any economy. Despite the huge resources expended on youth supported programmes under the Agricultural Development Programme (ADP) by successive governments in Nigeria towards realizing the foregoing potentials, youth's participation in the South-Eastern ADPs remain minimal. There do not seem to be effective linkage between research, policy and practice needed to motivate them actively to participate in agricultural production and transformation process in the nation. The study therefore examined the potentials of youth mobilization under the ADPs and highlighted lessons for participatory agricultural transformation in the country. Two hundred and forty (240) youths randomly selected using purposive and multistage random sampling techniques constituted the sample size for the study. Structured interview schedule was employed in data collection, while frequency counts, percentage and mean scores, and factor analysis techniques were used in data analysis. The key findings show that majority (61.25%) of the youth were males, and 75 percent were within the ages of 16 and 25 years. The most important youth mobilization strategies identified include, organizing competition between youth organizations ( $x = 4.5$ ) and excursion for the youth ( $x = 4.3$ ). Observed mobilization constraints include, lack of basic infrastructure, poor socio-economic conditions and inadequate rural leadership. Key lessons identified for effective linkages and agricultural transformation were; improved*

*extension services harmonized youth group efforts and improved budgetary allocation for institutional re-orientation and synergy in practice. The paper recommends that for effective linkage amongst the key stakeholders in agricultural development to occur, the identified strategies need to be boosted while the constraints need to be effectively addressed by relevant authorities.*

**Keywords:** *Youth Mobilization, ADP, Research, Extension and Farmers Linkages, Agricultural Transformation, South-eastern Nigeria*

## **Introduction**

Youth possess regenerative energies, intelligence and capabilities for sustainable development. Previous studies by Ajayi (1998), Onuekwusi (2005) and Onuekwusi and Nwachukwu (2006), have described the youth as group of people that are of human life between childhood and adulthood within the ages ranging from 12 to 30 years. According to Eremie (2002), the desirable potential energies, knowledge and intelligence of youth constitute inherent characteristics which endear them towards sustainable development programmes worldwide. The call for youth involvement in development programmes has been greatly supported under various development initiatives in Nigeria. Specific youth initiatives under successive governments in Nigeria include; the Farm Settlement Scheme (1960); the School-to-Land Programme (1985); the Young Farmers Club, YFC (1973); and the Agricultural Development Programme, ADP (1972-1980s). Others include, the National Youth Service Corps, NYSC (1973); and National Directorate of Employment, NDE (1986). The question now is, to what extent have these government supported youth programmes yielded the desired results in terms of stimulating youths for active participation and linkages for agricultural production and transformation in Nigeria?

According to Adedoyin (1996), despite the huge financial, human and material resource investments on youth programmes, the programmes have not achieved the desired objectives in terms of meaningful participation among the youth in agricultural production activities. There seems to be inadequate agricultural transformation and development process in Nigeria. This failure of government supported youth schemes in Nigeria is attributable to inadequate institutional linkages, inconsistency in planning and policy implementation, inadequate funding, and attitudinal deficiencies in terms of corruption among government officials (Nwachukwu, 2008). To address this situation requires that the youth be encouraged to participate in infrastructural development and agricultural transformation process. Anyanwu (1992) recommended youth participation in developments initiatives to make up for governments inadequacies in such respects. Thus without engaging the activities of youth

in agricultural production and transformation process there would be probably little success in the programmes since they are action points of any development programmes in rural areas.

In Southeast, Nigeria, the responsibility of encouraging youth participation in agricultural production and transformation is mainly the responsibility of the Agricultural Development Programmes (ADPs). According to Laogun (2001), youth involvement in ADP activities will serve both as sustainability measures to the longevity of ADPs and rekindle youth interest in agriculture. The World Bank (2001) reported on the global awareness among donor agencies and civil society organizations of the potential roles of youth in Agricultural production and rural transformation. Ajayi (1998) has noted the need to involve youths in ADP activities to avert imminent conditions of hunger basically because of abandonment of food production process in the hands of aged farmers in Nigeria.

Youth participation under the ADP activities involve basic issues on institutional linkages between research, extension and farmers, sensitization, encouragement, training, motivation and sustained mobilization. The desirable mobilization of youth will serve as a policy measure to provide a balance between self-fulfilment and service and it consists of a range of linkages and interactions involving adult and youth (Onuekwusi, 2005). Youth mobilization will stimulate participatory agricultural production and transformation process necessary in achieving viability in development initiatives in an agricultural based economy such as Nigeria (Akinbile, Ashimolowo and Oladoja, 2006).

Generally, the situation on ground in terms of youth participation in ADP Agricultural production and transformation activities in South-eastern Nigeria is that mobilization in this respect is very minimal. There do not seem to be appropriate institutional (research, extension and farmers) linkages needed to provide inputs and resources for youth mobilization in the ADPs. Effective mobilization could motivate them to actively participate in agricultural production and transformation policy being implemented by the ADPs. Desirable mobilization of rural youth demands roles of ADP's extension to link up with other relevant institutions- both government agencies and non-governmental agencies in order to encourage and train the youths to participate actively in agricultural development programmes. This involves measures and strategies to achieve the commitments required from the youths.

The questions to ask therefore are; what are the personal characteristics of rural youth in South-eastern States' Agricultural Development Programme? What strategies are employed by the ADPs in mobilizing youths to participate in farm activities and agricultural transformation and development processes? What factors constitute constraints to the ADPs in mobilizing the youths for agricultural production and transformation in south-eastern agricultural zone? What specific lessons can be learned from mobilization of youths under the ADPs that will serve as measures to enhance research, extension and farmer linkages for sustainable agricultural transformation in South-eastern, Nigeria? This paper provided answers to the above questions.

### **Purpose and Objectives**

The overall purpose of the study was to identify strategies for youth mobilization under the agricultural development programme and draw lessons for effective linkages between research, extension and farmers for agricultural transformation in South-eastern Nigeria. Specifically, the study was meant to:

1. describe the personal characteristics of rural youth in South-eastern States' ADP
2. ascertain youth mobilization strategies employed by the ADPs in agricultural production and transformation
3. Identify the constraints of the ADPs in mobilizing the youth in South-eastern Nigeria agricultural zones
4. Highlight lessons for research, extension and farmers' linkages for agricultural transformation in South-eastern Nigeria.

### **Materials and Methods**

This study was conducted in South-eastern agricultural zone of Nigeria made up of nine states namely, Abia, Anambra, Akwa Ibom, Bayelsa, Cross River, Enugu, Imo and River Ebonyi states. Over 95 percent of the states in the zone have rural farm background, while over 70 percent of the households are engaged in agricultural production and various self-help community development activities. However, fewer members of households including the youth headed households were engaged in trading and civil service, while most of the youth engage in farming, schooling and/or other careers. The population for the study was made up of all youths who are within the described periods of childhood and adulthood within the ages of 12 and 30 years. Thus both youth who were engaged in farming and other careers constituted the population for the study. Purposive, multistage and random sampling techniques were employed in sample selection. In the first stage, two states namely Abia and Ebonyi were selected, basically because of their proximity to one another and researchers'



familiarity/experience with the farming and agricultural administration systems in the states. In the second stage, one zone each from the states involved namely, Umuahia from Abia and Ebonyi Central from Ebonyi state were purposively selected basically because of proximity to one another, intensity of agricultural production transformation activities and location of state ADP head offices in the zones. In the third stage, one local government namely, Umuahia and Ikwo from Umuahia and Ebonyi Central zones respectively were randomly selected. In the fourth stage, two communities each from the LGAs involved were randomly selected, while four villages from each of the communities involved and fifteen (15) youths from each of the villages selected were randomly involved. A total of two hundred and forty (240) youths constituted the sample size for the study. Also, 10 officials of ADP offices in the two states (five from each state) were interviewed.

A structured interview schedule was developed, validated and employed for data collection. The interview schedule reflected issues on personal characteristics of the youths, mobilization strategies employed by the ADPs and constraints on mobilization under the ADPs. Analytical tools such as frequency counts, percentage and mean scores and factor analysis techniques were adopted. The factor loading under each constraint (beta weight) represents a correlation of the variables (constraint areas) to the identified constraint factors and has the same interpretation as any correlation coefficient. Kaiser's criterion using factor loading of 0.30 and above in naming and interpreting the factors and constraint variables was adopted (Child, 1978, Ogunfiditimi, 1979)

## **Results and Discussion**

### **Personal characteristics of the youths**

Data in Table 1 shows that majority (61.25%) of the youths were males, 75.0 percent of them were within the ages of 16 and 25 years and majority (82.08%) were single. This result therefore agrees with Onuekwusi and Nwachukwu (2006) who reported that male youths avail themselves more than their female counterparts for youth programmes in a typical rural community in Nigeria.

Majority (86.69%) of the rural youth in the study area were still attending schools, while 76.23 percent of them were either in boys scout or girls guide clubs and about 50.84% had 6 to 10 years of farming experience. The study indicates that rural youth had sufficient farming experience for meaningful participation in agricultural production and transformation activities of the ADPs in Southeast, Nigeria.



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**Table 1: Distribution of the youth by their personal characteristics**

<b>Items</b>	<b>Frequency</b>	<b>Percentages (%)</b>
Gender: Males	147	61.25
Female	93	38.75
Age (years): ≤ 15	23	9.59
16-20	95	39.58
21-25	85	35.42
26-30	37	15.42
Marital Status: Single	197	82.08
Married	43	17.92
Career Status: Farming	18	7.50
Trading	37	15.42
Schooling	188	78.34
Membership of youth Organizations		
Poultry Club	18	7.50
Livestock club	22	9.17
Girls guide	62	25.84
Red cross	18	7.50
Boys scout	120	50.00
Farming experience (years) ≤ 5	26	10.84
6-10	122	50.84
11-15	92	38.34
Type of farming preferred		
Food crop production	140	58.34
Livestock farming	24	10.00
Food crop and livestock production	76	31.67
Household size: ≤ 5	35	14.59
6-10	12	5.00
Level of formal education		
No formal education	32	13.34
FSLC	29	12.09
SSCE/WASCE/GCE O/L	146	60.84
OND/NCE	14	5.84
JMD/BSC/BA/Bed	19	7.92
Estimated Annual income		
≤ N 1000000.00	50	20.83
N101,000.00 – N120,000.00	85	35.42
N121,000.00 – N140,000.00	55	22.92
N141,000.00 – N160,000.00	40	16.67
N160,000.000 and above	10	4.17

**Source:** Field survey, 2010

The result in Table I also shows that majority (58.34%) of the youth preferred food crop production, while only 19.59 percent of married youths have family size of 5 to 10 members. The study suggests inadequate family labour among the few married youths against the backdrop of enormous labour demands for food crop production. This study therefore, agrees with Alimi (1991) who recommended the use of agro-chemicals, relevant machines and hired labour to complement family labour in order to meet the demands for meaningful food production and food security in Nigeria. Furthermore, majority (60.84 %) of the youth had at least SSCE/WAEC/GCE O/L qualifications, while 58.34 percent of them reported estimated annual income of N101,000.00 to N140,000.00.

Estimated annual income of a farmer indicates income earned from his farm which is the excess revenue and value of household consumption output over cost (Alimi, 1991). The youths seem to have basic educational attainment for progressive mobilization under the ADP. However, they had low reliance on personal savings and associated investment needed for their meaningful participatory agricultural production and transformation process in Nigeria. The study therefore agrees with Jibowo and Sotomi (1991) who noted that the youth knowledge acquisition propensity for participation in agricultural development increases with their educational attainment.

### **ADP's youth mobilization strategies in Southeast, Nigeria**

Data in Table 2 show that the ADPs employed useful strategies in mobilizing the youth for desirable participatory agricultural production and transformation process in the study area. A strategy indicates a process of skilful planning and involvement of measures for sustainable development. Some specific mobilization strategies perceived as relevant among the rural youth include organizing competition between youth organizations ( $x = 4.5$ ), excursion of youth to research institutes and large farm enterprise ( $x = 4.3$ ) and provision of incentives to youth programmes ( $x = 4.0$ ). Equally perceived by the youth as relevant ADP mobilization strategies include, provision of supports on the part of parents ( $x = 4.2$ ), organizing youth clubs ( $x = 3.4$ ), periodic training of youth ( $x = 3.9$ ), involving youth in groups/symposium ( $x = 3.6$ ) and support for inter-gender activities ( $x = 3.2$ ).

Table 2 indicates that the ADP was limited in the employment of some mobilization strategies namely, mass media campaign for youth programme ( $x = 2.8$ ) and provision of basic rural infrastructure ( $x = 2.4$ ). This shows limited use of mass media to sensitize the youth and promote youth programmes. This indicates a major weakness on the part of government to provide the ADP with necessary mass media facilities for mobilization of youths.

**Table 2: Distribution of Youth Perception of ADP Mobilization Strategies by mean.**

Mobilization Strategies	X (max =5)
Organizing youth clubs	3.4
Provision of incentives to youth programmes	4.0
Encouragement /support to inter-gender activities	3.2
Organizing Competition between youth organization	4.5
Periodic training of youth on Agric and rural development Projects	3.9
Mass media campaign for youth programmes	2.8
Excursion of youth to research institutes and large farms	4.3
Provision of support on the part of parents	4.2
Involving youths in groups/ symposium	3.6
Provision of basic rural infrastructure	2.4
Involvement of schools in youth oriented Programmes on the part of ADP	3.3

**Source:** Field Survey, 2010

### **Constraints of youth mobilization under the ADPs in Southeast, Nigeria**

Data in Table 3 shows the varimax rotated factors perceived by the youths as constraints of mobilization under the ADPs in the study area. Based on specific issues and items loading three major factors were extracted namely; factor 1, lack of basic infrastructure; factor 2, poor socio-economic conditions; and factor 3, inadequate rural leadership. Specific issues which loaded high under lack of basic infrastructure include inadequate markets and transport facilities (0.47), inaccessibility of credit to youth associations (0.59) and irregular contacts on the part of extension agents (0.35). Others include difficulty in understanding extension techniques (0.52), poor network of roads (0.56) and rural-urban migration (0.37). Inadequate markets and lack of transport facilities are related infrastructural problems which are blameable on government inefficiencies to provide good network of roads. Moreover, the absence of good roads coupled with the poor state of market and transport facilities as revealed by this study cause rural-urban drift of youths in the study area. The study therefore, agrees with Nwachukwu (2008) who identified lack of infrastructure as a contributory factor to rural-urban drift of youths in Nigeria. Similarly, irregular contacts of extension agents could be attributable to lack of basic infrastructural facilities such as roads and transport all of which could limit extension in providing effective training for the youth. The perceived ineffectiveness of extension trainings no doubt, amplify lack of basic infrastructure as constraints to the ADPs in mobilizing the youth for participatory agricultural transformation

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process in the study area. The study also agrees with Eze (2000) who identified inadequate infrastructure as a constraint factor on extension contacts to farmers in south-eastern Nigeria. Thus, the more adequate the infrastructure the more effective the ADP extension in providing necessary information on agricultural production and transformation as well as encouraging participation among the youths in Nigeria.

**Table 3: Varimax Rotated Youth Perceived Factors on Mobilization under the ADPS**

<b>Constraint variables</b>	<b>Factor 1: Lack of basic infrastructure</b>	<b>Factor 2: Poor socio-economic conditions</b>	<b>Factor 3: Inadequate Leadership</b>
Lack of traditional leadership	-0.39	-0.15	0.51
Inadequate markets and transport facilities	0.47	0.13	-0.26
Inaccessibility of credit to youth associations	0.59	0.27	0.18
Lack of participation in rural devpt. projects	-0.40	0.32	0.23
Fear of risks and uncertainties involved in Agriculture	0.06	0.38	-0.29
Non perception of agric as a profession	0.20	0.45	0.08
Inadequate education among the youth	0.24	0.43	-0.05
Irregular visits of the extension agents	0.35	-0.28	-0.18
Difficulty in understanding ext techniques	0.52	-0.20	-0.16
Land tenure / inaccessibility to land	-0.13	0.44	-0.09
Intra/inter community conflicts	0.04	0.34	0.50
Poor network of roads	0.56	-0.11	0.03
Rural-urban migration	0.37	-0.25	-0.04
Difficulty in linking youth prog. to donor agencies	-0.02	0.14	0.46
Inadequate relationship between youth associations and traditional rulers	-0.12	0.07	0.43

**Source:** Field Survey, 2010

Poor socio-economic conditions of youths, which depict poor state of the youth in terms of their social and economic statuses constitutes the second group of the constraining factors. Some specific youths' poor socio-economic condition issues include, lack of participation in agricultural transformation projects (0.32), fear of risks and uncertainties in agricultural production (0.38) and non-perception of agriculture as a profession (0.45). Others include inadequate education among the youth (0.43) and land tenure / inaccessibility to land on the part of youth (0.44). Fear of risks and uncertainties in agricultural production among the youth is blameable on their inadequate education all of which limit mobilization of youth for participation in agricultural and rural development projects. Earlier studies by Blum (1991) and Madukwe (1996) have identified education as a facilitating factor in any extension programme including mobilization of youth under the ADPs. Thus the more educated the youths are, the more equipped they would be to understand extension techniques and embrace risk aversion strategies in agricultural production and transformation. This will also stimulate the youths to appreciate agriculture as a profitable profession and their overall participation in agricultural transformation.

Furthermore, Table 3 reveals inadequate rural leadership in the study area which depicts inadequacy in the traditional ruler ship institutions and leadership structure in rural youth organizations. Some specific inadequate rural leadership issues include lack of traditional leadership (0.51), intra/inter community conflicts (0.50), difficulty in linking youth programmes to donor agencies (0.46) and inadequate relationship between traditional rulers and youth associations (0.43). Lack of traditional leadership contributes to inadequacy in relationship between traditional rulers and youth associations basically because of possible weakness in leadership structures of the traditional institutions. The perceived weak leadership structures contribute to possible incessant intra/inter community conflicts. Situations of intra/inter community conflicts aggravate difficulties in linking youth programmes to donor agencies possibly because of perceived uncertainties and insecurity in the study area. Joiyifo (2008) attributed high risk of youth restiveness to impatient due to prevalent insecurity in rural communities and inability of government to provide economic resources to empower the youth.

### **Lessons for research, extension and farmers linkages for agricultural transformation policy in Southeast, Nigeria**

Youths possess regenerative energies, potential intelligence and skills which can motivate them to participate in development initiatives of the ADPs and propel necessary linkages between research, extension and farmers for sustainable Agricultural transformation in

Southeast, Nigeria. This study shows that rural youth in the study area have remarkable differences in their personal characteristics and socio-economic conditions. These differences in personal characteristics of the youths constitutes a baseline information on their socio-economic conditions and lessons for the ADPs for strategic planning and implementation of linkages between research, extension and farmers for agricultural transformation policy in Nigeria. Thus, the differences in terms of age, gender, household size, farming experience, preferred agricultural production, marital status, career status, levels of formal education and estimated income can be employed by ADPs as necessary lessons in categorizing the youths for mobilization. However, the diverse educational attainment among the youths guides the role of ADPs in linking with research and farmers needed in categorizing them along the lines of their preferred youth clubs and groups for purposes of providing group training on agricultural production and transformation. This situation constitutes a critical issue to improve ADP extension services by overhauling structural arrangement within the relevant LGAs as viable extension blocks in implementing necessary linkages under various youth oriented extension programmes. This arrangement would impinge on the ADPs to employ mobilization strategies such as organizing youth clubs, provision of incentives/award to inter-youth competitions and linkage support to the youth on the part of parents.

Moreover, the envisaged improvements in ADPs extension services and mobilization strategies serve as guide to the ADPs on linkage issues related to extension staff training on youth club dynamics in order to achieve meaningful motivation and mobilization of the youth. This situation could be facilitated by linkages between research and ADPs extension on issues related to regular extension staff training and contacts with the youth on relevant agricultural production technologies. The envisaged regularity in extension contacts with youth has lessons to government support to the ADPs linkages with research through provision of necessary extension facilities, logistics and basic rural infrastructure. These issues of regular support to ADP extension and development of rural areas demand improved budgetary allocation on the part of Government and financial as well as other resources support on the part of benefiting LGAs. The situation could involves increasing number of extension staff of the ADPs, re-orientation and retraining of relevant community development staff of the LGAs to complement agricultural production and transformation efforts of the ADPs. This will assist the ADPs as rural-oriented organization to meaningfully link with research and farmers in mobilizing the youth for participatory agricultural transformation policy in Southeast, Nigeria.

Furthermore, for the ADPs to contend with emerging improvements and linkage challenges in mobilizing youth and overall agricultural transformation requires that the state governments in conjunction with LGAs would employ a democratic philosophy as a strategy under the ADPs. This measure will assist the ADPs towards stimulating existing and emerging youth associations. This will overtly streamline their activities and mobilize them to work with the existing local leadership under the ADPs and co-ordinating research institutions.

The foregoing measures require harmonization and organizational overhaul between youth associations and traditional institutions necessary in facilitating research through the ADPs extension activities to the youth as a formidable group. The envisaged harmonization would be appropriate to the extent that it would involve re-orientation and improve group cohesion to enable ADPs focus contacts on potential groups of youth for sustainable linkages with farmers and participatory agricultural transformation policy in Nigeria.

### **Conclusion and Recommendations**

The study investigated mobilization of youth under the ADPs and highlighted lessons for effective linkages between research, extension and farmers for agricultural transformation in South-East, Nigeria. The study was based on the prevalent situation of inadequate utilization of regenerative energies, potential intelligence, and skills among the youths in institutional linkages for agricultural production under the ADPs in an agrarian economy such as Nigeria. Results indicate that low performance of the ADPs on youth mobilization and limited agricultural production and transformation process are attributable to critical constraints and weak institutional linkages.

The constraints include, lack of basic infrastructure, poor socio-economic conditions among the youth and inadequate rural leadership. Based on the foregoing, the study recommends improved extension services and staff training, budgetary provisions and resources support on the part of the benefiting State Governments and relevant LGAs.

Other recommendations include, overhaul and improved cohesion on the part of rural leadership institutions and youth associations, streamlining the structure and operations of existing youth clubs and ADPs focus of extension contacts on harmonized and mobilized groups of youths. In conclusion, youth mobilization under the ADPs for sustainable agricultural production depends on the extent issues raised and linkage lessons thereof highlighted can be addressed and sustained.

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# 13. Effective Linkage between Research and Policy Making in Soil Sustainability: Building the Capacity of Youths and Women via Collaborative Mentorship/Training

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## Abstract

Poor capacity limits youth involvement in research and policy for sustainable soil and environment management. The global outcry for environmental sustainability and climate change seem to elicit no reaction, because the major part of the work force in agriculture, which consists of youth and women, do not have the capacity to contribute reliably to research, policy and practice. Contribution to research becomes unrealistic when understanding of the issues are lacking. The knowledge of the soil processes is very essential to its appropriate use so as to maintain the balance in the ecosystem. Unsustainable farming practices and land use, including land abandonment, have adverse impact on natural resources and climate. This study examined workshop training programme on principles and applications of soil physics to development challenges in West Africa organized by the collaborative effort of the Abdus Salam International Centre for Theoretical Physics in Trieste, Italy; the Nigerian Special Program on Agriculture and Food Security of FAO; the Soil Science Society of Nigeria; and Ahmadu Bello University. The purpose of the workshop was to build capacity in soil physical processes among young, researchers catalyze a sub-regional network of scientists working in the area of soil physics and closely related disciplines and to open avenues for collaborations and partnerships. The paper examined modalities/ strategies for selection of youth and cost sharing formulae with respect to accommodation, transportation, feeding, registration and workshop materials. The programme developed youth capacity to carry out research on soil and water management amidst climate change scenarios, and other factors. The paper also considered effective strategies to create viable and adequate linkages between the young researchers and

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*policy makers so as to effectively engage their research output in the developmental plans in the developing countries. Furthermore, the linkages to donor agencies, professional bodies and government agencies were highlighted. The paper concluded by examining the need to continue this type of capacity building and evolve even more all-inclusive forums for all developing countries, especially Africa to ensure rapid development from within.*

**Keywords:** *Youth, Capacity Building, sustainability, research and Policy.*

### **Introduction**

Poor capacity of the youth refers to inadequate skills, knowledge, awareness, motivation and poor links to network of researchers and resources required for improved research that will be acceptable to policy makers. Poor research capacities of youth have made it impossible for them to contribute to policy for sustainable development. The complex nature of soil and natural environment has made research the only solution for the continued use of this scarce resource. The teeming population increase also has contributed to the abusive use of the soil which is one of the causes of the alarming global warming problem. Improved research for development is a serious need to meet challenges posed by changes in the environment, global market, social and political life. The work force therefore needs to be equipped substantially to cope with this challenge, by continuous training to update their knowledge.

Youth and women are agents of development yet they are not fully informed scientifically about their environment, yet they are the group that does the practice in the field. Sustainable development requires knowledge of the environment, knowledge of the damaging impacts of some actions, and application of knowledge to remedy the effects. African youth lack a wide range of knowledge in research and policy. Nearly 140 million youth in developing countries are classified as 'illiterate'. Generally, the preparation of youth for productive work is poor (Atchorarena and Gasperini, 2003). The knowledge can only be acquired through training/research to understand and address the problems of the society as well as develop constructive ideas to advance a policy action plan. The youth can only increase their chances of impacting policy in a way that benefits them and the society at large, by being as knowledgeable as possible in key issues associated with the policy they want to impact. The United Nations Conference on Environmental and Development (UNCED) Agenda 21 mentions women's advancement and empowerment in decision-making, including women's participation in national and international ecosystem management and control of environmental degradation as a key area for sustainable development (Wee and Heyzer, 1995, Zoe and Baden, 1997).

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But most often the structure is devoid of the necessary equipment to aid this action. There is lack of collaborative network, awareness, information sharing mechanisms, access to training and institutionalized forum for developing the youth. The access to information is therefore limited. The amounts of the information the youth have are then very limited and this results in a wide difference in opinion between the desires and need for knowledge and the availability of information. This incapacitates their participation in decision making processes.

Lack of infrastructure and technologies are also another reason why the youth are not participating in research. The facilities that are available for their use are insufficient. The University education is so stereotyped that it is not efficiently serving the youth in this dynamic technology. The spate of reports commissioned by higher education stakeholders over the past ten years (e.g., AC Nielsen Research Services, 2000; Business/Higher Education Round Table [B/HERT], 1991, 1992, 1993; Coopers & Lybrand, 1998; Sausman & Steel, 1997; The Association for Graduate Recruiters, 1993, 1995) have all recognized that a strong disciplinary knowledge base does not, of itself, guarantee a new graduate a job. The transfer of technology to less developed countries is not enough to facilitate the capacity building of the youth for sustainable development, hence the serious need for training in specific areas of specialization to harness maximum performance.

Sometimes the youth are not participating because they lack interest in research or they lack the skill to conduct a good research. Indeed, human capacity manifests in the skills, talents, faculties, competences, proficiencies, and capabilities of human agents (Mcpherson, 2005). The skills acquired during the undergraduate trainings for instance have been shown by (Crebert, et al; 2003) as not enough to give the required competence in work places.

Highly motivated youth develop personal and professional skills while living away from home, travelling, doing voluntary or community work, and participating in clubs and societies, that impact upon their confidence and consequently increase their employability (Atkins, 1999). This lack of skills in the youths needs to be built up by several trainings/workshops/mentorships in their special areas because of its relevance in development.

Human capacity takes time to be generated and sustained. They depreciate through inattention and non-use. As knowledge, technology, market conditions, and social circumstances change, human capacities can become obsolete. As the change occurs, the

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relevant context for some areas becomes international and the need for linkages and networking arises. Education and trainings is a great way of returning the lost or reviving the obsolete knowledge either privately or socially. The areas that ignore education and training waste their human capacities. So many people that are not working who are addressed as 'working poor' are actually occupied in tasks that are below their physical and intellectual capacities. This may be because they have not been given adequate training.

Improved capacity building is essential for the youth to participate effectively and contribute meaningfully in realizing sustainable development. It can be a way of arresting youth restiveness, reduction in poverty, and creation of employment and wealth. Capacity building for the youth is needed to reduce the large number of youth groups all over the world that continue to disintegrate due to lack of capacity to sustain their operation and hence begin to develop second liners. Improved capacity of the youth in soil and environmental issues is required to conduct research in areas of climate change, soil conservation as well as contribute to improved yield in agriculture. The improved capacity will be useful in urban planning and design of farm stead. These will result in better environmental management, improved land resource allocation, climate change adaptation, and better policy options that will improve human welfare.

The broad objective of the paper was to examine strategies of building the capacity of youth and women via collaborative mentorship/training and their linkage between research and policy making in the area of soil sustainability. Specifically the study centred on description of the following:

- (a) Strategies employed by a workshop on principles and applications of soil physics to development challenges in West Africa to train youth.
- (b) Effects of the programme.
- (c) Derive lessons for improving capacity of youth in research and policy.
- (d) Strategies for effective linkages of youth researchers to policy making.

## **Methodology**

### **Research methods**

The study was developed by literature review and qualitative analysis of the theme of the workshop. The relevance of the different strategies used in the workshop was qualitatively evaluated. The personal experiences of the capacity building workshop held in Ahmadu Bello University Zaria, Nigeria were discussed.

## **Results and Discussions.**

### **Strategies**

The strategies employed by the workshop on principles and applications of soil physics to development challenges in West Africa to build capacity of the youth involved a call for expression of interest, selection of possible trainees, cost sharing, lectures and discussions, networks and linkages. The call for the expression of interest for capacity building in soil physical processes was advertised on the internet. The call invited participants that are not fully experienced but are at the early stage of their career from across the West African countries. The main objectives was to train young researchers in soil physics and build their capacity in soil physical processes, catalyze a sub-regional network of scientists working in the area of soil physics and closely related disciplines, and open avenues for collaborations and partnerships. This method of call for expression of interest is also used by some other organizations like African Technology Policy Studies Network, Poverty and Economic Research Network and lots of other organizations. The special aspect of this call was that it was circulated by soil science societies of different West African Countries especially Nigeria to all her registered members.

The workshop was a collaborative effort of the Abdus Salam International Centre for Theoretical Physics in Trieste, Italy; the Nigerian Special Program on Agriculture and Food Security of FAO; the Soil Science Society of Nigeria; and Ahmadu Bello University, Zaria, Nigeria. The majority of the youth selected had limitations with respect to financial resources. The collaboration made the workshop feasible in that the work/cost was shared.

The cost sharing approach helped most of the participants – both the employed and unemployed young researchers selected, to gain access to the programme. The funding organizations provided instruction materials, accommodation, registration and feeding while the trainees cared for their transportation fees only.

The tool used for the capacity building of the young researchers was a training workshop. Lectures were given from renowned scientists including Dr. Donald Gabriels (University of Ghent, Belgium), Dr. Sjoerd Duiker (Penn State University, USA), Dr. Felix Salako (University of Agriculture, Abeokuta, Nigeria), and Dr. Bashiru Raji (University of Ilorin, Nigeria). There were also invited papers, discussions, field trips, and presentations on grant opportunities. The workshop gave the opportunity for scientists in the same field in West Africa to come together brainstorm and exchange ideas on how to combat the challenges of soil sustainability. One of the lectures titled, “Soils of West Africa: Characteristics and

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properties, Management and Utilization,” examined characterization, properties and utilization of soils in West Africa. The lecture outlined how to determine characteristic and properties so as to infer improved utilization of the soil. Another lecture examined models for climate change. About 23 of the models were studied.

Emphasis was on objective driven action in the choice of a model to explain a phenomenon. Features of models that can improve their predictability were examined. The flow of water in saturated and unsaturated soils was extensively discussed. The lecture explained the conditions of the soil that will require irrigation and also when irrigation is not required. The processes going on in the soil during water movement was extensively discussed. This is a strong instrument that the field workers need to maintain soil quality and soil health. It will tell the farmer to drain or to irrigate considering the properties of the soil. The workshop extensively educated us on the uses and importance of no tillage practices. One important way of conserving the soils physical properties is shown in plate 1. The interactive sessions were so interesting that it not only made the points clearer but also enlarged the participants' thinking horizons. Plate 2 shows the first author making contribution during an interactive session at the workshop.

Participants had opportunity to discuss their personal research challenges and how these could be addressed. Malcolm (2005) also emphasized the relevance of training in building human capacity for economic growth. Participants were given training materials like books and leaflets for deeper understanding of the lectures given and for reference purposes.

Networking, access to information and linking research to policy were the critical issues. Linkage of network of young researchers to policy making will enable youth involved in research and policy to achieve success. The sharing of information, exchange of addresses including phone numbers and emails was used in building the network. Effective strategies to create viable and adequate linkages between the young researchers and policy makers include provision and sustainability of a living network that is admitting, training and mentoring young researchers. The target is to develop young researchers who will become good professionals, thus professional bodies are integral parts of the linkage. Such professional bodies include Abdus Salam International Centre for Theoretical Physics in Trieste, Italy; the Nigerian Special Program on Agriculture and Food Security of FAO; the Soil Science Society of Nigeria; and Ahmadu Bello University. Linkage to donor agencies such as the Penn State University for PhD scholarship is helping the youth have access to funds and equipment to execute sound research projects.



### **Effects of the training**

The program which was on standardization of methodologies to address research problems in the subject area within the West African sub-region realized a remarkable agenda of widening the horizon of the participants in solving the developmental challenges in the area of soil physical processes. Internal (within country) and external (between countries) collaborations and partnerships were established among participants to further build and/or nurture capacity building and promote the exchange of information on the subject matter.

The programme developed youth capacity to carry out research in soil and water management amidst climate change scenarios. It also provided a platform for scientists in the sub-region to keep abreast of development challenges and promote the exchange of information.

One other good thing in the workshop was the setting up of a network of scholars, scientists, and students interested in the science of soil physical processes in West Africa. This network will offer participants the opportunity to keep exchanging their progress with each other and learn about the on-going impact of the experiences of participants and other scholars interested in soil physical processes in West Africa. A 'list serve' which is a collection of names, phone Numbers and e-mail addresses have been in use to improve networking among researchers. Participants of the workshop discussed promoting capacity-building workshops of this type once every two to three years. Further, the development of a research proposal was approved to cover funding for workshops in two to three West African countries.

Some of the trainees have shown that they benefited from the workshop by putting the knowledge to good use. For instance Ogunwole (2011) has made a publication with the knowledge of the workshop. Others have conducted research with the knowledge acquired from the workshop. There is an on-going call to sponsor some of the participants for a Ph.D. programme in soil physics by the Department of crop and Soil science in Penn State University in America.

Certificate of completion was given to successful trainees to indicate that they have acquired certain capacities to conduct credible research which will be acceptable to policy makers. The workshop included introducing trainees to donor agencies so that the youth will know how to source funds through research grants. To make youth research acceptable to policy makers, there is need to communicate research information to relevant ministries and agencies. This should include the problem, objectives, methods results and acknowledgment of funding source if available.



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### **Lessons and Implications of the Workshop**

The lessons derived from the workshop include an appreciation of the fact that soil and environment are resources whose conservation and proper usage will improve income, social wellbeing and economic growth of the nation. The threat of climate change demands an unprecedented improvement in youth capacity to adapt and conduct research for identification of viable policy actions. The youth and women are the major part of the workforce that actually put to practice whatever policy that is developed from any research. The need for their holistic involvement in all the processes of generating the policy is very essential. The case of antismoking policies that were made from research and was not implemented because of lack of public opinion is a serious issue. The Macaulay land use research institute 2008 in their study which Addressed Deforestation in Tropical areas: Greenhouse Gas Emissions, to contribute to development, evaluated the drivers of deforestation and got them involved in the policy making processes. This action will definitely enhance the practice of these drivers of the problem. They will better appreciate the need to stop deforestation. Building the capacity of the youths does not only improve practice but also empower them socially and politically.

The provision of good quality post-school skills training (both pre-employment and job-related) remains very limited among the youths and women. Many governments would like to establish extensive networks of youth training institutions, but do not have the necessary resources to do this. The collaboration of the different bodies that organized this workshop solved the problem of harnessing resources. The cost sharing helped the participants to attend. Some of the viable participants would not have been able to attend this enriching workshop that went a long way in building capacity of the participants. The Belgium Government had a similar problem in the area of the cost of carrying out a research on immigration. They solved it by establishing an extensive quantitative and qualitative survey on the position of immigrants and their offspring within all institutions and spheres of Belgian society (employment, education, housing, politics, etc.) and this ought to be carried out every three to five years. Such a survey required substantial funding and should be managed by the relevant Belgian scientific funding bodies (FNRS, FWO, SPST).

Networking explained developing of social capital. The Nigerian Special Program on Agriculture and Food Security of FAO has already communicated the discussions of the workshop to the appropriate quarters. The Penn State Cooperative Extension, Department of Crop and Soil Sciences and the Pennsylvania State University have already availed the participants of the workshop scholarship opportunity for a PhD study in Soil Science based

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on established partnership in the network, existing between the researchers and the donor bodies. The programme effects showed the need to continue this type of workshop to encourage research and development. There is need to continue this type of capacity building and evolve even more all-inclusive forums for all developing countries, especially Africa to ensure rapid development from within.

### **Conclusion and Recommendations**

With “so little done and so much to do” to promote environmental development in Africa. One might expect that human capacity would be employed as productively and intensively as possible at all times. The use of human capacity depends on the ability of private individuals and firms to generate and sustain a surplus, and by the public sector, at a minimum, to avoid activities that destroy value.

Effective Strategies for Linking Researcher to Policy Makers.

- > An improvement in networking for capacity building is hereby recommended. Cost sharing approach shall be adopted to make the training programme accessible to less financially buoyant young researchers and feasible for organizers.
- > An extension of the capacity building programme to all disciplines and regions in Africa. We recommend that there will be a continuous research among the youths so that they can inform policy confidently on issues concerning them and the environment.

Development of youth centres or youth park where young researcher will be coming together to share ideas and carry out research is also recommended. This youth centre will be admitting and training young researchers in different disciplines. The centre will have a coordinator who will be reporting directly to the appropriate government ministry. By so doing the issues concerning the youth will be effectively linked to the appropriate policy makers. The youth's problems of how to let the policy makers know about their researches or proposals will be solved. The effective link between the youth and the policy makers would have been established. The selection for capacity building will be easier with the establishment of a centre where the youth can easily be reached. Following the Canadian experience, they set up three centres of excellence in the field of migration, one for each region of the country. These centres would involve the scientific community, the political community and the stakeholders (third community). The aims would be to generate better communication among these three communities, and to allow each community to redirect its own Immigration research and policy. The exchange of information and data between the different communities should be improved as part of a reinforced cooperation. For example, researchers ought to have easier

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access to national statistics data. This will be wonderful if employed in this case, as it is not going to allow monopoly which may generate wrong results.

Another recommendation is the establishment of capacity building partnership with regional organizations and similar regional networks to increase region-wide knowledge sharing, exchange of experiences and expertise on commonly shares priority issues identified by the workshop participants. Also to support institutional anchorage of capacity building activities in existing regional centres.

Support knowledge sharing and exchange of experiences between organizations with similar mandates. A good example is through study visits. To achieve good results, the visits should be based on clear terms of reference that identify possible learning areas and which experiences are relevant.

There should also be an encouragement from the government by selecting the youth in the established centres for very important works in the government. This is because the use of human capacity depends on the organization, incentive for enterprises to expand employment and the net return from using different combinations of skills and competences. And also, the general level of confidence within the private sector regarding the future prospects for growth and development.

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**Plate 1: Conservation of Soil Properties**



**Plate 2. Cross section of participants during the International Workshop on Soil Physical Processes in Zaria, Nigeria in 2011. The first author is seen here making a contribution during the interactive session**

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# Section 4

## **Mechanisms and Approaches for Effective Linkages Amongst Researchers, Policy Makers and Practitioners**



# 14. Bridging the Gap between Research, Policy and Practice: A Model for Real-Time Strategic Response to Change

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## **Abstract**

*The bulk of management time in organisations is devoted to coping with uncertainties induced by the environment. It is therefore imperative that change management becomes a necessary pre-occupation of all key players in policy research. Surprisingly, a new kind of turbulence, arising from unaccustomed and unfamiliar sources, notably foreign technologies, foreign competition, and governments, has lately made itself felt. Such changes pose critical threats and opportunities to the organisation as manifested by the prevailing global crises. The speed with which such threats and opportunities develop has been increasing to a point where periodic planning systems may no longer be capable of perceiving and responding to them fast enough before the threat makes significant impact or the opportunity is missed. When a discontinuous change impacts on the organisation, two costs are incurred: the cumulative loss of gains and the cost incurred in arresting or reversing the loss. Management must therefore develop and implement models that minimise the sum of these two losses by either restoring productivity or profitability of the affected units, or at worst, shutting down the operation that supports them. There is therefore need for not only describing and illustrating surprising changes, but also for a system that detects, analyses and responds to them on real-time basis. This paper, based on the existing global events, experience of change management systems and existing literature, analyses descriptive models of the different approaches used to practically respond to surprising changes. It underscores scenarios and causes for delayed response based on thresholds notably rational triggers and analyses, discontinuous changes in terms of*



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*turbulence levels, and explains how periodic planning, strategic issue management systems and weak signal analyses are applied to manage strategic change at different turbulence levels. The paper concludes by illustrating that when threats/opportunities become too high for periodic planning, strong signal issue management should be added and when this becomes too slow, it should be replaced by weak signal issue management. This approach will among others, enable timely anticipation of new developments and provide response to problems arising from any source: political, economic, social and technological.*

**Keywords:** *Changes, Reactive versus Decisive Management, Planned Management, Strategic Issue Management Systems, Decision Options.*

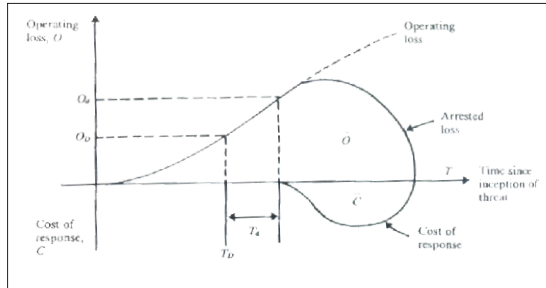
### **Introduction**

The bulk of management time is devoted to coping with uncertainties induced by the environment, notable among which include competitors' moves, economic fluctuations, availability of raw materials and labour demand (Ansof and McDonnel, 1990). Ansof and McDonnel further contend that most managers would attribute most of their time to management of strategic change since time immemorial and that change management is the 'raison d'etre' of managers. Lately however, a new kind of turbulence has increasingly made itself felt and this seems to be emanating from unaccustomed and unfamiliar sources notably from foreign technologies, from foreign competition or from governments (Ansof, 1980a; Taylor, 1979).

The surprising changes have persistently posed major threats or availed novel opportunities to organisations manifested in form of proliferating obsolescence in the organisation's technology, as major loss of market share, drastic increase in the cost of doing business, a chance to get a major jump on competitors or a ground floor entry into a new industry (Ansof and McDonnel, 1990). Business analysis and experience make it apparent that the speed with which such discontinuous changes develop has increased to a point where periodic planning systems may no longer be capable of perceiving and responding to these discontinuities fast enough before the threat has dealt a major blow to the business or the opportunity has been completely missed.

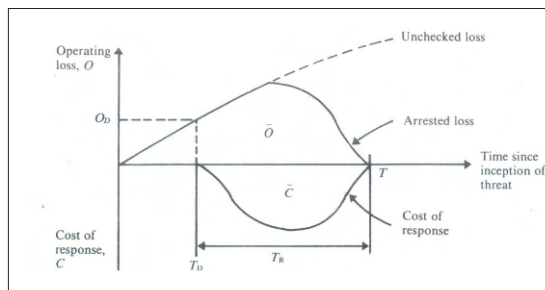
This paper aims at analysing and reviewing descriptive models of the different methods of responding to surprising or discontinuous changes and delves into the associated constraints and pathways of implementing responses to surprising changes.

**The basic Models of Management of Strategic Change**

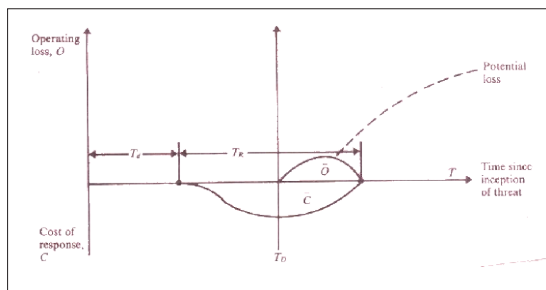


**Figure 1.1: Reactive Management (Source: Ansof and McDonnell, 1990)**

T is the time since inception of the discontinuity/surprising change (which may be a threat or opportunity).  $T_D$  is the rational trigger point.  $T_a$  is the procrastination delay time.  $T_R$  is the time required by the organisation to respond to the threat/opportunity.  $O$  is the expected operating loss incurred up to when the discontinuity is successfully arrested.  $C$  is the expected cost of responding to the discontinuity.



**Figure 1.2: Decisive Management (Source: Ansof and McDonnell, 1990)**



**Figure 1.3: Planned Management (Source: Ansof and McDonnell, 1990)**

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When a discontinuity begins to affect an organisation, its impact typically remains hidden within normal fluctuations in its performance. Therefore, unless the threat or opportunity has been singled out by a special forecast, the initial response is to treat it by measures which had in the past helped the organisation to correct periodic reversals: cost reduction, efficiency improvement or sales aggressiveness. When these historically successful measures repeatedly fail to work, it is evident that the organisation is confronted with a discontinuous change. The time  $T_D$ , referred to as the rational trigger point, is the point at which cumulative data shows with a high degree of confidence, that decline in performance will not be reversed and that special counter measures are required. If for example, lost sales are irreplaceable, the solution is to stop the product line and to eliminate costs which no longer generate income. With more positive options available, new products can be developed using the capabilities and capacities made idle by the threat (Ansof, 1980b; Ansof and McDonnel, 1990).

The extreme solution would be to divest from the obsolete part of the operation while replacing the lost profit with totally new activities (Ansof and McDonnel, 1990). Preferably, the threat need be converted to an opportunity by devising a response that not only replaces but enhances profits and sales. A proactive firm can thus timely anticipate a shift to new energy sources for example, and use this foresight to change to new energy sources ahead of the competition while exploiting this initiative to increase its market share. But in reality, by the time strategic response is triggered, the threat has become a reality and substantial loss,  $O_D$ , has been incurred.

In reactive management, common in large, established organisations that have enjoyed a long history of success, the mere presence of persuasive data frequently fails to trigger prompt response. Historical cases of such organisations that refuse to recognize the 'writing on the wall' of the impact of novel technologies such as replacement of drawn glass with float glass, or change in consumer preferences such as the shift of American preference from the 'gas guzzling monsters' to smaller, more fuel-efficient cars, or of major political realignment such as failure to pay attention to a scenario that predicted the petroleum shock, depict a phenomenon of reactive management.

In such cases, start of response is delayed past the rational trigger point,  $T_D$ , by another period,  $T_d$  (the lag). Ansof and McDonnel (1990) attributed the procrastination of response to either all or any of the following factors:

- > A systems delay, due in part, to the time consumed in observing, collating and transmitting to the responsible managers. It is also partly due to the time consumed by

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the managers in communicating with their peers to establish a common understanding as well as the time necessary for processing the decisions among the responsible groups and decision levels.

- > A verification delay, invoked due to laxity of managers to read the 'writing on the wall'. They argue that even though the level of impact has reached unacceptable levels, there is never an ironclad assurance that the threat is real and that the impact is permanent. They thus opt to wait a little longer for the threat to 'blow itself out'.
- > A political delay occurs if certain managers, whose domain contributes to the crisis, feel that recognition of a crisis will reflect on their reputation and/or cause them to lose power. Thus, even if they are convinced that the threat is real, they will try to fight a delaying action in order to avoid becoming scapegoats and to buy more time to develop a line of defence or to line up a line of retreat.
- > An unfamiliarity rejection delay, would contribute to the foregoing three factors if, as is typically the case in Western managerial culture, the managers are trained to trust prior and familiar experiences and reject unfamiliar ones as improbable and invalid.
- > These delays postpone the response beyond the rational trigger point and substantially increase the total cost to the organisation:  $O + C$

Typically, neither the political resistance nor the unfamiliarity rejection is likely to be overly advanced as the reason for the delay since both carry perjorative implications for the concerned managers. Thus, a need for verification before a major organisational disruption is triggered off, is often advanced as justification for the delay (Ansof, 1980c; Ansof and McDonnel, 1990).

Some organisations, typically small and led by young, aggressive management, without engaging in environmental surveillance or forecasting, are quick enough to learn from the failure of conventional responses and are efficiently fast at cutting losses. However, the response does not commence until after the threat has become a reality and the loss,  $OD$ , is substantial. Once countermeasures are started, the loss is gradually brought to zero. This is normally at the expense of extraordinary cost in divesting the plant, liquidating the inventory of obsolete materials and parts, or reduction of the workforce, among other tactics. These costs usually spill over and above the normal operational costs. Thus, while the threat is being arrested during period,  $TR$ , the two streams of cost are accumulated losses from unprofitable operations plus the cost of liquidating these operations. As soon as data shows that cumulative loss of profit cannot be due to normal fluctuations, management triggers a response to avert the discontinuous change. Thus, response is triggered at exactly the rational

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trigger point,  $T_D$ . This management phenomenon is called decisive management. By the time the threat is arrested, the firm has incurred a cumulative operating loss,  $O$ , measured by the area under the upper curve, as well as the cost of arresting the threat,  $C$ , measured by the area under the lower curve. Thus, total loss:  $L_r = O + C$

Both reactive and decisive responses are after-the-fact: the response is triggered after the threat has inflicted tangible losses on the organisation. These managerial behaviours are common in organisations in which the internally available information is confined to historical events and historically-based management information systems (MIS) are used in decision making (Ansof, 1985).

For firms which engage in forecasting, anticipation of threats is expected to be matched by anticipatory response. However, observation and recent studies of the response to the oil crisis (Ghosh, 2000) show that many organisations that engage in forecasting still exhibit the same procrastination behaviour as the reactive organisations mainly due to the nature of the forecasted information. The forecasts of economic conditions, sales, earnings and costs are extrapolative since they project past performance patterns into the future. This makes early impact of discontinuous departures from historical trends to remain hidden behind normal statistical fluctuations induced by economic and competitive activities. Only when the impact is large enough to stand out from the historical pattern does management become aware of the discontinuities, at which time, the advantages of anticipation are already lost (Coch and French, 1966).

In organisations using non-extrapolative forecasting, structural economic forecasting or scenarios which specifically address early identification of threats /opportunities (T/O) posed by strategic discontinuity, information is provided before-the-fact anticipatory responses and hence, response is completed before the threat can do any harm or when the opportunity is still prevailing. This is typical of proactive, experienced managers and is called planned management. It is however evident from the figure 3 that even when non-extrapolative forecasting is applied, the results are rarely heeded and procrastination may still last until after the threat has become a painful reality. Example: recent studies of post-petroleum crisis, behaviour show that advanced presence of an OPEC scenario frequently made no difference as the responses were still after-the-fact even though results of the forecast had been availed to management (Ansof and McDonnel, 1990).

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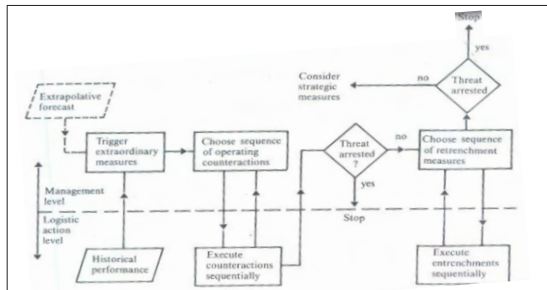
In planned management, the rational trigger point,  $T_D$ , is also the forecasting horizon and the organisation starts its response as soon as the forecast has unambiguously identified an impending threat. However, as seen from figure 3, procrastination delay,  $T_d$ , that is present in reactive management but is absent in decisive management, still resurfaces in planned behaviour due to the same factors, but for different reasons (Ansof, 1980d). But unlike reactive management which uses historical data from past performance, planned management uses primary input data (Ansof, 1980a; 1980c; 1980d). The individual forecasting experts are not under pressure from other activities and thus, report identified threat/opportunity directly or through a small chain of command to the responsible managers. There are however large delayed responses due to verification, political resistance and unfamiliarity rejection (Ansof, 1985; Dutton, and Duncan, 1987; Dutton and Othensmeyer, 1983; Mitroff et al., 1987). The triggering information is conjectural and no longer based on painful experience as is the case in reactive management, providing justification for the natural delay tendencies. The verification process, instead of questioning whether the observed results will persist, is now concerned with whether the T/O will occur after all, and if it occurs, which course of action to follow. The defensive political tendencies of threatened managers are augmented by the argument that it is imprudent and 'foolish' to respond to mere speculation about the future. The managers garner the support of their peers who, on psychological rather than political grounds, would refuse to take seriously, a vague threat with unprecedented experience (Ansof and McDonnell, 1990)

These delays deprive the merits of forecasting and the damage done depends on the relationship between the forecasting horizon,  $T_D$ , the procrastination delay,  $T_d$  and the response time,  $T_R$ .

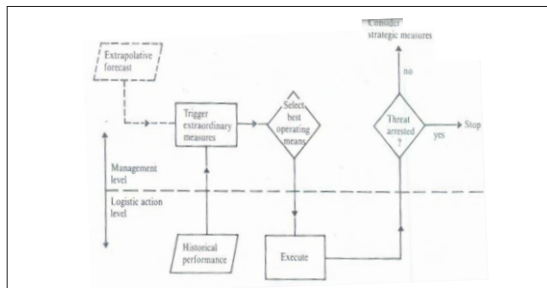
- > If  $T_d$  is controlled such that sufficient time is left to implement the response before the threat begins to impact, the optimal situation results. The response is timely and the only cost to the firm is the cost of implementing the response. This is described by the equation:  $T_d = T_D - T_R$ .
- If response is triggered before the threat begins to impact but too late to complete the response before impact starts, the cost is higher: combining response and operating losses. The relationship is:  $T_d > T_D - T_R$   
If  $T_d$  is excessive such that  $T_d > T_D$ , most of the advantages of forecasting are lost and the response moves into either the reactive or decisive category
- > In some cases,  $T_R > T_D$ -and response cannot be completed before the threat begins to impact even if the procrastination delay  $T_d$ , is eliminated.

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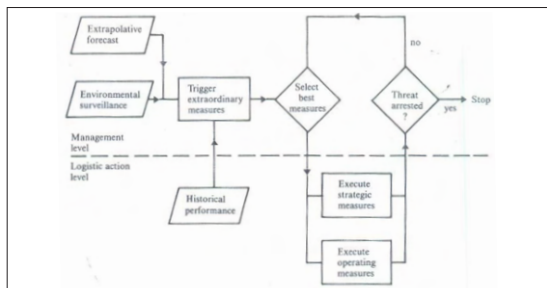
Management must thus control within limits, all the three determining factors,  $T_D$ ,  $T_R$ , and  $T_d$  to ensure low cost but effective response. The three phenomena are summarised in figures 1.4, 1.5 and 1.6.



**Figure 1.4: Sequential response to discontinuities in a reactive firm (Source: Ansof and McDonnell, 1990)**



**Figure 1.5: Sequential response to discontinuities/threats in a decisive organisation (Source: Ansof and McDonnell, 1990)**



**Figure 1.6: Sequential response to discontinuities in an entrepreneurial planned organisation (Source: Ansof and McDonnell, 1990)**

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As seen in figures 1.4, 1.5 and 1.6, management has two sequencing decisions to make:

- > That in which the strategic and operating problems are addressed
- > That in which the specific measures are taken within each problem.

The reactive behaviour is doubly sequential: strategic responses do not commence until after the operating options have been exhausted. Within each class of response, the specific measures are tried sequentially, one-at-a-time, and the behaviour is an experience-dependent trial-and-error process.

Decisive management is sequential-parallel: operating-strategic problems are addressed sequentially. When it comes to specific measures, an analytic approach is used. Alternatives are identified and compared and if necessary, several measures are implemented in parallel.

Planned management is a parallel-parallel approach: Responses and measures are selected through comparisons and analysis and a number of parallel action programmes is initiated. Table 1 gives a comparison of behaviours in confronting a strategic threat. All the three management behaviours are observable in practice. The question is to determine the mode of response that management should be advised to pursue. The answer is that the cost-effective choice depends on the level of environmental turbulence. At stable, repetitive situations (turbulence level 1-2), reactive response is adequate since the speed of technology change is low and strategic discontinuities are rare. At levels 2-3, strategic discontinuities are infrequent but the speed of change makes a rapidly operating response. Decisive management is adequate here. At levels 3-5, strategic discontinuities are frequent and thus, both operating and strategic responses must be made expeditiously and this calls for planned management.

### **Strategic Issue Management Systems (SIM) as Approaches to Management of Discontinuous Change**

A strategic issue is a forthcoming development either inside or outside the organisation, that is likely to have significant impact on the organisation's ability to meet its objectives (Renfro, 1987; Schneider, 1985; Wartick and Rude, 1986; Weick, 1988; Nelson and Health, 1986; Dutton and Duncan, 1987; Ansof and McDonnell, 1990). An issue may be welcome: an opportunity to be grasped in the environment or an internal strength to be exploited to enhance the competitive advantage of the organisation (Dutton et al., 1983; Ansof and McDonnell, 1990). An issue can also be unwelcome: an external threat or an internal weakness either of which imperils the continuing success or even survival of the organisation. Frequently, external threats which signal significant discontinuities in the environment can be



**Table 1.1: Comparison of Behaviour in Confronting Strategic Threats**

Period	Management Behaviour		
	Reactive	Decisive	Planned
<b>Pre-trigger phase</b>	Delay trigger past threshold until sure of the threat	Act when the rational trigger point is reached	Act in advance of the threat
<b>Post-trigger phase</b>	<ul style="list-style-type: none"> <li>• Assume threat as operating</li> <li>• Respond sequentially</li> <li>• Try post-operational success</li> <li>• Try retrenchment</li> <li>• Turn to strategic response</li> </ul>	<ul style="list-style-type: none"> <li>• Assume threat as operating</li> <li>• Select optimal operating response</li> <li>• Try response</li> <li>• Turn to strategic response</li> </ul>	<ul style="list-style-type: none"> <li>• Diagnose nature of threat</li> <li>• Select both optimal strategic and operational responses</li> <li>• Try op</li> <li>• erating and strategic responses</li> </ul>
<b>Condition for best cost-effectiveness</b>	Strategically and operationally continuous environments	Strategically continuous operationally fluctuating environment	Both strategically and operationally discontinuous
<b>Appropriate turbulence level</b>	1-2	2-3	3-5

**Source:** Adapted from Ansof and McDonnel (1990)

converted into opportunities by aggressive and entrepreneurial management (Wartick, 1988). This has been one of the most prizing characteristics in the history of the US firms (Ansof and McDonnel, 1990). Strategic issue management has lately been forwarded as one of the approaches for management of discontinuous change in special cases that require non-routine monitoring and review. The rationale for strategic issue management lies partly in the size of the organisation and partly the speed of emergency of the discontinuity (T/O). Ansof and McDonnel contend that:

- > Some organizations cannot afford or do not need the cumbersome paraphernalia of annual strategic planning: for example, small and micro enterprises which cope with environmental turbulence but do not have the managerial capacity nor resources to engage in comprehensive strategic planning, represent the former case, while stable organizations with clear strategic thrusts in the turbulent environment represent the latter case
- > A growing incidence of events emanating from unexpected sources and impacting quickly on the organization, combining speed with novelty to make such issues to appear too fast to permit timely perception and response within the annual planning system.

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There may also be some issues that occur between the planning cycles and which may impact too quickly to be delayed until the next planning cycle. Other issues occur during the planning cycle and may thus impact before the planning period is over.

With either or both of the foregoing scenarios, it is imperative that issue resolution is separated from the annual planning cycle. One such approach for effecting this is the application of the strategic issue management system (SIM), which is a systematic procedure for early identification of and fast response to surprising changes both within and external to the organisation (Ansof, 1985; Wartick, 1988; Health and Associates, 1988).

Following are the tactics that can be used to effect early identification of strategic issues (Ansof and McDonnell, 1990):

- > Real-time and continuous identification of issues throughout the year with periodic (say, monthly) review and updating of a key issue list
- > Continuous surveillance both inside and outside the organization for fast issues which may arise in between the reviews and signaling a 'red light' to alert management of the need for immediate action

The strategist also needs to employ some tactics for enhancing fast response to emerging trends:

- > Engagement of senior management groups with adequate resources and authority to initiate prompt action without unnecessary delay
- > Application of SIM in cross-cutting manner: assignment of individual issues directly to units best equipped to deal with them, even if it means reaching several hierarchical levels, and forming ad hoc projects of affected and expert individuals to handle those issues not specific to particular units. Resources can then be assigned to the ad hoc projects which may report its results directly to senior management
- > Applying SIM as a management action system, not a planning system, by emphasizing identification and resolution of issues in tandem

But how should responsibilities for the system be assigned? Who should be involved in strategic issue management?

Ansof and McDonnell (1990) suggest the following solutions to the foregoing questions:

- > There should be staff group concerned with trends detection, impact evaluation, timing for the response and alerting of decision makers about sudden and important issues.

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This group is also responsible for maintaining a 'war room'- an up-to-date display of the key issue list, their priorities and the project status. The staff group may also do monitoring of the progress of the various projects towards assigned goals

- > A general management group, which may be the same as the staff group in small and micro enterprises, to assess the relative importance of the issues, selection of the strategic issue list, deciding how respective issues should be treated and assigning responsibilities for issue resolution
- > The workers, who may be either units or ad hoc projects with assigned responsibility for respective issues

These groups may also act as planners and are responsible to top management. They may be required to submit their action recommendations. The success of each responsible group depends on making these projects resolvers, not planners, of the issues. Otherwise, SIM may degenerate into 'Paralysis by Analysis' (Ansof and McDonnel, 1990).

### **A Conceptual Model for Strategic Issue Analysis**

It is important to control the project team, not only for their operating results, but also for their success in clarification of the strategic implications. If general management fails to exercise strategic control, experience shows that, once started, projects tend to acquire a life of their own, and may continue even when it is obvious that their impact on the organisation will not be significant. Therefore, it is imperative that a rational criterion of synthesizing strategic issues should be applied to enable effective direction of effort and application of resources. The decision criterion commonly applied for this is based on three possible sources of information about impending issues: the trends in the external and internal environments, and trends in organisational performance (Ansof and McDonnel, 1990). There is thus need to identify all major future discontinuities or breakthroughs in technology. The Approach should start with broad listing of issues, cross out irrelevant ones (that do not apply to the organisation), and add new issues identified from the environment through environmental scanning. This should be supplemented by internal trend analysis to identify internal trends and events expected to have important impact on organisational performance. Consideration should be given to organisational culture, management structures, systems and capacity to identify positive and negative impact on efficiency and/or responsiveness to the environment (Ansof, 1985).

This is particularly important in fast growing SMEs that are likely to suffer from scale diseconomies. The identified issues are resolved in light of the organisational objectives with

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view to identification of objective gaps. The identified gaps are then diagnosed to determine the causes which are commonly traced to inefficiencies in performance or strategy ineffectiveness. Corrective measures are then programmed into annual plans.

Approach: SIM applies environmental scanning and internal analysis continually throughout the year to ensure identification of sudden, fast and potentially surprising changes.

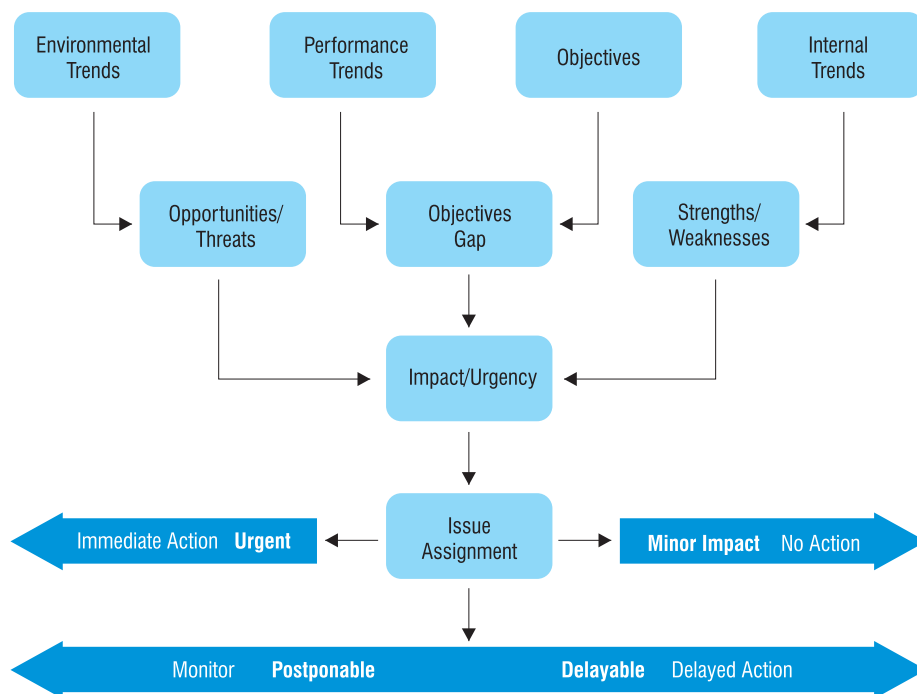
The next step is to assess potential future impact of the trends on the future performance of the organisation, usually by identifying the impact on the attainment of organisational objectives.

You can assign on judgemental basis, a single impact number (say on a scale of -10 to +10) to the impact of each trend or event using expert methods (e.g. The Delphi technique) as well as the probability of and timing of impact strength. Negative impact indicates a range of uncertainty in the evaluation or the expectation that the trend will be both beneficial in meeting some objectives and harmful in depressing performance on other objectives.

The procedure for estimating urgency is based on the state of knowledge in table 1.3. A three-point scale is useful for classification of urgency:

- > If the difference between the timing of the events and the response time is such that the firm must respond immediately, the event is labelled urgent
- > If the response can be delayed until the next planning season, the event is labelled delayable
- > If the response can be delayed indefinitely until better estimates of impact can be made, the event is labelled postponable.

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**Figure 1.7: Strategic Issue Analysis Decision Diagram (Adapted from Ansof and McDonnel, 1990)**

The three levels of urgency and issue assignment are illustrated in table 1.2 below:

**Table 1.2: Issue Assignment**

Urgency	Impact	
	Minor	Major
Urgent		Start a priority project
Delayable	Drop from issue list	Include in the next planning cycle
Postponable		Continue to monitor

Issues whose impact is  $\pm 3$  or less are labelled minor and dropped from the list. The remaining issues are categorized into three levels and action taken in form of key issues and prioritization of resources for action done according to their urgency as shown in table 1.2 and figure 1.1.

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A somewhat more complex procedure called the cross-impact analysis can be added in order to estimate the likelihood of simultaneous occurrence of several events/trends likely to impact together on the organization and permit identification of probable future disaster scenarios in which the firm may be severely damaged by a series of threats/weaknesses. This should also estimate possible opportunity scenarios where the firm is likely to enjoy a series of attractive opportunities/strengths.

Impact and cross-impact analyses respond to issues on the basis of their urgency and impact on the organisation (Ansof, 1985; Schneider, 1985). A complementary method commonly applied by American managers is the SWOT analysis and this matches external threats and opportunities to the internal strengths and weaknesses and is illustrated in table 1.3.

**Table 1.3: The SWOT analysis matrix**

		Opportunities			Threats		
		O <sub>1</sub>	O <sub>2</sub>	O <sub>3</sub>	T <sub>1</sub>	T <sub>2</sub>	T <sub>3</sub>
<b>Strengths</b>	S <sub>1</sub>						
	S <sub>2</sub>	High priority response			High priority response		
	S <sub>3</sub>						
<b>Weaknesses</b>	W <sub>1</sub>						
	W <sub>2</sub>	Do not respond			Convert weakness into strength		
	W <sub>3</sub>						

The summary SWOT analysis approach in table 1.3 shows that:

- > Opportunities which can be captured using the organization's relevant strengths should be given high priority
- > Opportunities requiring capabilities which are weak in the organization are not pursued since they do not enhance the organization's core competences
- > Threats which can be avoided using the organization's strengths are vigorously avoided
- > Capabilities which are too weak for response to serious threats are built up and converted into strengths (Ansof and McDonnel, 1990).

SWOT analysis results into identification of decision on opportunities to be pursued, threats to be encountered and organisational weaknesses to be avoided. However, this approach is based on the assumption that historical strengths and weaknesses remain as such in the future.

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Thus, it is not applicable at high turbulence levels 4 and 5. A modified SWOT matrix is applied at these levels and one such a matrix is the Eurequip matrix which has two components as shown in table 1.4 (a) and (b).

**Table 1.4(a): Positive synergy: Strengths and weaknesses are applicable to responding to threats/opportunities**

		Opportunities				Threats				
		1	2	3	4	1	2	3	4	5
<b>Strengths</b>	1	(a)	High priority on opportunity			(a)	Increase priority on threat			
	2	(b)	Increase priority of building strength			(b)	Maintain priority of building strength			
	3									
	4									
<b>Weaknesses</b>	1	(c)	High priority on opportunity			(a)	Reduce priority of threat			
	2	(d)	Enhance 'weakness'			(b)	Enhance 'weakness'			
	3									

**Table 2.4(b): Negative Synergy: Neither strengths nor weaknesses help deal with threats/opportunities**

		Opportunities					Weaknesses				
		1	2	3	4	5	1	2	3	4	
<b>Strengths</b>	1	(a)	Low priority on opportunities				(a)	Increase priority on threats			
	2	(b)	Low priority on strengths				(b)	Low priority on strengths			
	3										
<b>Weaknesses</b>	1	(a)	Low priority on opportunities				(a)	Increase priority on threats			
	2	(b)	Priority on elimination of relevant weaknesses				(b)	Priority on elimination of relevant weaknesses			
<b>New Capabilities</b>	1	(a)	Assign high priority to the building of new strengths				(a)	High priority on new strengths			
	2										

The first case of the Eurequip matrix has both strengths and weaknesses turning out to be useful for the pursuit of future opportunities or minimizing the impact of threats. The entries are the kinds of shift desirable in the priority, previously established by estimation of impact. For example, when a historical strength of an organisation is applicable to the development of an opportunity, two consequences follow:

- > The opportunity is likely to yield better than average positive impact
- > The strength will appear more attractive than it was before

The result is to increase the expectations and priorities assigned to the opportunities and strengths. Interesting case shown on the lower left cell of matrix 2.4(a) is the possible discovery that certain capabilities which had previously been regarded as weaknesses become

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strengths in the perspective of new T/O. These 'weaknesses' should thus not be eliminated but enhanced. For example, lack of tight controls, previously considered to inhibit organisational efficiency, may become advantageous if new opportunities demand fast organisational response and entrepreneurial risk-taking. The absence of a well-developed financial control function, considered as a weakness in mass production, made it easy for European firms to introduce more advanced forms of planning and control that are essential in the turbulent post-industrial environment (Ansof, 1985). Table 2.4 (b) shows the consequences of negative cross-impact. Historical strengths have become less attractive and so, threats must be taken more seriously than in the past as new opportunities lose appeal. This necessitates the need for identification of new capabilities that must be developed to cope with new environmental challenges. The results of the Eureka cross-impact analysis are summarised in table 2.5.

**Table 2.5: Impact/Urgency of T/O after synergy analysis**

Trends	Impact		Urgency		Threats	Opportunities	Organisation's decision
	Before synergy evaluation	After synergy evaluation	Before synergy evaluation	After synergy evaluation			

### **Environment and Choice of System**

Well-coordinated organisations or those which are too small to have coordination problems, with well-developed and promising strategic thrusts, may need only simple periodic planning systems such as financial control or long-range planning (LRP). If the environments are turbulent, then the organisation may use SIM. SIM is addressed to dealing with deviations from thrusts which occur as a result of new opportunities/threats/weaknesses/strengths (Schneider, 1985; Ansof, 1985; Ansof and McDonnel, 1990). Periodic planning determines the basic thrusts within an organisation and assures coherence and cooperation among different parts of a complex organisation. When both future thrusts and turbulence present problems, a comprehensive system such as strategic management is coupled with SIM to ensure effective response. Such organisations cannot be limited to SIM without the accompanying strategic planning since SIM would instead, create a false sense of security, as for example, the sense of security that is created by patching holes in the hull of a leaking ship which is about to explode (Ansof and McDonnel, 1990).



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Table 2.6 provides guidelines in choosing an appropriate response system.

**Table 2.6: Environment and choice of system**

System	Environment		
	Discontinuous	Surprising	Both
Strategic Planning	Yes		Yes
SIM		Yes	Yes

SIM is apparently an easy, lightweight system to introduce and manage, with minimum apparent 'make work' observed in periodic planning systems. It also addressed pressing issues and is compatible with other systems and organisational structures. It is responsive to change and does not have many of the bureaucratizing self-perpetuating tendencies of periodic systems. However, introduction and institutionalization of SIM is not easy. Ansof and McDonnell (1990) argue that SIM is difficult to implement due to:

- > Refusal of top management to submit itself to the discipline of SIM
- > The mentality problem: refusal by top management to accept new and unfamiliar issues as relevant to the business of the organization

**So, how then can SIM be introduced and institutionalized in an organisation?**

A comprehensive 'sales campaign' must be carried out by the 'converted' subgroup to solicit buy-in of other managers. Other promising courses of action include careful education and involvement in confrontational management. In extreme cases where new realities require a transformation of mentality of key managers, the services of an external consultant may be sought to facilitate the introduction of SIM.

Strategic issue management enhances the timeliness of the firm's response by:

- > Real-time detection and resolution of surprising changes
- > Responding in real time without waiting for the annual planning exercise
- > Using a cross-organizational task force approach to expedite issue resolution

However, as the speed of surprising changes increases, predictability drops.

Thus by the time information about the change becomes sufficient, enough to permit a well-considered response, the remaining time may be inadequate to complete the response before the threat strikes or the opportunity is missed. There is thus an apparent paradox: waiting until the information is adequate for a decisive response may lead to crises; accepting vague information may not give specific analysis and well considered resolution to the issue. Thus, instead of waiting for sufficient information to accumulate, the organisation needs to

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determine what progressive steps in planning and action are feasible as strategic information becomes available in course of the evolution of a T/O.

Early in the life of a threat when the information is vague and its future course unclear, the system is correspondingly unfocused and aims at increasing the flexibility of the firm. As the information becomes precise, so will the response, eventually terminating into a direct attack on the T/O. But prior build-up of flexibility will make this attack occur earlier and better planned and executed. This is the phenomenon of graduated approach through amplification and response to weak signals.

**Management of Surprising Changes: Application of the Weak Signal Approach**

The next goal of this paper is to construct a practical method using such graduated response by first exploring the range of weak signals that can be typically expected from a strategic discontinuity. This requires strategic thinking and creativity with an aptitude for keeping the 'ears on the ground'.

**State of knowledge and Detection of Weak Signals**

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**Table 3.1: State of knowledge under discontinuity**

Information content	State of Knowledge				
	(1) Sense of T/O	(2) Source of T/O	(3) Concrete	(4) Response concrete	(5) Outcome
Conviction that discontinuities are impending	Yes	Yes	Yes	Yes	Yes
Area/organisation identified which is the source of discontinuity	No	Yes	Yes	Yes	Yes
Characteristics of threat, nature of impact, general gravity and timing of impact	No	No	Yes	Yes	Yes
Response identified: timing, action programmes, budgets	No	No		Yes	Yes
Profit impact and consequences of response are computable	No	No	No		Yes

There are five states of knowledge as illustrated in box 3.1. Level 5 is the highest state of knowledge while level 1 is the lowest. At level 5, exact information necessary for strategic planning is available. Here, enough is known to compute both probable profit impact of the discontinuity and the profit impact of the response. At the other extreme (level 1), is the

highest state of ignorance that can be of any use to strategic management. All that is known here is that some threat/opportunity will undoubtedly arise, but their shape, nature and sources are not yet known.

Having experienced shocks of change in the recent past, managers are convinced that new shocks are coming but they cannot identify the source at this level. As the state of knowledge increases to higher levels, matters are gradually improved in terms of precise decisions to take, the timing of the discontinuity and the anticipated profit impact. This analysis is illustrated in box 3.1.

**Box 3.1:**

**For example, in the 1940's, it was generally recognised by physicists that solid-state physics had great potential for the electronic industry- but the invention of the specific discontinuity, the transistor was still several years off (Ansof and McDonnel, 1990). The source of the T/O was clear (state 2) but not the T/O itself. When the transistor was finally invented, the state of knowledge was raised to state 3, but the ramifications of the invention were still unclear and so were the appropriate defensive and aggressive approaches that were to be made by the prospective firms to benefit from the breakthroughs. When these firms developed and made initial responses and knowledge was raised to state 4, the eventual investments and profits were not visible. Knowledge of the crystal yields raised the state of knowledge to level 5 with knowledge of manufacturing processes sufficient enough to make reasonable predictions of the ultimate technology and its profitability. By this time, the leaders were firmly entrenched and those who originally held back had to pay a high cost of entry into the industry.**

When the remaining time at level 5 is sufficient for a calculated response, this is a strong signal problem. When the time at level 5 is insufficient for a calculated response, this is a weak signal problem. With weak signal approach, instead of making a definite commitment to a course of action, management must choose actions which prepare the organisation for the ultimate response while at the same time, keeping his options open.

Conversion to weak signals approach requires individuals responsible for identifying issues to begin to listen with their 'ears close to the ground' for early warning of T/O. For example, in the environment of the 1990's, potential surprise sources included explosive tension in the middle east, instability of the global military 'balance of error', chronic unemployment, relations between the 'have' (developed) and 'have not' (developing) nations, and

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consequences of limited growth. On the industry-wise basis, weak signals of the 1990's were the future of banks as financial institutions, impact of CAD/CAM revolution on the automobile industry and that of microprocessor technology on the electronics industry.

Detection of weak signals requires sensitivity and expertise (Ansof, 1985). This necessitates 'casting wide' the detection net, and involvement of numerous people in addition to the corporate staff charged with issue management. One source of weak signal detectors is the socio-political/economic/technological experts outside the organisation. These are advisory groups used to provide weak signal inputs on a systematic basis. Other sources of detectors includes managers and workers in the interface functions (marketing, purchasing, legal PR's, R & D) while a source of internal weak signals includes staff individuals with broad contacts inside the organisation, notably, personnel and management developers, organisational and strategic planners (Renfro, 1987; Wartick, 1988; Ansof and McDonnell, 1990).

Ansof and McDonnell provide a methodology for estimating impact and following are its highlights:

- > Recognise the state of knowledge about a trend or event and provide some latitude in accuracy of the estimates. Apply judgemental or expert opinion techniques, e.g. the Delphi technique, at lower states of knowledge. At higher knowledge states, apply quantitative forecasting and modelling techniques.

Table 9 illustrates a format for estimating impact using a simple case of a four-SBA firm and one important signal per SBA.

Each trend is placed in a column according to the present state of knowledge and further described along three dimensions:

- > Whether it is a threat or an opportunity
- > The time remaining (from high probable to low probable - a 20 range)
- > The range of impact on the profits presently derived from the SBA (from high probable to low probable).

In each box, the responses are: (i) identify as T/O, (ii) Time of probable impact, (iii) Fraction of profit affected.

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**Table 3.2: T/O weak signal analysis**

Strategic Business Area	% of profits	State of Knowledge				
		(1) Sense	(2) Source	(3) T/O concrete	(4) Response concrete	(5) Outcome concrete
SBA <sub>1</sub>				Threat -3 years 0.15-0.40		
SBA <sub>2</sub>			T/O 10-15 years			
SBA <sub>3</sub>					Opportunity 3 years 0.25-0.30	
SBA <sub>4</sub>		Opportunity 7 years 0.08-0.18				

The range of timing and profit impact estimates becomes wider as the state of knowledge decreases (level of ignorance increases). Thus, the impact on SBA<sub>2</sub>, which is 10-15 years off, may turn either into a threat or an opportunity, but it is clear that the impact is likely to be very serious. The profit estimate of SBA<sub>3</sub> can be estimated within a narrow range of both accuracy and impact. Management responses are categorized into weak and strong. These include responses that change the organisation's relationship with the environment and those that change the capability of the organisation. For each group, there are three progressively stronger strategies: one that enhances the organisation's awareness and understanding, one that increases the organisation's flexibility and one that directly attacks the threat or exploits the opportunity as illustrated in table 3.3.

**Table 3.3: Alternative response strategies**

Domain of response	Response strategies		
	Direct response	Flexibility	Awareness
<b>Relationship to the environment</b>	External action (strategic planning and implementation)	External flexibility	Environmental awareness
<b>Internal Capability</b>	Internal readiness (capability planning and implementation)		

The strongest external strategy mounts a direct attack counteraction against identified T/O by selecting the type of counteraction, preparing programmes and budgets, and budget implementation. Thus the threat is averted or opportunity is enhanced for potential future profit.

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The degree of environmental awareness is provided through economic forecasting, sales forecasting, and competitive behaviour analysis. All these are extrapolative and based on smooth extension of the past into the future, hence provide no information about strategic discontinuities, hence, the need for other strategic forecasting measures notably environmental monitoring, technological forecasting, socio-political forecasting and T/O analysis (Ansof, 1985).

External direct strategic action must be supported by the development of appropriate internal readiness. Flexibility strategies are internal: involving configuring resources and capabilities of the organisation to permit quick and efficient repositioning of new products and markets and flexibility of managers including psychological readiness, environmental awareness and ability to resolve unfamiliar issues. It also encompasses the creativity of managers and flexible response to change. External awareness involves diversification of the organisations in the environment in a way that that positions it to exploit major opportunities arising in turbulent SBAs and minimises the impact of catastrophic reversals which may occur in an SBA. The latter requires level 5 information input. At states lower than 2, there is need to balance technological, political, business and geographical risk planning and implementation and this can be achieved by the application of special-purpose capital-intensive investments (Ansof and McDonnel, 1990).

**Table 3.4: ranges of response strategies**

Response strategy	State of knowledge				
	(1) Sense of T/O	(2) Source of T/O	(3) T/O concrete	(4) Response concrete	(5) Outcome concrete
Self awareness					
Environmental awareness					
Internal flexibility					
External flexibility					
Internal readiness					
Direct action					

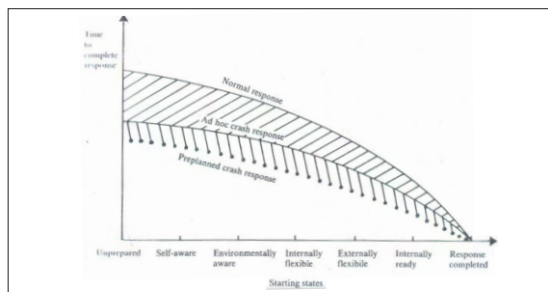
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The shaded areas represent areas of feasible response. The partly shaded boxes mean that only some of the particular type of measures becomes feasible at the particular state of knowledge. All of the internal flexibility, all of the environmental awareness and a substantial part of the external flexibility can be put in place before the threat becomes clear and definite. Thus, electronic component manufacturers could have attained high state of readiness for coping with the transistor before it was invented (Ansof and McDonnel, 1990). For direct response, it is necessary to have a good idea of the T/O that is proposed to be attacked but this also requires a sufficiently clear idea of the origin and shape of the threat is adequate to launch substantial percentage of internal readiness measures, including acquisition of necessary technological production, marketing skills, new product development and development of supply sources.

Direct external action need not, and practically does not, await information that makes possible reliable cash and profit calculations. This differentiates entrepreneurial risk takers from cautious followers. Adventurous firms typically launch their entry into a new industry at level 4, before the technology, market and competition are well enough defined to permit such calculations. More conservative firms will prefer to wait on the side-lines until the 'ball game' is better defined.

Figure 3.1 further illustrates the dynamics of response, and provides underpinning for the foregoing discussion.



**Figure 3.1: Dynamics of response (Source: Ansof and McDonnel, 1990)**

The vertical scale shows the time needed for the organisation to complete the response after eliminating or stabilizing operating losses or making viable the identified opportunity. The horizontal scale limits the states from which the organisation may launch its response. From the curve, it can be deduced that the better prepared the firm at start, the less time needed to complete the response. The upper curve traces the normal response in which the T/O is

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treated routinely by existing processes, structures, systems and procedures. The lower solid curve, the ad hoc crash response, shows the time savings that can be effected when everything possible is done to speed up the response: normal rules and procedures are suspended, other priorities are pushed into the background, organisational lines are crossed, activities are duplicated and overtime is incurred.

Preplanned crisis response is effected to lower response time further: investment in a training programme in crisis management is worthwhile in the same way a fire-fighting organisation invests in capability to fight unexpected type of fires (Ansof and McDonnel, 1990). The envelope of response times defined by the three curves differs from organisation to organisation and from one discontinuity to another and will depend on size, complexity, and rigidity of organisational structures as well as the nature of the T/O ((Weick, 1988). Other factors affecting the size of the response time envelope include size of the discontinuity and the degree of unfamiliarity, both of which affect the response effort (Ansof and McDonnel, 1990).

Next, there is need for diagnosing preparedness to elucidate the level of effort expended in effecting the response for each SBA and this is illustrated in table 3.5.

**Table 3.5: Preparedness Diagnosis**

SBA <sub>1</sub>	Feasibility	Status	Time (yrs)	Effort Expended		
				Crash Cost (x current profit)	Normal Cost (x current profit)	
Self-awareness	F		3		6	
Environmental awareness	F		1		2	
Internal flexibility	F		2		4	
External flexibility	F		4		8	
Internal readiness	F (partial)		2		4	
Direct action	I		2		4	
Complete response			4.0		8	1.0

Adapted from Ansof and McDonnel (1990)



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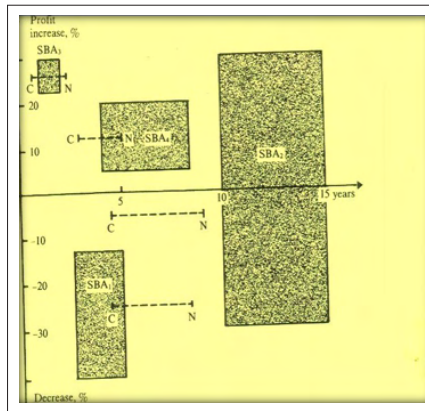
Five or six response strategies are feasible in this advanced stage (single, clearly visible T/O, concrete stage, SBA1). This is recorded as feasible (F) or infeasible (I). Next we diagnose the state of readiness in each of the feasible strategies. Let 100% represent the maximum that can be done to respond to the T/O in the current state of knowledge (ignorance). The entry is an estimate of the current readiness in each of the categories. The roughly 15% of self-awareness suggests that while the threat is concrete enough, the organisation has done relatively little to determine the usefulness of its own capability for dealing with the threat. This might have been the case for example, in the vacuum tube firms which, having learnt about the existence of the transistor made no effort to analyse the applicability of its technology and organisation to the emerging transistor industry. On the other hand, the organisation appears to be well advanced in understanding the market potential, competition and future of the transistor. The low rating of internal flexibility is due to the organisation's dependence on highly specialized resources/capabilities. The low rating of the external flexibility is due to overdependence of the firm's profits on the single technology (e.g. the vacuum tube) with low adaptability to emerging and novel technologies.

Next, we estimate the time required to carry the state of response to 100% for each preparedness category. Both normal and crash times are estimated using expert judgement. The overall time of 4-8 years means the expected range of divesting from the technology (e.g. vacuum tube) or making a successful entry into the novel one (the transistor) or narrowing the scope to a market that will make the prevailing technology (vacuum tube) more profitable (focus).

Finally, we estimate the cost-effectiveness of the total response as a fraction of the percentage of the profits contributed by the SBA. Thus, a crash programme will cost 4 times the current contributed profit and to prevent loss of 0.15-0.40 of this profit annually, the organisation needs to amortise itself in 10 to 27 years. The cost-effectiveness is low implying the threat should be written off and allowed to run its course. The normal response costing 1.0 is much more cost-effective since the amortisation period is only 2.5 to 7 years. The decision to respond should not be based on the response cost alone, or on the amount of profit / loss or gain at stake, but on the return on the cost incurred (Ansof and McDonnell, 1990). The simple payback period can be used to measure this return but with better data, more accurate methods like internal rate of return, net present value or risk-adjusted discount rate, should be used. The selection of the counteraction in the range between normal and crash responses cannot be made independently of the timing of the T/O. A comparison must be made using the opportunity/vulnerability analysis shown in figure 3.2.

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**Figure 3.2: Opportunity/Vulnerability Profile (Source: Ansof and McDonnel, 1990)**

The respective shaded rectangles enclose regions of probable impact on the respective SBAs. Rectangles below the horizontal axis spell potential losses in profitability due to the threats, those above spell potential gains offered by the opportunities. The height of the rectangle spans the probable range of gain or loss while the base spans the probable times when the impact of the discontinuity reaches critical levels. The diagnosis is based on the T/O analysis. The horizontal dotted lines obtained from the readiness diagnosis spans the time of probable completion of successful response. Thus normal response for SBA3 would be late but the organisation can assure itself of capturing the opportunity through a crash programme. SBA2 is safe: normal response will capture the T/O provided the organisation continues to the development of the contingency (Ansof, 1985). SBA1 is in trouble since even a crash response may be late. SBA1 and SBA4 are expected to reach critical impact at the same time but because of the longer response time needed, SBA1 must be handled on an all-out crisis response basis while moderately urgent response suffices for SBA4. Only BSA2 seems to call for no immediate aggressive action. But the potential impact is so great that a vigorous monitoring programme should be spotlighted on trend development.

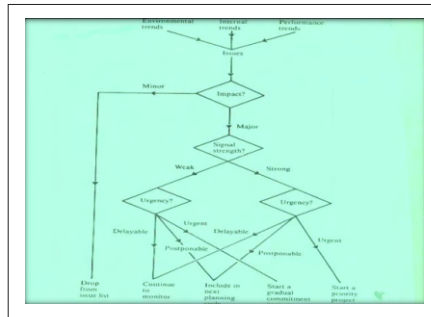
Strong signal management divides issues into four categories: no action, continue monitoring, delayable, and immediate action through priority projects (urgent) (Ansof and McDonnel, 1990).

Weak signal management adds the strategic learning or gradual commitment option under which the firm responds step-by-step as the issue progresses to higher states of knowledge. Thus, if the potential impact has been estimated as major, then the next question is whether the signal is strong or weak. In both cases, the next step is to evaluate the urgency. Delayable

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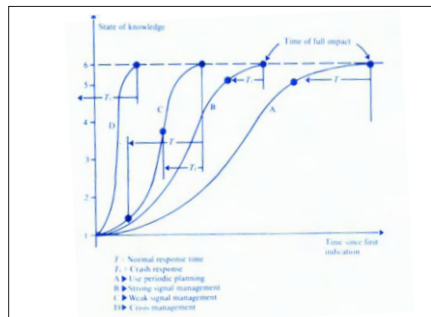
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and postponable issues lead to the same action priorities for both strong and weak signals. However, when the issue is urgent, strong signal issues trigger a priority project while the weak signal issues must be treated through a gradual commitment project.



**Figure 3.3 Priority Assignment in weak signal SIM (Source: Dutton et al., 1983)**

The times period required to complete response in the respective modes are normal response time (T) and issue management response time (T1). Choice of response depends on the speed with which a particular T/O develops in the environment (Ansof and McDonnel, 1990).



**Figure 3.4: Choosing the System (Source: Ansof, 1985; Ansof and McDonnel, 1990)**

In figure 3.4, the vertical scale is the state of information available about a T/O while the horizontal scale is the time which elapses since state 1 awareness has been reached about a T/O. T/O's develop at different speeds with D being the fastest and A the slowest. A arrives at level 5 state of knowledge and permits a normal response, thus, there is no need for an issue management system and the T/O can be handled by periodic planning and implementation systems. In B, the T/O arrives at level 5 too late to permit the use of periodic planning systems. The response will thus only be timely if strong signal issue management is used. C arrives at level 5 state of knowledge too late for strong signal issue management to be

applicable. Normal response would be started between knowledge levels 1 and 2 and issue response at 3.5. Thus, weak signal detection must be used. D is a T/O which is an unavoidable surprise; because even issue response would have to be started before the sense of the impending T/Os (level 1) is perceivable in the environment.

If  $\delta$  is the time remaining at level 5 to full impact (level 6) and F is the time from inception of T/O to full impact, then, if:

$T < \delta$  use only periodic planning;

$T > \delta$  and  $T_i < \delta$  use strong signal issue management;

$T_i > \delta < F$  use weak signal issue management;

$T_i > \delta$  use crisis management;

### **How Resistance to Strategic Change is managed**

#### **Behavioural Resistance Management**

Let  $\Delta C$  and  $\Delta P$  be the cultural and political disturbances implied by the change and let  $\Delta C + \Delta P T$  be the time over which the change is introduced, then behavioural resistance,

$$R_{\text{behavioural}} \propto \pm \frac{\Delta C + \Delta P}{\Delta T} \quad (\text{Ansof and McDonnel, 1990})$$

Behavioural resistance includes resistance by individual managers and resistance by groups of managers.

Individuals will resist strategic change when it makes them insecure under the following conditions:

- > When a manager is uncertain about the implications of the change
- > When a manager is called upon to take risks which are uncongenial to him/her
- > When s/he feels incompetent to perform in the new role defined by the change
- > When he feels he will lose face with his/he peers
- > When he is incapable and/or unwilling to learn new skills and behaviours (the difficulty of teaching new tricks to an 'old guard')

Individual resistance to strategic response to change arises from the threat of their position of power:

- > The manager expects his/her share in organizational rewards to be reduced as a result of the change

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- > S/he feels his/the change will diminish his/her position of influence in organizational decisions
- > S/he feels the change will diminish his/he control over organizational resources
- > S/he feels the change will diminish his/her personal prestige

All these reactions are because of the different behaviours of managers: some are personally insecure, some are prone to anxiety, some are proud, others less so. Some actively seek power and prestige while others are indifferent to the trappings of power. Some managers are born leaders and always want to influence policy decisions, some are content to follow, and some are set in their ways while others are open to change and are thus eager learners. Therefore, managers' behavioural resistance to change depends on their personality strengths and personal flexibility. Resistance will depend on the strength of the managers' convictions, their preparedness for self-defence, power drive and predisposition to learn and change.

Group resistance arises from both individual perceptions of members and:

- > Their commonality of behaviour about change
- > Establishment of norms and values that reward certain behaviours and punish others , for example, orientation towards novelty in organizational values
- > Development of consensus in information pertinent to their common tasks and those which are irrelevant , for example, the irrelevance of social and political phenomena in business organizations
- > Allegiance to the common culture and values of the group, which necessitates the group to jointly defend these against encroachment of influence of other cultures

Thus, groups:

- > Coalesce and act as power centres within the rest of the organization
- > Seek to accommodate power and influence
- > Defend their power positions

Group resistance against change depends on:

- > The extent to which the change threatens the power of the group
- > The extent to which the change violates accepted values and norms
- > Whether the change is based on information that is considered irrelevant by the group
- > If the change is based on a model of reality that differs from that held valid by the group

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There is thus need for moderating political resistance in proportion to:

- > Perceived nearness of a survival crisis
- > Level of negative loyalty that individuals and groups have for the organization

The strategic change managers should therefore: avert the change to positive support in proportion to:

- > The degree of performance improvement promised by the change, and
- > The level of positive loyalty within the organization.

The level of resistance to change is determined by:

- > The degree of discontinuity in the historical culture and power structure implied by the change
- > The length of period over which the change is introduced
- > The threats/insecurities/loss of prestige/loss of power implied by key individuals
- > The expected contribution by the change to the success/survival of the organization
- > The strength of positive/negative loyalty towards the organization felt by the participants
- > The strengths of the cultural and power drivers at the respective power centres.

A model for strategic response to effectively manage behavioural resistance to change has been suggested by a number of behavioural managers (e.g. Ansof, 1980a; Ansof and McDonnell, 1990; Coch and French, 1966) and following is a summary of the sequence that can be followed to realize effective management of behavioural resistance to change:

**Step one:** Build a launching platform in order to minimize start-up resistance, marshal a power base adequate to give momentum and continuity to the change, prepare a detailed plan for the change process by assigning responsibilities, resources, steps and interactions through which to implement the change and designing into the plan, the behavioural features which will optimize acceptance and support for the new strategies and capabilities

**Step two:** Diagnosing the nature of the change by deciding whether the change is singular and won't recur in the future or whether it is one in a series which will recur and represent an environmental shift to a new turbulence level. The change management should also determine the available time for effective response to the discontinuity and the extent of need of change in capability for the new strategy and the organizational units likely to be affected by the change

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**Step three:** Diagnose behaviours to determine the extent of political/cultural disturbance likely to occur in the affected units, the key individuals expected to support/resist the change and the reasons for their positions, the anticipated support/resistance by culturally/politically coherent groups and the relative importance of the individuals/groups to the success of the change

**Step four:** Build a supportive climate by eliminating misconceptions and exaggeration through clarification of the need for the change and the associated beneficial consequences towards organizational performance. The manager should also drive out fear and anxiety by clarifying to individuals and groups the positive/negative impact of the change on them and he/she should also use the political information from the foregoing mapping to build a pro-change power base as follows:

- > To the extent possible within available time, make changes in the power structure to increase the power behind the change
- > Form coalitions of the beneficiaries to the change and seek to enlist would-be 'lukewarm' supporters
- > Offer rewards for the support of change
- > Neutralize key points of potential resistance through side bargains, payments and for extremities, purging of managers

The manager should also endeavour to design behavioural features in the plan for change by:

- > Excluding from the process individuals and groups that will continue to resist the change
- > Including into decision-making, all individuals who will be involved in the implementation of the change and making them responsible for the corresponding decisions
- > Spreading the change over the longest possible time compatible with the urgency of the external T/O
- > Use the contagion approach if possible by starting with committed groups, rewarding and recognizing these groups and then spreading to other units after initial success
- > Not assuming managers have the knowledge and skills for solving novel issues, thus, building into plan the necessary education and training programmes to produce effective solutions and relieve fear and anxiety to enhance acceptance.

### **Managing Systemic Resistance**

Ansof and McDonnell (1990) assert that systemic resistance to change occurs when operating and strategic activities within the firm compete for organizational capacity whereby operations work tends to pre-empt strategic work. Ansof (1980b), Ansof (1985), Ansof & McDonnell (1990) and Taylor (1979) suggest the following framework for management of systemic resistance to change:

- > Provide a dedicated capacity for the change process by budgeting for it, assigning specific shares of individuals' time and programming capacity build-up
- > Integrating management development programmes into the change process preferably by preceding the change with a training course. Also the change manager should divide the change into distinct steps or modules and preface each module with a training experience.
- > As far as possible, use the sequence:

Behavioural development -----> Systemic build-up -----> Strategic action

Sketch the duration of change to the longest possible period which will ensure effective and timely response to the environmental T/O.

### **Alternative Approaches of Managing Discontinuous Change**

Ansof (1980c), Ansof and McDonnell (1990) and Buchanan (1974) provide four alternative approaches of managing discontinuous change, namely:

- > Coercive change management,
- > Adaptive change management'
- > Crisis management, and
- > Managed resistance ('Accordion') method.

### **Coercive Change Management**

This method follows a resistance-induction sequence and uses power to overcome resistance (Ansof and McDonnell, 1990). From the structure and procedural applications of this approach to change management, the following pitfalls are prevalent:

- > Failure to muster the amount of power necessary to assure the completion which may result into frustration of the change
- > Failure to anticipate sources and strengths of behavioural resistance which results into unanticipated confusion, costs and delays
- > Failure to attack root causes when resistance surfaces, resulting into 'paralysis by analysis'



- > Premature removal of the political support behind the change, resulting into regression of the change
  - > Failure to follow up implementation instructions issued to resisting units/individuals, resulting into sabotage of the change
  - > Failure to recognize the need for new competence and capacity, resulting into suppression of the change in favour of operating concerns, low quality of strategic decisions and ineffective implementation.
- Ansof and McDonnell (1990) provide the following approaches to managing these pitfalls:
- > Performing behavioural diagnosis before launching the change in order to identify potential sources of cultural and political resistance/support
  - > Building the necessary political platform for change and mustering enough power behind it to assure successful completion
  - > Monitoring the process during implementation, for imminent signs of resistance and dealing with them before they erupt into actual resistance
  - > Turning attention to capability/capacity after implementation, and continuing to apply power until the new strategy and capability match.

### **Adaptive Change Management**

This approach arises from 'organic adaptation', which is unmanaged from the top and usually occurs in response to successive adaptation through trial and error (Ansof, 1980c; Ansof and McDonnell, 1990). This approach tends to resolve conflicts in power and resistance through compromises, bargains and power shifts (Taylor, 1979). The introduction of the strategic change is effected through a series of incremental steps spread over time and is called Adaptive Change Management. The approach is slow but has the virtue of minimizing the level of resistance at any given time (Ansof and McDonnell, 1990). It is applicable when little power is available to the proponent of strategic change.

### **Crisis Management**

When a change appears to imperil the firm's survival and places the firm under severe time pressures, the firm is said to be confronted by a crisis (Mitroff et al., 1987; Crane, 1987; Beaudoin, 1988; Weick, 1988; Ansof and McDonnell, 1990). Here, behavioural resistance is replaced by individual and group support as they all work together to ensure the firm gets out of the crisis as soon as possible. The approach by strategic managers under the foregoing circumstances is to act brilliantly enough to prevent panic and generate a rapid and effective response. As the firm emerges from the crisis, management must anticipate and counteract

premature revival of resistance which usually accompanies early signs of recovery (Ansof and McDonnell, 1990). Thus, managers who are foresighted enough to perceive early signs of a crisis must:

- > Make a determined effort to convince others of the crisis and launch an anticipatory response
- > Resign themselves to the inevitability of the crisis and prepare to play the saviour role when crisis strikes. They must also trigger off an early artificial crisis and demonstrate the prevention of an external enemy who threatens the survival of the organization. This tactic is common in political leadership

The above tactics are expected to drastically reduce resistance, engender support of the solution and enhance the chance of successful recovery from the crisis.

### **Managed Resistance ('Accordion') Method**

This is intermediate between the coercive and adaptive approaches to strategic change management (Ansof, 1985; Ansof and McDonnell, 1990). It is more radical than the adaptive method as it employs reasonable power but not to the same extent as in coercive change management.

It thus oscillates between the adaptive (no power) and the coercive approach (extreme power) and tends to the former when the urgency of response is low and to the latter when urgency of response is high. Ansof and McDonnell called this the 'Accordion' approach due to the high level of flexibility or stretchability involved. This approach is useful under the following conditions:

- > There is moderate urgency in the discontinuity: There is more time than necessary for coercive methods, but not enough time for adaptive methods. Thus, as urgency increases, it tends to the coercive extreme and as urgency decreases, it tends to the adaptive extreme.
- > It uses the modular approaches: the planning process is subdivided into modules or steps and at the end of each module, change implementation projects are launched. It is thus a graduated approach and applies systematic methods on a step-by-step basis to enhance effective implementation of the strategic response to change.
- > It uses parallel planning and implementation: the implementation process commences as soon as a particular stage of the response planning is accomplished but does not wait until the planning process is completed, as with other approaches which apply sequential methods

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- > It has high prospects of controlling and minimizing resistance by building a launching platform, using the change motivating sequence with each module, developing implementability during the planning process and controlling resistance during the change implementation process.

The 'accordion' approach thus tailors or customizes the firm's response to the external timing imperatives and internal power realities (Buchanan, 1974; Ansof and McDonnel, 1990), However, it is more complex than either of the extreme approaches. It also requires implementers to be the planners due to the parallel nature of planning and implementation and this enhances acceptance. However, external assistance may be sought from consultants in order to supply analysis tools, train managers, help monitor the process, and play the 'devil's advocate' (Ansof and McDonnel, 1990). Table 4.1 provides a comparison of the four approaches.

**Table 4.1 Comparison of the change methods**

Method	Applicability	Merits	Demerits
Coercive	High urgency	High Speed of adoption	High resistance
Adaptive	Low urgency	Low resistance	Slow process
Crisis	Survival threat	Low resistance	<ul style="list-style-type: none"> <li>• Extreme time pressure</li> <li>• Failure risk</li> </ul>
Managed Resistance	<ul style="list-style-type: none"> <li>• Medium urgency</li> <li>• Recurrent discontinuity</li> </ul>	<ul style="list-style-type: none"> <li>• Low resistance</li> <li>• Tailored to time</li> <li>• Comprehensive capability change</li> </ul>	High complexity

Choice of strategic change management method

- > Choice of strategic change management method Use strategic posture analysis to determine the gap between the organization's management capability and the capability needed to introduce and support the change
- > Taking into account the speed of development of the change and probable competitive dynamics, estimate the time to impact,  $t_i$ , for a timely response. For example, if the change is an opportunity, then  $t_i$  depends on whether the firm is a market leader or follower
- > Make power and resistance diagnoses to determine the maximum power base,  $P_{max}$  and the minimum resistance,  $R_{min}$ , to be overcome after platform building
- > Estimate the time,  $t_c$ , needed for response. Estimate the time,  $t_a$ , needed for adaptive response.
- > Compare the power base,  $P_{max}$ , to the minimum resistance,  $R_{min}$ , and decide whether the available power is sufficient to push the change through the firm using the adaptive method.

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- > If the power is insufficient and failure to introduce change will trigger a crisis, one or more preparatory approaches for crisis management should be taken
- > If the power is insufficient but the change is likely not to trigger a crisis, continue building support until it reaches the minimum necessary level to assure pushing the change through the organization
- > If  $P_{\max}$  is adequate, estimate the urgency from the model:

$$\text{Urgency: } \alpha \frac{1}{t_i - t_c}$$

- > Choose the response strategies according to the following decision rules:
  - (a) If  $t_i > t_a$  use the adaptive method
  - (b) If  $t_a > t_c$  use the accordion or managed resistance method
  - (c)  $t_i \cong t_c$  use the coercive method
  - (d)  $t_a < t_c$  prepare for a crisis

## Conclusions

The paper has illustrated that when threats/opportunities become too high for periodic planning, strong signal issue management should be added and when this becomes too slow, it should be replaced by weak signal issue management. This approach will among others, enable timely anticipation of new developments and provide response to problems arising from any source: political, economic, social and technological.

The paper has also underscored the levels of aggressiveness needed to pursue timely response to strategic change. It has emphasized that in the pursuit for responses to strategic change, there are two kinds of resistances which must be overcome: behavioural and systemic resistance. Behavioural resistance arises from individual mind-set due to fear of the unanticipated impact of the change on the power and security of individual territories in the organization as well as group dynamics. Systemic resistance arises mainly due to conflict in allocating organizational resources and capabilities towards strategic and operational activities. Operational allocations usually take precedence mainly due to familiarity of the expected monetary gains from their pursuit using past experience and this is likely to deprive strategic budgets. Management of resistance to strategic change requires a rational approach for managing the internal power politics and cultural orientations as well as optimal rationalization of resources between operational and strategic activities. This depends on the management style (for example, coercive response for example, may be the preferred option

by authoritarians), level of uncertainty and urgency of response. The risk propensity of the manager will also have an influence on the kind of approach preferred, thus, entrepreneurial orientation for timely exploitation of emerging breakthroughs.

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# 15. ICT-Enabled SMEs: The Case of Kenya

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## **Abstract**

*It has long been acknowledged in the literature that Information and Communication Technologies (ICTs) play a strategic role in the growth and competitiveness of Small & Medium Enterprises (SMEs). The integration of ICTs in business processes and infrastructure development has catalysed production processes and enhanced efficiencies in service delivery and customer care. At a macro level, many studies have demonstrated the importance of ICTs in facilitating both business growth and economic development. Moreover, SMEs have become key sources of employment and wealth creation in many countries including developing ones. In Kenya, ICTs have been found to play a major role in the growth and development of SMEs including in their transition from small to medium to large enterprises. This study has attempted to examine ICT-related and other challenges facing the MSE fraternity in Kenya and at their potential solutions. The study has concluded that the challenges facing SMEs are many, but that they can be adequately addressed by a policy and regulatory framework that focuses on improving the business environment as it relates to access to technology, finance, education, and growth and development support. Business incubation is posited as a possible intervention mechanism that can help address the entire spectrum of the SME business environment challenges. Business incubation, like any other method of intervention, however, can only be effective in the face of enabling policies and regulations. Brazil is discussed as a case study of a country where research has informed policy that has in turn informed practice with tangible successful results.*

**Keywords:** *ICT, SME, technology, incubation, financing, support*

## **Introduction**

In many developing countries, SMEs account for a significant share of economic production and employment and are therefore directly associated with poverty eradication and wealth creation. In today's global economy, the importance of technology, especially ICTs, as a strategic resource for competitiveness and productivity in business is no longer an issue for debate. This is also true of the SME sector. ICT is acknowledged to play an important role in the growth of SMEs by providing foundations for the evolution of operations that catapult them from micro, to small, to medium, to large enterprises and by contributing directly to profitability. But whether SMEs are able to optimize their utilization of ICTs remains an issue for debate. This is an important debate in light of the value addition of ICTs to the SME. There are a great number of models, standards, and techniques existing in the ICT arena which mostly confuse SMEs, who are frequently faced with the challenges of getting the most out of their technology platforms in the face of not only limited resources but also of limited access to knowledge and implementation skills.

The basic questions are whether the use of ICTs (as a production technology, as an information processing technology, and as an information and communication technology) can help SMEs cope with challenges in their environments and whether SMEs are using ICTs optimally. Challenges in the SME environment are many, and include the globalization of production and the shift in the importance of the various determinants of competitiveness such as speed to market, service delivery, customer care, and economies of scale, all of which can be seen as business processes poised for facilitation by ICTs. ICT as a production technology will, for example, enhance the productive capacity of the SME. As an information processing technology, ICT will enhance both service delivery and customer care. As an information and communication technology, ICTs will enhance not only the internal operations of the SME but also its market reach and efficiency. ICTs are at the core of the demand and supply chains of many SMEs. For some, ICT is an enabling tool while for others it may be at the core of their very business. Even for those whose core business it is, however, it still remains an enabling tool. According to a study by Matambalya and Wolf (2001), a complex system of factors encompassing environmental, technical, and human play a role in the successful deployment of ICTs for the growth of SMEs. Both inside and outside of core ICT products and services, there is need for a methodological approach to supporting SMEs in order to facilitate management of their ICT infrastructures and services. The current study looks at some contravening factors, discusses their possible effects on the growth of SMEs, and proposes some possible solutions.



### **Impact of ICT on SMEs**

Through the rapid spread of ICTs and the ever decreasing costs of communication, markets in different parts of the world have become more integrated. The benefits of integrated markets include removal of transactions costs, opening up of competition, and improved security of supply. These allow SMEs to participate in platforms and to compete in and supply to markets that were otherwise out of their reach. In Kenya, there has been a growing concern about the impact of technological change on the work of SMEs since the mid-1990s. For example, it has been observed that many SMEs are unaware of new technologies and that for those that are aware the technologies are not locally available, not affordable, or not suited to local conditions. Outpaced and under-resourced, these SMEs are not able to keep up with technological changes that are due to obsolete technology, thereby impairing their ability to grow sustainably. Then there is the issue of the digital divide between rural and urban Kenya. With no power supply in much of rural Kenya, it is next to impossible to have Internet connectivity and access to information and networks, components of ICTs that are core to their operations and key to their success (Wanjohi and Mugure (2008). In a sample survey of 300 SMEs in Kenya and Tanzania, Matambalya and Wolf (2001) found that SMEs are an important factor in the growth and development of the two East African economies of Kenya and Tanzania, especially with respect to employment creation. The authors were able to show that computer applications are considered by 88% of users to considerably increase management efficiency, by 76% of users to considerably increase competitiveness, and that those enterprises that use different forms of ICT rate their effects mostly positively. Mobile phones were found to contribute significantly to regional market expansion by most SMEs, followed by fixed phones and faxes. For all economic sectors in both Kenya and Tanzania, the average size of enterprises was found to be generally bigger for users of more advanced ICTs. The average years of schooling also seemed to increase with the use of advanced ICTs with only small differences between sectors. With respect to exports, the association with ICT was positive and similar for all sectors. The use of fax machines that gives managers access to formal information had a significant positive relationship with productivity in both countries.

### **Challenges faced by SMEs**

In spite of its substantial contribution to economic growth and development, the SME sector in Kenya still faces many challenges that affect its growth, expansion, and ability to feed into sustainable socio-economic development. A study by Wanjohi (2010) noted that some of the challenges facing SMEs in Kenya include lack of managerial training and experience, inadequate education and skills, lack of credit, poor national policy and regulatory environment, technological change, poor infrastructure, and scanty market information. Many SME owner managers lack managerial training and experience. As an example, the

typical owner manager develops his own approach to management through a process of trial and error. As a result, his management style is likely to be more intuitive than analytical, more concerned with day-to-day operations than with long-term issues, and more opportunistic than strategic in its approach. These assertions are supported by an earlier study by Hill (1987) which concluded that although this SME approach is the key strength at the start-up stage of the enterprise because it provides the necessary creativity, it often presents problems when complex decisions have to be made. As a consequence, SME owner managers are ill prepared for changes in the business environment as well as in technology. These findings are supported by the King and McGrath (2002) study which concluded that a majority of SME owner managers are not well equipped to carry out managerial routines for their enterprises.

Lack of access to credit has been indicated almost universally as a key problem for SMEs. According to Wanjohi (2010), lack of access to credit affects technology choices by limiting the number of alternatives that can be considered by an SME. As a result, many SMEs may use inappropriate technology because it is the only one they can afford.

Even where credit is available, however, the entrepreneur may lack freedom of choice because the lending conditions may force the purchase of heavy, immovable equipment that can serve as collateral for the loan as opposed to what is really needed by the entrepreneur. In some cases, under developed capital markets may force entrepreneurs to either rely on self-financing or borrow from friends or relatives, all of which lack long-term sustainability. Wanjohi and Mugure (2008) found that lack of access to long-term credit often forces SMEs to rely on short term finance with high costs of credit, and with high bank charges and fees.

Poor infrastructure poses a major challenge to SMEs and infringe upon their ability to produce and deliver goods and services. These include poor road and rail systems, inadequate power and water supply, and inadequate internet connectivity. According to proceedings of the National Investment Conference (November 2003), Kenya still stands in need of better infrastructure. Today, Kenya's infrastructural issues remain largely unresolved.

Available market information is scanty at best. Lack of market information poses a great challenge to SMEs. Despite the vast amount of trade-related information available online and the possibility of accessing national and international databases, many Kenyan SMEs continue to rely heavily on private or even physical contacts for market related information. According to Muteti (2005), this is due to two primary factors: inability to interpret statistical data and poor connectivity, especially in rural areas.

The Ngahu (2000) study argues that although it is possible to develop policies designed to improve the circumstances of SMEs, it may be more feasible to support the development of technologies compatible with the SMEs' circumstances. For example, SMEs are said to face the "liability of smallness". Because of their size and resource limitations, they are unable to develop new technologies or to make vital changes in existing ones. This notwithstanding, however, there is still evidence that SMEs have the potential to initiate minor technological innovations to suit their circumstances. For SMEs to fully develop and use this potential, they need specific policy measures that ensure that technology services and infrastructure are provided. Further, research and development institutions that are publicly funded should be encouraged to target the technology needs of SMEs. The study recommends that policies should aim to encourage and promote development of local technologies, with emphasis on promotion of the local tool industry to reduce reliance on imports.

### **National Policy and Regulatory Environment**

The legal and economic framework in which enterprises operate is crucial to their performance. In the literature on enterprise development, it has often been argued that the legal frameworks of many countries serve as barriers against enterprise development. King and McGrath (2002) have argued, for example, that in many cases across Africa, the reduction of open hostility has been more important for SMEs than any positive programme of engagement from the state. Policy should promote the development of technologies appropriate for SMEs and encourage development of assistance programmes to facilitate SMEs' access to resources, information, training, and technology. National policy and the regulatory environment have been found to have an important impact on technology decisions at the enterprise level (USAID, 1991), thereby affecting the business environment. The business environment is among key factors that affect the growth of SMEs. Wanjohi and Mugure (2008) found that unpredictable government policies coupled with 'grand corruption,' and high taxation rates, continue to pose great threats, not just to the sustainability of SMEs but to the Kenyan economy at large.

According to Karanja (2010), a survey of 2,035 SMEs in early 2010 by Strategic Public Relations and Research showed that 58% of Kenyan SMEs feel that the business, social, and political environment does not favor SME growth and is only adequate for basic survival. Specific challenges reported by these SMEs include highly priced inputs, high cost of doing business, stiff competition from larger companies, and unavailability of credit. Lack of information on where to access professional and financial services was also reported as a major impediment to growth. Asked whether bigger businesses should come to their aid, 71% of those surveyed agreed, while 29% did not. Many felt that assistance should come in

the form of provision of start-up friendly loans to SMEs as well as access to credit facilities and training. Membership in and representation by national level organizations was also found to be a major factor in the SMEs' inability to grow and prosper. The survey noted that SMEs were too poorly organized to effectively push for their agenda to be addressed at the national level. The survey report indicated that 75% of SMEs were not represented by any national body through a membership or association group. Political instability also emerged in the survey as a major deterrent to growth of the SME sector. It was observed that many businesses had to shut down completely following the post-election violence of 2007-2008, while others were still struggling to remain afloat. Sixty percent (60%) of those surveyed said they feared a reoccurrence of the post-election violence in 2012. Twenty seven percent (27%) expressed concerns that the government did not seem to be doing enough to prevent the repeat of a similar outcome.

According to Wanjohi (2010), because SMEs have the potential to transform the economy of a crippling nation, every effort should be made to bolster their growth and development. In that study, the author attempted to develop a list of solutions for Kenya's SME: For one, policies should aim to encourage and promote the development of local technologies. Secondly, the problem of access to information may be attributed to the inadequacy of SME support institutions, which points to the need for a supportive policy environment to encourage the establishment of documentation centres and information networks to provide information to SMEs at affordable costs. Thirdly, the government should come up with training centres for training managerial and technical courses for the SME entrepreneurs. There should also be available business information centres. Fourthly, government should come up with proper regulatory policies that are SME friendly since much of what is already available tend to frustrate the effort of a new entrepreneur. The author asserts that policies already in place tend to cater more for the well-established business than for SMEs. Since a large majority of SMEs lack finance, governments should establish SMEs friendly financing institutions and loaning systems that include low interests rates to ensure the continuity of these businesses.

### **Kenya's ICT SME Landscape**

There is sufficient evidence to demonstrate that ICTs, in its many forms, have made major impact in the growth and development of SMEs. According to an article in the CIO magazine by Wanjiku (October 6, 2008), technology companies won accolades at the inaugural awards for Kenya's top 100 SMEs, showing a shift in emphasis away from the country's traditional agricultural and manufacturing sectors. Cellulant Kenya, a mobile technology firm, won top honours as the best-run company, followed by Techbiz, a software

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development company, and Dimension Data, an ICT infrastructure solutions provider. That article pointed out that according to available statistics, SMEs provide over 80% of Kenya's jobs and over 75% of the country's wealth, showing a slow but sure change from the previously recognized trend where the country's main economic drivers were agriculture-related companies.

A study by Wanjohi (2011) looked at the main opportunities open for the growth of SMEs in Kenya and found that with the advent of ICTs, Kenya is slowly and steadily embracing ICTs as is evident in the major cities and towns by the rate at which cyber cafés and other ICT businesses are springing up. Even then, the ICT sector as an economic industry ranks only third at 44% behind construction at 61% and services at 46%, according to a survey by KPMG Kenya (Juma, 2010).

According to a Business Daily article by Kinyanjui (July 20, 2009), an annual SME survey by KPMG determined that ICT SMEs have had the highest rate of graduation from SME to corporate status of all other sectors combined by passing the Sh1 Billion revenues threshold, pushing them out of the SME league. The reported survey ranked Kenya's SMEs with a turnover of between Sh70 Million and Sh1 Billion based on profitability, liquidity, return on equity and level of indebtedness, among other performance indicators. In 2009 the four SMEs that braved the turbulent economic environment after the political skirmishes to make it to the Top 100 roll of honour and to enter Kenya's top corporate league were Dimension Data, Cellulant, Jetlink and InterConsumer. Kenya's telecommunications sector growth had been particularly robust and had aided the graduation of Dimension Data and Cellulant, both ICT SMEs, to the top league.

The other two companies, InterConsumer and Jetlink, are in the fast-moving consumer goods and transport sectors respectively. Dimension Data had launched its operations in Kenya three years prior, with acquisition by a South African firm of the majority stake in ICL Kenya, and had grown its revenues by a margin of 8.1% to stand at Sh1.95 Billion. Moreover, the KPMG survey report stated explicitly that the list of companies that passed the Sh1 Billion mark consisted mainly of players in the ICT sector, pointing to their robustness despite the steep decline in economic activity that saw economic growth plummet from 7.1% in 2007 to 1.5% in 2008. The study pointed out further that graduation of SMEs in the ICT sector into the top corporate league despite the hostile economic environment was in line with findings of the year's Economic Survey, which indicated that ICT was among the few facets of the Kenyan economy that recorded significant growth in 2008.

### **SME Support Mechanisms – Business Incubation**

In many more competitive economies than Kenya, business incubation is often listed among tools that have been used successfully in creating new entrepreneurs and new businesses by dramatically reducing the high early stage failure rate of small businesses. Business incubation programs help develop new entrepreneurs through support mechanisms that enable them to start and grow businesses to become sustainable. Business incubators within such programs serve as places where entrepreneurs receive value-added support and access to critical tools, information, education, contacts, capital, and other resources that may otherwise be unaffordable, inaccessible, or unknown to the supported entrepreneurs but that are able to fill gaps that have been identified in SME support needs. These gaps include managerial and other education and skills development trainings, lobbying for better national policy and regulatory environment, technological capacity building, infrastructure such as shared facilities, market information, capacity building in entrepreneurship, business counselling, bookkeeping, back office support services, better linkages between the academic community and industry, between SMEs and large corporations, and between local SMEs and foreign companies such as multinationals, credit and increased innovative approaches to SME finance, and better and quicker commercialization of innovations. Well-structured business incubators are known to provide links to industry, support services that enhance and develop the business, technological advice, technical assistance, intellectual property protection, financial resources for research and development (R&D), initial marketing expenses, access to potential private investors and strategic partners, and upgrades in skills and techniques. Business incubators target small entrepreneurs that want to grow, new graduates from tertiary institutions with entrepreneurial ambitions, and anyone else who would like to develop ideas, products, and services to full commercialization. Business incubation research shows that independent (non-incubated) new and start-up businesses have a survival rate of less than 50% five years on, while incubated new and start-up businesses have a survival rate of greater than 87% five years on. Although there is what is ideal for a business incubation program, different business incubators offer different support services to their clientele in line with each one's interests and capacity, often determined by its own sources of support. According to research by the National Business Incubation Association (NBIA), a large majority of business incubators (about 80%) are government funded while the remaining 20% are either privately or development agency funded.

### **Business Incubation in Kenya**

In Kenya, there have been several business incubation initiatives with different levels of success. The majority of Kenyan business incubators are privately owned and operated. These include the Kenya Kountry Business Incubator (KeKoBI), and the IFC's Small



Business Support Centre Business Incubator. There are several fully government supported initiatives, which include the Kenya Industrial Estate (KIE), the Kenya Industrial Research and Development Institute (KIRDI) Business Incubator, and the Export Processing Zone Authority (EPZA) Business Incubator. The primary challenge of these business incubation initiatives is lack of a regulatory framework. The Business Incubation Association of Kenya (BIAK) is a business incubator membership organization with the primary focus of building the capacity of business incubators in the country.

### **Discussions**

There is no doubt that ICTs have contributed positively to SME growth, not only in Kenya, but throughout the globe, and that the growth of SMEs has had positive contributions to economic development. In Kenya, however, the business environment has been hostile to SME growth due to a number of factors including a poor policy and regulatory environment, poor financial systems, technological challenges, and lack of development support services – which include education and training. With regard to development support services, for example, the King and McGrath (2002) study maintains that SME owner managers with more education and training are more likely to be successful than their counterparts with less education and training. A study by Wanjohi and Mugure (2008) supports this assertion by demonstrating that owner managers of most SMEs in the ICT sector tend to take advantage of the many sprouting commercial colleges offering various computer applications, attaining at least college level education, and appear to be doing much better than their counterparts in other sectors, as a result. With regard to technological challenges, a study by Ngahu (2000) found that SMEs are incapable of sourcing, evaluating, and adapting technologies effectively independently and so government policies should aim to develop these capabilities in SMEs through supportive institutions. With regard to finance, Wanjohi and Mugure (2008) found that the combined need for finance and the lack of access to SME friendly lending has led to the rise of Pyramid Schemes that promise hope for SMEs seeking alternatives. Pyramid schemes have been found to be detrimental to the success of SMEs.

### **Research, Policy, and Practice:**

Research plays a pivotal role in informing policy, which in turn plays a pivotal role in information practice. Where there is no research, policy is often missing, and practice fails as a result. Take the case of business incubation in Kenya, for example. The Kenya Industrial Estates (KIE) was established in 1967 by the Kenya Government as a business incubator initiative. Forty-five years later, there is no success story of business incubation as an initiative in Kenya in spite of its pivotal role in sustainable economic development. The single most significant reason for failure of business incubation programmes in Kenya can be attributed

to absence of policy directions on the same. If there had been a business incubation policy in 1967, KIE would probably have become a major business incubation success story instead of the real-estate management agency that it is today, and the Kenya Industrial Research Development Institute (KIRDI) would today be a success story in both ICT and Biotechnology business incubation. In the case of Kenya, as it relates to business incubation, we can say that there has been no research to inform policy, and therefore there has been no policy to inform practice, and so practice has failed – 45 years on.

### **The Case of Brazil**

We want to show, using the case study of Brazil) that:

- 1) Strong business incubation programmes can lead to speedier sustainable economic development; and that
- 2) Research in business incubation leads to greater success in business incubation programmes.

### **For this purpose, we have developed the following hypotheses:**

**Hypothesis#1:** There is a strong positive association between a strong business incubation programme and sustainable economic development in a country (however measured)

**Hypothesis#2:** The large failure rate of incubation programmes in Kenya has a strong and negative association with research in the subject matter.

The government of Brazil clearly made SME support, especially business incubation, a priority with the launch of the National Programme for Incubators and Technology Parks (PNI) (2005), a regulatory framework for business development and innovation. In light of the policy framework, government, university, industry and incubator associations and networks work in concert to achieve common goals thus ensuring good coordination of initiatives launched to support development of the business environment within the SME sector. To facilitate the process of new business creation, the Brazilian legislature passed several laws, such as FACIL (The Easy One), which simplifies laws to open and register a business and SIMPLES (The Simple One) – a single tax rate for small business to reduce the tax burden on small businesses under the Statute of Micro and Small Enterprises (SEBRAE, 2007). The launch in 2005 of PNI was a policy watershed indicating a major change in innovation policy. The subsequent passing of the Positive Law modified and simplified regulatory frameworks and fiscal incentives. For example, with this law, a 160% tax exemption on research, development, and innovation (RD&I) expenditures was granted. The law also added and amended legislation that allowed the creation of complementary mechanisms to implement some of the main provisions of the Innovation Law. A new



Innovation Law passed in 2005 legalized the act of a researcher at a federal university setting up a company in his/her name. The most innovative element of the law is the possibility of using money from the government to support companies. Under the law, Financing Agency for Projects and Studies (FINEP), a government agency, is authorized to provide federal grants to companies for specific research. These research grants, probably the most innovative aspect of the law, aim to foster innovation. SEBRAE (Servico Brasileiro de Apoio a Micro e Pequenas Empresas) is a small business development stakeholder forum which utilizes a network of over 4,000 employees and 9,000 consultants, is associated with 400 incubators, technology and innovation centres, financial institutions, and many other enterprise support organizations. In collaboration with stakeholders from all the three sectors of government, university, and the private sector, SEBRAE has developed a range of technology support tools, products and services for small businesses. The survival rate of new technology-based firms in Brazil is well above 90% over a five-year period (which is also significant in terms of savings from the cost of failed businesses). By 2009, Brazil was able to attribute part of its GDP growth to the higher survival rate of small businesses – especially in the technology sector.

## **Conclusions**

Studies on ICT's support to business have shown that strategic investments in ICTs can enhance growth, profitability, and competitiveness and that the role ICT has played in SME growth and development has been major. This study has reviewed the strategic utilization of ICTs in the SME sector in Kenya. The goal was to identify ICT utilization trends in the SME sector and how it has influenced business growth and competitiveness. In spite of the relative success of ICT SMEs, the study has observed that inadequate financing of SMEs in Kenya has curtailed ICT's leverage in business development. Attempts by SMEs to seek alternative financing instruments have largely failed due to lack of supportive regulations in the financial markets. In general, financial institutions are reluctant to provide financing at the infancy stages of a business, with most of them waiting to finance SME at growth stage, when the future is more predictable. The study has also observed that financing institutions are reluctant to finance technology start-ups, probably because technology does not provide for good collateral. But the SME sector needs a more responsive and more supportive financial environment than this. Among the challenges facing SMEs is lack of growth and development support services. For example, business owners have been found to have inadequate ICT skills and access and, therefore, fail to take leverage from their technological investments. Business incubation has been identified in this study as an intervention mechanism that can help alleviate much of the ailments in the SME sector. In Kenya the policy and regulatory environment regarding SMEs has been found to be either structurally

weak or non-supportive. A robust supportive environment made possible by adequate business incubation policy frameworks is necessary.

### **Recommendations**

There will be no policy guidelines where research has not been done. Following this logic, it can be argued that part of the reason for lack of a policy framework for the SME sector in Kenya, is lack of research in that area. Since research generally comes from universities, it is important for universities to be in tune with and responsive to matters that affect economic development and to focus their research in those areas, such as the plight of SMEs. Business incubation is a very expensive proposition and no one individual or organization can do it alone successfully – necessitating strong partnerships between several stakeholders. It succeeds when several stakeholders come together to pull resources for the support of new and start-up companies – as Brazil has done with some level of success. In addition to research, universities generally provide space (real-estate) for business incubation.

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# 16. Critical Actors and their Roles in Science, Technology and Innovation: Matching Expectations with Reality in Ghana

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## Abstract

*In its quest to formulate and implement a Science, Technology and Innovation policy, Ghana has realized the need to strengthen linkages between the scientists/ researchers and policymakers on one hand and practitioners on the other hand. These critical players' roles and functions are important in developing and harnessing STI in Ghana. However, the linkage between the various actors of STI in Ghana is weak. One reason for this weak linkage is the one-way communication that exists between the actors which does not leave room for feedback and consultations. The result is an output that rarely satisfies the needs or requirements of the stakeholders involved. Nonetheless, the status of Ghana's development in STI is steadily developing and progressing. There is also a need to develop strong partnerships between the government and scientists; as well as between policymakers and R&D institutions. Emphasis should also be put on effective communication amongst the critical actors as well as finding a suitable communication mode to transmit policies and regulations to practitioners and R&D institutions and vice versa. In all, the commitment of critical actors in performing their roles effectively will provide a framework within which to consider research collaboration, teaming for capacity building, joint research, technology transfer, funding and investment priorities among R&D institutions as well as in partnerships with industry.*

## Introduction

In recent times, Ghana has embarked on a journey of formulating and implementing a Science, Technology and Innovation policy which stresses on revitalizing the country by

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linking all critical actors as the primary productive force, thereby bringing their roles into full play to enhance productivity, increase competitiveness and develop the economy of the country. The quest for economic development is a true vision of the nation as clearly spelt out in several national development plans since independence in 1957. The vision which fuelled the passion for science-led development considerably waned after the fall of the first nationalist government of Dr. Kwame Nkrumah in 1966 (MEST, 2010). From the Innovation Systems perspective, there are critical actors in the development and application of Science, Technology and Innovation (STI), whose roles and functions are very crucial in achieving goals and objectives outlined in national development plans. The effective performance of the roles determines the state of the national STI. This paper discusses the roles of the critical actors in Ghana's national innovation system assessing the relevance of roles in the country's current development context, the nature and strength of linkages among the critical actors and the options for enhancement.

The paper specifically analyses the linkages between the scientists/ researchers and policy makers on one hand and practitioners on the other hand, taking into account the peculiar functions of these critical actors and the implication of effectiveness for national development. Indeed the latest development blueprint of Ghana – the Ghana Shared Growth and Development Agenda (GSGDA) – states that the national development objectives will be pursued on the wheels of STI. There is the National Science, Technology and Innovation Policy document which also elaborates extensively on the connection between the broad national development aspirations, the sectoral goals and objectives and STI applications. All these define for the nation the expectations for STI development and applications. The expectations also extend to the roles and functions of the critical actors. However, the reality of the performance of roles of the critical actors cannot match or justify the expectations due to a number of factors. The scientists for example are constrained in their roles by inadequate infrastructure, limited human resource development strategies in the new technologies, weak linkages with the private sector and weakening incentive systems. Policy makers are also hamstrung by inadequate national resources, political expediency and poor linkages with other critical actors.

Private sector actors are constantly bemoaning unfavourable economic conditions and legislative systems. All factors considered, reality may continue to mismatch expectations and the possibilities for change. The paper discusses all the factors raised and concludes that overall, there are some positive signs such as the commitment of some of these critical actors to bring change and the improving prospects of Ghana's economy and democracy. The paper

further emphasizes the need for the amplification of the possibilities and strengthening of efforts in performing roles on the part of scientists, policy makers and entrepreneurs.

### **National Innovation System (NIS)**

UNCTAD defines the NIS as the system of organizations, institutions and policies that, combined with the country's physical infrastructure and human capital, together create innovation. Ghana's National Innovation system is relatively small and not well developed. While its overall economic and political governance framework has been improved considerably during the past eight years or so, its policies and institutions for science, technology and innovation have not been modernized and aligned to economic growth and human development goals (UNCTAD/World Bank/CSIR-STEPRI, 2011). The National Innovation System of Ghana comprises the institutions for innovative performance encompassing policies and programmes, knowledge institutions and entrepreneurs of all scales.

### **Critical Actors, Roles and Linkages in the National Innovation System**

The three defined critical actors namely scientists/researchers, policy makers and the practitioners are the prime movers of the NIS of any country. However the roles of one actor at any particular stage of development of the NIS are performed without a linkage with other actors. Innovation is the fundamental task of the private sector and the entrepreneurs, but history has shown that in a moment of major transformations and crises, the role of governments has always been crucial (World Bank, 2010).

World Bank in 2007 discussed that, the innovation systems concept recognizes that:

1. There are important roles for broad spectrum of actors outside Government;
2. The actors' relative importance changes during the innovation process;
3. As circumstances change and actors learn, roles can evolve; and
4. Actors can play multiple roles

Table 1 describes the three prime critical actors of STI in Ghana their roles and their key outputs.

Linkages between STI actors are one of partnerships between two or more organizations to pool knowledge and resources to produce a product and render a service. Thus partnerships can be developed between practitioners and R & D institutions (for example on commercial transaction where an organization can purchase the technology); between policy makers and

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**Table 1: Critical Actors of STI in Ghana, roles and key outputs**

<b>Critical Actors</b>	<b>Roles</b>	<b>Key Outputs</b>
<b>Policymakers</b> (Politicians, Ministries, National Development Planning Commission, National Science Foundation, National STI Advisory Boards)	<ul style="list-style-type: none"> <li>• Formulates Policies</li> <li>• Formulates laws and regulations</li> <li>• Coordinates the implementation of policies</li> <li>• Provides mechanisms for funding R &amp; D activities</li> <li>• Provides incentives/ mechanisms for private sector involvement in R &amp; D</li> <li>• Provides mechanisms for infrastructure development for R &amp;D</li> </ul>	Policies, Development Plans, regulations and laws
<b>R &amp; D Institutions and Institutions of higher education</b> (Research Institutes, Universities, polytechnics, colleges)	<ul style="list-style-type: none"> <li>• Implements policies</li> <li>• Conducts Basic and Applied research relevant to national development</li> <li>• Provides Technological leadership to industry through commercialization</li> <li>• Develops the manpower for science, technology and innovation</li> <li>• Initiate Technology and Knowledge Transfer</li> </ul>	STI Products and Processes
<b>Practitioners</b> (Industries, Professional Societies, Financial Institutions, Consumers, Media)	<ul style="list-style-type: none"> <li>• Utilize Scientific and technological outputs</li> <li>• Promote Technology Transfer</li> <li>• Market Technologies</li> </ul>	STI goods and services

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practitioners (where policies and regulations on technology transfer, consumer protection are implemented); between policy makers, R &D institutions and practitioners (where partnerships leads to the provision of resources to develop and promote a specific technology necessary for economic development of a country); between two or more R & D/Academic Institutions (leading to a development of a new product or process) and many more. According to the World Bank, Linkages may also take the form of networks, which provides an organization with markets and other early warning intelligence on changing consumer preferences or technology. They further stated that networks also embody the “Know-who” of knowledge sources which can be tapped when the need arises and that these linkages and relationships that govern organizations/institutions concerns knowledge flow.

The linkages between the various actors of STI in Ghana are one that can be described as weak. Weak linkages between public research organizations and industry is obvious in the often mismatch demands from industry. The quest for technology by industry is a dynamic need that must be fulfilled constantly. Due to the limited resources available to carry out both basic and applied research in Ghana, R & D institution mostly rely on donor support to conduct their research activities. This leads to research output that is most often isolated from local industrial needs.

Diagram 1 below shows the current linkages between the critical actors in STI in Ghana. The diagram shows a linear linkage amongst the actors. The linkage is one way and not two ways. Thus policy makers perform their roles and develop outputs for R & D institutions/academic institutions to implement.



**Diagram 1: Current Linkages of Ghana STI Critical**

The linkage of R & D institutions with practitioners can be described as one where roles are performed for practitioners but with no feedback from the practitioners. This means for example that research outputs mostly does not satisfy industrial needs or requirements.

The lack of a two way communication is as a result of inadequate management of the STI system. The policy making body in charge of Science and Technology has never been consistent. From the Ministry of Industry Science and Technology in the 1980s, it was



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transformed to the Ministry of Environment Science and Technology in the 1990s. Then later in 2003, the ministry became the Ministry of Environment and Science with the technology added to communication to become the Ministry of Communication and Technology. In 2006, there was no separate Ministry for Science and Technology as science policy issues were mandated to the Ministry of Education, Science and Sport and Technology policy was primarily the mandate of Ministry of Trade, Industry and Technology. Thus the re-establishment of the Ministry of Environment, Science and Technology seems to resolve the issue of “one stop shop” for science, technology and innovation. However there is still the gap of an appropriate institutional mechanism to manage and coordinate all STI policies and programmes in the country be it R & D institutions, institutions of higher education, industries, professional bodies and other STI organizations.

### **Status of National Development in STI**

In 2009, under the African Science, Technology and Innovation Indicators programme initiated under the New African Partnership for African Development (NEPAD), the Ghana Innovation Survey Report was produced (MEST, 2009). This survey is to contribute to the overall development indicators and the production of an African Innovative Outlook (AIO), which would enable Ghana and other African countries to compare and improve the quality of their national policies and related innovation systems. The report indicated that there are substantial innovations in terms of products, process, organization and marketing. In the 2009 Ghana Innovation Survey, out of a total of 116 firms or enterprises (i.e. Large-62%, Medium- 28.5% and Small- 9.4%) surveyed, 75% initiated their own product innovation in Ghana, 88% introduced goods and services new to the market, and 81% introduced goods and services new to the firm. Meanwhile, only 44% of the firm performed process innovation with 85% of them developing their process innovation within the country.

The status of Ghana's development in STI is one that can be described as progressive and encouraging. However, the challenges within the national innovation system in delivering outputs relevant to economic development are to be addressed. Indeed, the need to provide adequate resources to the various actors of STI in Ghana should be addressed by ensuring that funds are provided for activities that contribute to the national priority sectors as defined in Government Development Plans.

### **Matching Expectations with Realities for STI development**

As countries have made considerable progress in improving their institutional and macroeconomic framework, attention turned to other drivers of productivity, and without

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doubt, technology and innovation have been at the top of the list (Lopez-Claros, 2010). In Ghana, the private sector drives industrial innovation with some input from national R & D institutions. Industrial Innovation in Ghana is achieved more through technology transfer in new investments or expansions through R & D from research institutions (Gyekye, et. al, 2005). The emphasis on increased productivity leading to economic growth through STI development is an expectation that should be matched with the realities. Factors contributing to decreased performance of critical actors in Ghana are realities that cannot be overlooked. These according to (MEST, 2010) involve:

- > The inadequate scientific expertise in the country;
- > Lack of advocacy for S & T at high political and policy levels;
- > Low science culture among the population;
- > Weak mechanisms for the management of S & T;
- > Ineffective coordination;
- > Inadequate budget and resource allocation;
- > Weak linkage between policy formulation and national development planning;
- > Weak mechanisms for implementation, evaluation and review;
- > Weak linkages between various agencies and organizations in S & T;
- > Weak linkage between industry and S & T;
- > Over reliance on the use of foreign expertise to the neglect of the use and development of local expertise;
- > The narrow base of quality in our pre-tertiary education system;
- > Poor remuneration and conditions of service for science and technology personnel of

### **Research Institutions.**

A partnership between government and the science and technology research community that emphasizes such projects and cooperates to identify and develop new research areas and technologies for supplying and expanding government provision of basic needs and services, within a comprehensive framework of process, and respect for people's rights and expectations, could significantly affect social development in the Hemisphere (OEST-OAS, 2004) The model described above of partnerships is used in most developed countries across the world where for example a partnership between R & D/ high academic institution and industry lead to the birth of Silicon Valley in United States of America. One of the advantages of partnerships for developing countries like Ghana is the opportunities for mobilizing resources for STI. With industry involvement in policy making, there will be a clear understanding and support in formulating STI funding mechanisms. Partnerships between policy makers and R & D institutions will ensure that current research activities are

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reflected in the formulating of R & D policies. The partnerships between critical actors can be local or international. Encouraging international partnership with other STI critical actors from other countries especially in Africa will definitely be a stronger base for successful and innovative outputs.

Effective communications amongst critical actors when the partnerships are established is a key ingredient in achieving innovation and economic development. Appropriate communication channels need to be defined for each partnership. Policymakers should find the suitable communication mode to transmit policies and regulations to practitioners and R & D institutions and vice versa. It is very important for R & D institutions to communicate effectively their outputs to industries and consumers. The media is to be seen as an actor in linking critical actors of STI development in Ghana by providing the mode of effective communication; package and disseminate STI information among STI actors. Building the capacity for actors of STI communication is necessary in Ghana.

The newly developed STI policy and development plan is expected to transform Ghana into a scientific and technological nation driven primarily by innovation. The long, medium and short term objectives outlined in the policy can only be achieved if the main actors of Ghana's STI system play an equal role in implementing the policy. Matching the expectations of Ghana's STI policy with the realities existing in the country, the critical actors must be guided by the principles outlined in the policy including: Relevance, Cost-effectiveness, Realism, and Synergy, Partnerships, Job and wealth creation and Demand driven.

### **Conclusion**

There is need for stronger linkages amongst critical actors of STI in Ghana to address the economic developmental challenges facing the country. Having established partnerships with critical actors within the country, there is also a need for well-established linkages with the international partners to promote STI development. The political stability existing now gives Ghanaian institutions and organizations the opportunity to attract international partners to increase STI activities there by fostering learning exchanges and technology transfer.

The National Innovation System in Ghana is one that is not strong but also not discouraging. As discussed, there are adequate institutions to perform the necessary R & D activities and national policies, plans and regulations to bring about the desired economic development. The commitment of the critical actors in performing their roles effectively will provide a framework within which to consider research collaboration, teaming for capacity building,

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joint research, technology transfer, funding and investment priorities among R & D institutions as well as in partnerships with industry. It is important to note that through strong linkages and partnerships even between two or more R & D institutions, limited resources available will be utilized effectively and productivity will be maximized.

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# 17. Innovative and Authentic Ways of Developing Traditional Medicine in Lesotho for Production of Complementary Medicines in Local Communities

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## **Abstract**

*In the late 1970s, the international community started taking steps aimed at developing traditional medicine for the 'benefit' of local and indigenous communities around the world. From the 1990s to the present, this interest in developing traditional medicine intensified. This is because traditional medicine is both effective and affordable, and its use in the western countries increased phenomenally. It is within local communities' reach, and its efficacy has been tested across generations. To that end, resources and efforts have been channelled to achieve 'best' ways of reaping the benefits of traditional medicine for the impoverished and disease-struck local communities.*

*Despite such initiatives, these 'promises' of the contemporary renewed interest in traditional medicine seem not to filter to local communities and custodians of traditional medicine in Lesotho. Instead, there are signs that the perceived benefits persistently gravitate away from their rightful beneficiaries, the local communities and custodians. It is proposed that traditional medicine should be included in agricultural extensions and advisory services for production of complementary medicines for authentically ensuring that local communities and custodians of traditional medicine benefit from their heritage. We suggest that already existing infrastructure for agricultural extension and advisory services should be used to integrate traditional medicine. Thus, the paper is geared towards suggesting innovative and authentic ways of integrating traditional medicine in Lesotho into existing extension and advisory services' policy and programmes for production of complementary medicines for*

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*local communities. It is mainly centered on investigating characteristics of the Basotho society which are advantageous for co-operatively producing complementary medicines and plant species which can be harnessed by local communities.*

**Keywords:** *Local Communities, Extension and Advisory Services, Contemporary Interest in Traditional Medicine, Beneficiaries, Complementary Medicines*

### List of Acronyms

AIDS	Acquired Immune Deficiency Syndrome
CPZ	Central Processing Zone
CCZs	Community Co-operate Zones
EHP	Ethno Herbal Products
HQ	Head Quarters
HIV	Human Immunodeficiency Virus
NEPAD	New Partnership for Africa's Development
NGO	Non Governmental Organization
NUL	National University of Lesotho
R&D	Research and Development
RPZ	Regional Processing Zones
SANBio	Southern Africa Network for Biosciences
WHO	World Health Organization

### Introduction

Like other African societies, Basotho have relied on traditional medicine for healthcare. Historically, Traditional Healers in Lesotho held a high status not only as respected healers, but also as rain-makers, philosophers, leaders, advisors, and intelligence gatherers<sup>21</sup>. Despite persistent usefulness, traditional healing faced stigmatisation across time. In Lesotho, major culprits and pioneers of these stereotypes were European Christian Missionaries who first arrived in Lesotho in 1833. Without fully understanding the essence of African traditional culture, they viewed Africans as pagans and barbarians. They aggressively introduced Christian norms and European “civilisation”. Some Basotho accepted the new culture introduced by the missionaries and were accordingly initiated<sup>22</sup>. Like their European mentors,

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<sup>21</sup> *Engène Casalis, The Basutos; or, Twenty-Three Years in South Africa (London: James Nisbet & Co., 1861), pp. 270-299; Hugh Ashton, The Basuto: A Social Study of Traditional and Modern Lesotho (London: Oxford University Press, 1967), p. 282.*

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they shunned traditional healing. In 1868, Lesotho became a British protectorate, and in 1871 colonial laws meant to dismantle Basotho's pre-colonial formations and culture was promulgated. In what came to be known as the Gun War, Basotho resisted and fought the Cape Colonial government against the introduction of blatant colonial laws. These laws further assisted the Christians in the mission of “civilising” Basotho. Europeans in Lesotho and their new disciples strengthened their stereotypes against traditional healing throughout the colonial period<sup>23</sup>.

In 1966, against the background of the peak of modernisation and bi-polarity of the world into the west and the east, known as the Cold War, Lesotho gained independence. The newly independent government of Lesotho sought to develop the country through capitalism and liberalism. The necessary condition for that was the transition to modernity from traditional ways of living. That further marginalised and deepened stigmatisation towards traditional healing. However, modernisation promises failed to deliver anticipated results and like other African traditional cultural practices, traditional healing continued to be relied on by Basotho because it is part of how they co-exist reciprocally as a society and as part of their identity forged over generations.

In the late 1970s, the international community attempted to incorporate and develop traditional medicine. Since then, to the present, many attempts have been undertaken in the name of developing traditional medicine. However, a striking feature about this renewed interest in traditional medicine, as has been the case historically, is lack of adequate and proper understanding and appreciation of traditional healing<sup>24</sup>.

In Lesotho, attempts aligned with these international initiatives were made by the Ministry of Health and Social Welfare. For example, in-line with the Alma-Ata Declaration of 1978, the Ministry designed what was labelled as “Traditional Medicine Programme for Lesotho”. The main aim of the Programme was to identify safe medicinal plants for Primary Health Care<sup>25</sup>.

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<sup>22</sup> *Casalis, The Basutos*, pp. 270-271.

<sup>23</sup> *Motlatsi Thabane, “Aspects of Colonial Economy and Society, 1868-1966”, in Neville W. Pule and Motlatsi Thabane (eds), Essays on Aspects of the Political Economy of Lesotho, 1500-2000 (Roma: Department of History, National University of Lesotho, 2002), pp. 104-105.*

<sup>24</sup> *See for example, WHO Technical Report Series, NO. 622 of 1978; Resolutions of the 30th World Health Assembly of 1977 and the Alma-Ata Declaration of 1978; J. M. Varela, Traditional Medicine in Lesotho: A Study in Perspectives of its Integration into Primary Health Care with Emphasis on Management of Neuropsychiatric Disorders (Antwerp: A. N. Research Programme, 1985).*



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To implement this programme, they further assisted Basotho traditional healers to form an organization of their own. However, attempts by the Ministry of Health and Social Welfare to incorporate traditional medicine in Lesotho Primary Health Care policies and programmes failed<sup>26</sup>. A more recent example can be provided and the same story of unsuccessfulness will be re-painted. From the early 2000s, the Ministry of Communications, Science and Technology took to the idea of developing traditional medicine and indigenous knowledge in Lesotho. In 2008, the Southern Africa Network for Biosciences (SANBio), in collaboration with New Partnership for Africa's Development (NEPAD) funded Lesotho to identify medicinal plants to be used for treatments of HIV/AIDS and opportunistic infections.

What emerges in Lesotho is that, there is lack of adequate infrastructure for the development of traditional medicine, resulting in a situation where development initiatives in traditional medicine have been alternating between government Ministries. It is therefore argued that due to lack of resources on the one hand, and the non-existence of infrastructure in existing government Ministries<sup>27</sup> and respective NGOs and organizations which deal with traditional medicine and indigenous knowledge on the other hand, resources should be pooled and synchronized to ensure that traditional medicine benefits its consumers and custodians economically and in terms of health.

It is advised that efforts aimed at developing traditional medicine into Lesotho should be consolidated and developed into a long-term programme which is locally-oriented; which precisely address problems that exist in and benefit local communities. This is because development efforts in Lesotho's traditional medicine are ad hoc initiatives meant to respond to, and benefit from, international funding opportunities. Often than not, when anticipated outcomes are not realized, initiatives are left to lapse.

Specifically, it is proposed that, traditional medicine should be incorporated in Lesotho Agricultural Extension and Advisory Service which is under the Ministry of Agriculture, Marketing and Co-operatives to produce complementary medicines and herbal beverages. Infrastructure, equipment, training programmes and advisory services under this Ministry

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<sup>25</sup> T. K. M. Letsie, "Position Paper on Traditional Health Practice in Lesotho", paper presented to the Ministry of Health in partnership with the Private Health Association of Lesotho, Maseru, November, 1991; T. K. M. Letsie, "Traditional Medicine Programme Brief to the Minister of Health, n.d.

<sup>26</sup> See the 1986 Commonwealth Expert Meeting on Evaluation of Traditional Medicine Practice in Africa as quoted in T. K. M. Letsie, "Traditional Medicine Programme Brief to the Minister of Health".

<sup>27</sup> Especially, the Ministry of Health and Social Welfare, the Ministry of Science, Communications and Technology, the Ministry of Agriculture, Marketing and Co-operatives and the Ministry of Tourism, Culture and Environment.



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should be used for propagation of medicinal plants to be sold in local and international markets. There are advantages associated with propagating medicinal plants in sustainable manner. Also, commercialization of these medicinal plants will attract higher revenue to the people who are engaged in this enterprise and the nation.

This paper is structured into three main sections. The first section deals with the nature of the Basotho society in relation to co-operative production of complementary medicines by local communities. It also highlights the macro-aspects of a country-wide programme structure for production of complementary medicines. The second section profiles four medicinal plants which can be used for such a programme.

The last section is the conclusion and recommendations. The paper is intended to present a summarized analysis of innovative and authentic ways of developing traditional medicine for local communities in Lesotho.

**Basotho Society and the Spirit of Co-operation: Prerequisites for Developing Traditional Medicine for Income Generation in Local Communities**

Among important prerequisites of any development initiative is its applicability to local conditions and its acceptability by local people. A development programme informed by local communities is virtuous because it addresses existing problems. It is therefore not surprising that J. D. Wolfensohn, the former President of the World Bank, advised as follows: “... *Learn from local communities to enrich development process*”. Traditional medicine in the Basotho society is a sensitive part of their cultural belief and health practices which are anchored on noble grounds of healing communities, instead of being based on high profit aspirations. Be that as it may, local communities and custodians of traditional medicine seem to have responded positively to past development initiatives. By that token, it gives us confidence to suggest that an initiative meant to benefit them economically and in terms of health, will be welcomed with both hands.

Due to the traditional character of reciprocity in extended families and co-operation among Basotho society, it is assumed that the proposed programme will be successful since it also involves formation of Co-operatives. Historically, Basotho people have engaged in co-operatives persistently and still continue to do so despite many problems that they encounter. Defining the nature of Basotho's society and the rise of the co-operative movement in Lesotho, Sir Alan Pim's Commission asserted that:

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The conception of co-operation is by no means foreign to life under tribal conditions in which a practical working communism is a striking feature. The native family, in the large sense of that term, may almost be described as a ready-made co-operative<sup>28</sup>. A critical appreciation of these two characteristics of the Basotho society is of paramount importance for the proposed initiative to be conceived as well as for it to be successful. These two elements also nullify the allegation that Basotho are not motivated by profit. Therefore, they will respond positively to initiatives aimed at increasing their financial position and geared towards 'genuinely' developing their cultural and environmental heritage, in this case, traditional medicine.

### Selected Plant Species for Commercial Propagation

Plant selection is based on availability and easy propagation of the plants. These plants are weeds which do not affect the conservation programmes in Lesotho. Again, they also contain active properties for treating most HIV/ADIS opportunistic infections, immune systems and circulatory problems.

#### Enumeration

##### A.

**Family:** Solanaceae

**Botanical Name:** *Withania somnifera*

**Common English Name:** Winter cherry

**Common Sesotho Name:** Moferangope

#### Usage

Most circulatory problems such as pins and needles are easily treated with an extract of the aromatic tubers.

Traditional practitioners use this plant for many purposes such as physical and mental conditions. For treatments of motor and degenerative diseases of the brain, this medicinal plant is very important. Tuber extracts of this herb are also used to treat sexually transmitted diseases<sup>29</sup>.

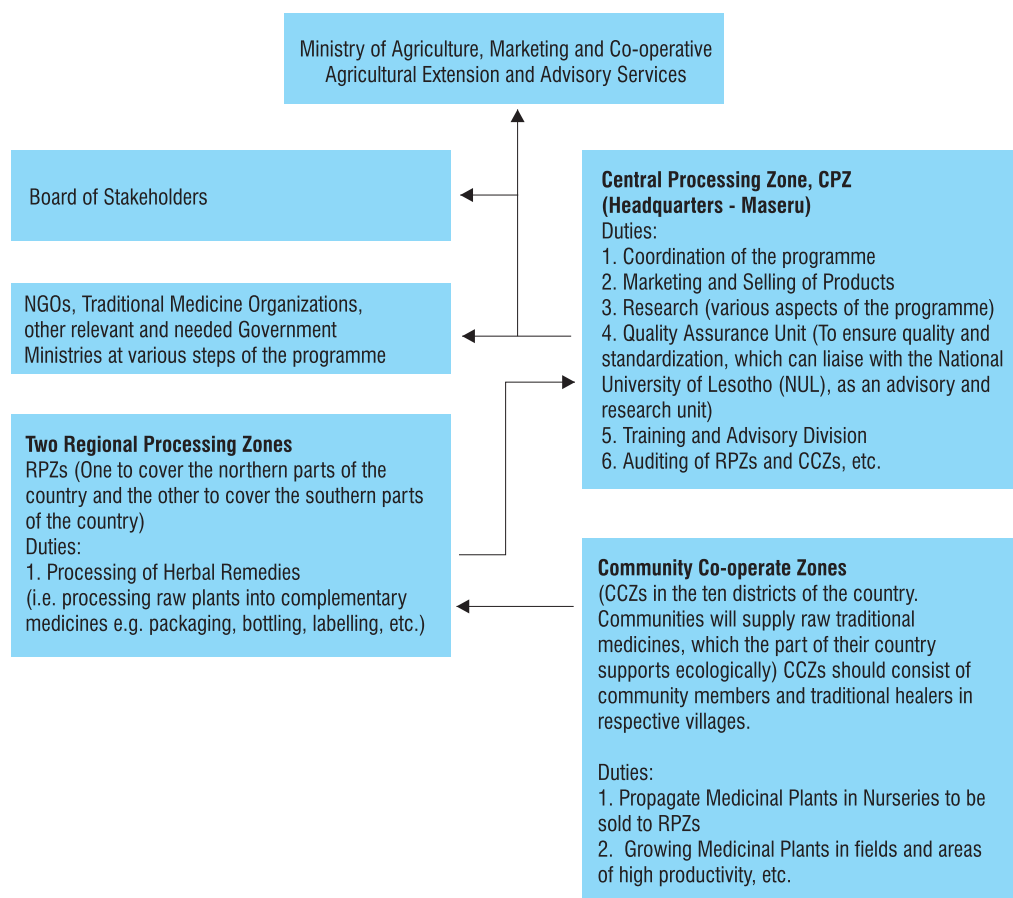


<sup>28</sup> *Financial and Economic Position of Basutoland: Report of the Commission Appointed by the Secretary of State for Dominion Affairs* (London: His Majesty's Stationery Office, 1935), p. 174. The Pim's Commission came to Lesotho in the mid-1930s against the background of the world-wide depression to survey the economic and financial position of Basutoland.

<sup>29</sup> See, Ben-Erik Van Wyk, Bosch Van Oudtsboorn and Nigel Gericke, *Medicinal Plants of South Africa* (Pretoria: Briza Publications, 1997), pp. 274-275.

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**Figure 1: Macro Structure of the Proposed Programme**

### Anti - Inflammatory /Anti-Rheumatic Activities of *Withania somnifera*

Arthritis is a manifestation of severe inflammation which affects the elderly, and patients suffering from degenerative diseases such as suppressed immune systems. Infecting organism moves to joints through the blood stream (Infectious Arthritis), affecting the synovial membrane.

Systemic lupus erythematosus symptomizes as arthritis, as well as ulcerative colitis. Infections such as *Chlamydia* often cause arthritis which causes arthritis in many young HIV/AIDS patients. Ulcerative colitis mimics symptoms of arthritis and *angina pectoris*. Degenerative diseases such as *osteoarthritis* often damages cartilage covering bones. This is linked to malabsorption through defect in protein that forms the cartilage. *Withania somnifera* has

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proven very effective<sup>30</sup>. This plant has been used in treatments of gastric ulcers, dermatitis and hypercholesteremia.

### **Anti - Microbial Activities of *Withania somnifera***

Many diseases in Lesotho are of microbial origin e.g. diarrhoea, skin infections and tuberculosis. Most patients suffering from degenerative / chronic diseases have bacterial and fungal infections in addition to high viral loads. Therefore, this plant is effective for treating bacterial and fungal infections with good results.

### **Saponins**

These compounds are known to cause haemolysis of blood cells and produce antimitotic, antimicrobial, and anti-inflammatory functions. Saponins are known for their high water solubility and general widespread distribution.

They are characterized by foaming when shaken in water and are capable of lowering water surface tension. Most of these antioxidants have the ability to arrest the physiological functions of a target micro-organism and kill it.

## **B.**

**Family:** Fabaceae

**Botanical Name:** *Sutherlandia frutescens*

**Common English Name:** Cancer bush

**Common Sesotho Name:** Musa-pelo, Matlepele



### **Usage**

When a Mosotho widow is in traumatic shock, a strong tisane is prepared as a depressant. The name *Musa-pelo* means “to calm down the heart”. It means that the medicine has always been used as a sedative for related heart conditions, such as tremors, or vertigo in Lesotho. Basotho have also used this plant for chest problems, and affections. It was also used for Lymphogranuloma venereum (*Mofufutso/Mabae/Mashoa*) after burial of husband, or wife. Many sexually transmitted diseases were treated with an infusion, or tisane of this plant extract. Various combinations

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<sup>30</sup> Maliebe, Eric B., “*The Plant Culture of the Basotho*” Unpublished Research Work funded by Helvetas (Swiss NGO) - Lesotho, 1998.

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were done to enhance efficacy or potency with other herbs. The mixture was commonly used with sorghum grains (*Mabele*)<sup>31</sup>.

**C.**

**Family:** Lamiaceae

**Botanical Name:** *Mentha longifolia*

**Common English Name:** Wild mint,  
Penny royal

**Common Sesotho Name:** Kuena



**Usage**

*Mentha-longifolia* has been used in cases of anti-diarrheal. It is carminative as well as sedative. An extract of the plant is used for intestinal worms in children. It is also commonly used for fever / influenza. It is either inhaled, used through steaming, or drunk as a hot tisane<sup>32</sup>.

**D.**

**Family:** Polygonaceae

**Botanical Name:** *Rumex crispus*

**Common English Name:** Common dock,  
Sheep sorrel

**Common Sesotho Name:** Khamane,  
Khama-khamane



**Usage**

An infusion of the root is used for dysmenorrhoea and many female ailments such as heavy menstruation. The same extract is used for treating gum infections, toothache and ear problems. A strong tisane is often taken to treat stomach indigestion, or used as a laxative to remove stomach impurities.

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<sup>31</sup>Maliebe, Eric B., "The Plant Culture of the Basotho" Unpublished Research Work funded by Helvetas (Swiss NGO) - Lesotho, 1998; See also, Ben-Erik Van Wyk, Bosch Van Oudtsboorn and Nigel Gericke, *Medicinal Plants of South Africa*, pp. 246-247.

<sup>32</sup>Eric Bataung Maliebe, *Medicinal Plants and Herbs of Lesotho: a Guide to 60 Species around the Country* (Maseru: Mafeteng Development Project, 1997), p. 18.



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As a tincture or common infusion, this plant extract is used to remove bacterio-stasis in the body. The leaves are dried and used as green tea for better health in cases of blood detoxification. People living with HIV/AIDS often find the remedies prepared from this plant helpful in treating high viral loads and systemic fungal infections. The roots are often roasted and applied on open wounds or rash. A tisane made from the rootstock is also commonly used for treatment of the prostate/prostatitis (Bacterial infections of the prostate gland – male genitourinary system) problems. The same plant extract is used in veterinary medicine for anti-biliousness in animals<sup>33</sup>.

### Conclusion and Recommendations

Basotho can sustainably benefit from their natural environment by harnessing the potentials of plants-based remedies for health improvement and income generation. They can do so by propagating plant species, found in their wild or fields, and specially designated areas like botanical gardens, conservations areas and nurseries. Based on the evidence presented in this research paper, it is recommended that local communities in Lesotho should be assisted to cooperate and implement projects based on these medicinal plants. They should do so to produce complementary medicines for health and income generation.

Complementary medicines have a number of sustainability advantages. They are effective; not toxic; have no dependency, have a longer shelf-life when properly processed, and their production does not have a detrimental effect on the environment. Communities that have produced certain remedies will have full ownership of their products. By that token, they will be well positioned to fully reap the benefits of their efforts.

Due to lack of adequate resources, their projects should be integrated into the Agricultural and Extension Service under the Ministry of Agriculture, Marketing and Co-operatives. This Ministry offers wide opportunities for such projects. However, other relevant Ministries and stakeholders should also be utilized and synchronized, to form a long-term programme for traditional medicine development for local communities.

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<sup>33</sup>Maliebe, Eric B., "The Plant Culture of the Basotho" Unpublished Research Work, funded by Helvetas (Swiss NGO) - Lesotho, 1998; See also, Ben-Erik Van Wyk, Bosch Van Oudtsboorn and Nigel Gericke, *Medicinal Plants of South Africa*, pp. 218-219.

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# 18. Swaziland's Experiences with Developing a National Policy for Science, Technology and Innovation: Implications for Linking Policy Research with Policy Making

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## Abstract

*The absence of a national policy for science, technology and innovation (STI) in most developing countries has been alleged to be a major setback for national development. Hence, developing an STI policy becomes a prerequisite for creating a close link between sector policies and a national STI policy, including the institutional framework for the implementation, application, monitoring and evaluation of the STI Policy. The national STI policy ensures that a systematic strategy as well as a suitable environment for efficient use of scarce resources is created. The purpose of this paper is to share experiences and insights gained from developing a national STI policy for Swaziland, after many years of operating without a national policy. The approach to develop the policy was through the use of six stakeholders' workshops and consultative meetings using the SWOT analysis strategy. The workshops were preceded by two separate studies on the status of S&T in Swaziland which were conducted by the authors. From the said workshops and consultative meetings, including the two research studies, (i) key S&T issues emerged, which formed the core of policy statements; which included example, issues on public understanding of Science and Technology (S&T), S&T education and training, Research and Development, S&T priorities and policy initiatives, S&T management, S&T investment, S&T coordination and collaboration, S&T culture, industrial development, and indigenous knowledge systems (ii) cross-cutting issues and related policies also emerged, namely: Information and Communication Technology, intellectual property rights, standards for quality assurance, biotechnology, brain drain, gender equity, collaboration and cooperation, environmental management, social and human scientists (iii) a close link*

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*between sector policies and the national STI policy were noticeable. It was concluded that a national STI policy cannot be complete without establishing the links and gaps between sector policies and the national STI policy, including key issues and cross-cutting issues. The Swaziland experience was instructive and countries that plan to develop revise and evaluate their national STI policies, should engage the public and a wide range of stakeholders in order to capture key issues, including cross-cutting issues that are important in developing a holistic national policy – one that nurtures a close link between and among many sector policies.*

**Keywords:** *science, technology and innovation, policy, cross-cutting issues.*

### Introduction

#### S&T Policy Development

As early as the seventies, a number of regional and international organizations, such as the Southern African Development Community (SADC), the United Nations Educational, Scientific and Cultural Organization (UNESCO), the United Nations Economic Commission for Africa (UNECA) and many others have reiterated the need for African countries to develop national Science and Technology (S&T) policies, and use them to eradicate the scourges suffered by developing nations, such as endemic diseases, hunger, illiteracy, environmental degradation, energy inefficiency, and so on. For instance, in 1974, Ministers of African States responsible for the application of S&T for development recommended that each member state should establish a system of national science policy. In 1991 and 1993, the Southern African Development Coordinating Conference (SADCC) and SADC, emphasized the need for Member States to formulate national S&T policies (SADCC, 1991; SADC, 1993).

Most African countries developed their S&T policies in the seventies and eighties. Of late, the emphasis is not on S&T only but on a combination of Science, Technology and Innovation (STI). In 1995, for example, UNECA recommended the promotion of competitive S&T policies that focus on innovation systems (UNECA, 1995). In 2003, at the New Partnership for Africa's Development (NEPAD) Ministerial Conference on S&T held in Johannesburg, Republic of South Africa, the Ministers encouraged all member countries of the African Union (AU) to develop comprehensive national STI policies, with emphasis on National Systems of Innovation (NEPAD, 2003). The Ministerial Council advised Regional Economic Communities to compile indicators on scientific research, technological development and innovation in countries within their sub-regions in support of national efforts in the formulation of national policies.

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Mugabe (2009) observed that many countries in Africa tend to organize STI policymaking as isolated events rather than processes. The events, according to Mugabe, are frequently not well aligned with national economic development policy processes and overall poverty reduction strategies. In a similar vein, the African Technology Policy Studies Network (ATPS) noted the need for African S&T to be driven by the needs of the African people and recommended that institutional and policy reforms should be undertaken to achieve this goal (ATPS, 2010).

ATPS also called for urgent action by African governments and African people to enact policies that support capacity development and effective capacity utilization in Africa for African development, that is, policies which will encourage African STI experts to develop home-grown solutions to the wide variety of Africa's STI challenges, and not aim for outputs that have international relevance with little or no practical application in Africa. ATPS was of the view that local priorities and needs such as poverty reduction and environmental sustainability should drive the STI agenda within the context of global agendas and not vice versa. Therefore, the need to ensure that policy development is based on empirical evidence cannot be overemphasized, hence the importance of the ATPS Annual Conference 2011.

### **Swaziland: Geographical, Economic and Social Context**

Swaziland is a small, landlocked country of about 17 365 km<sup>2</sup> situated in the Southern region of Africa and shares a border with Mozambique and South Africa respectively. The country has a population of 1.2 million people (PRB, 2011). The economy is fairly diversified, with agriculture, forestry and mining accounting for about 13% of GDP. Manufacturing (textiles and sugar-related processing) represents 34.3% of GDP.

The country is well known for its agribusiness. The sugar sector is central to the economy of Swaziland and constitutes 59% of agricultural produce and constitutes 18% to GDP. The sugar industry, based solely on irrigated cane, is Swaziland's leading foreign exchange earner. Sugar is also sold domestically, particularly to industries that produce soft drinks, confectionery and jam. Soft drink concentrates (a U.S. investment) is another large export.

### **Purpose and Objectives of the Paper**

#### **Purpose**

The purpose of the paper is to share experiences the authors had while conducting policy research and developing a National STI Policy in Swaziland.

### **Objectives**

- > Describe insights gained from developing the National STI Policy in Swaziland.
- > Share lessons learnt and highlight linkages between policy research and policy development.

### **Attempts to Develop a National S&T Policy During the Past Fifteen Years**

The history and current status of science and technology (S&T) in Swaziland may, respectively, be obtained from official national documents such as the Science and Technology Issues Paper which coincided with the formulation of the National Development Strategy in 1996 (Makhubu, 1996), the Consultancy Exploratory Document for UNESCO (Makhubu, 2006), the Proceedings of the Seminar pertaining to sensitizing the public on the need for the development of a national S&T policy held at the University of Swaziland [Edje et al (Editors), 2006], the Proceedings of the Consultative Workshop on Science and Technology held at Esibayeni Lodge [Edje (Editor), 2007], a Consultancy Report on the Current State of Science, Technology and Innovation in Swaziland (Dlamini and Dube, 2008) and a National Profile of Science and Technology (S&T) in Swaziland (Dlamini, 2009), amongst other documents produced by local scientists.

The Government of Swaziland has, over the years, engaged UNESCO in the development of a national STI policy. The initial stages of the formulation process began towards the end of the year 2005, leading to the production of the Consultancy Exploratory Document for UNESCO (Makhubu, 2006). As part of the S&T policy formulation drive, the then Ministry of Education of the Government of Swaziland which was responsible for S&T at that time, hosted a National S&T Seminar in August 2006, with the aim of bringing together all stakeholders in S&T. It was financed by UNESCO. UNESCO also engaged a consultant for purposes of guiding the seminar and giving an overview of S&T in relation to implications for policy formulation [Edje et al (Editors), 2006].

In June 2007, the said Ministry hosted a workshop on S&T Policy Consultation. It was once again funded by UNESCO. An S&T Adviser was assigned to facilitate the workshop as well as provide leadership until the policy is submitted to relevant Government structures [Edje (Editor), 2007]. In June 2008, the Ministry commissioned a survey that was once again funded by UNESCO. The purpose of the survey was to assess the current state of science, technology and innovation in Swaziland. It was conducted by two local consultants and a report was submitted to the Swaziland National Commission for UNESCO (Dlamini and

Dube, 2008). In 2009, another study which led to a National S&T Profile was undertaken and submitted to the UNESCO Office Windhoek (Dlamini, 2009). It was also commissioned by the then Ministry of Education and funded by UNESCO.

In April 2011, the Ministry now responsible for research, science and technology, namely, the Ministry of Information, Communication and Technology, commissioned the development of a National STI Policy. The activity was financed by UNESCO. Initially, four consultative meetings were conducted by the authors, with full support from this Ministry and the National Commission for UNESCO, by engaging a broad spectrum of stakeholders, including Members of both houses of Parliament, Government Ministries, Public Enterprises (Parastatals), the Private Sector, Tertiary Institutions, S&T Associations, the Media Houses, Non-Governmental Organizations and Individuals, to name a few. The objective of the meetings was to elicit the views of the stakeholders in order to develop a viable National STI Policy. The first meeting was targeted at individuals in their capacities as eminent scientists and engineers, as well as persons who have supported S&T initiatives over the years and are passionately interested in S&T issues.

The second meeting involved Government Ministries, Public Enterprises and non-governmental organizations. The third meeting was attended by institutions of higher learning, S&T associations, the Private Sector and the media houses, whilst the fourth one was solely targeted at Members of both Houses of Parliament. The proceedings of the four meetings were presented at a workshop which was concluded by a presentation of the proposed template of the draft STI policy so as to receive comments from the participants. The first draft of the policy was presented in another workshop held seven weeks later. The participants' inputs were incorporated into the first draft. The second and final draft was presented to the Ministry, revised thereafter, and is ready for submission by the Ministry to Cabinet (Dlamini and Dube, 2011). In summary, there are as many as seven meetings/workshops which were conducted during the development of the final draft of the National STI Policy. The Ministry and National Commission for UNESCO supported the authors throughout the exercise.

## **Summary of Findings of S&T Studies Undertaken in Preparation for Development of National STI Policy**

### **Science and technology issues paper (1996)**

This study provides highlights of salient aspects of the application of S&T to development in the context of Swaziland's experience relative to other African countries. It recommended

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the establishment of a strong S&T body to be called the National Research, Science and Technology Council - a central organ to serve as a national forum for policy evolution and analysis. The Council would also serve as a think-tank to initiate national debates on R&D, the popularization of S&T for development, and the involvement of government, the private and informal sectors and the general public in harnessing science and technology for development (Makhubu, 1996).

**Consultancy exploratory document for UNESCO (2006)**

This document provides information about the challenges that Swaziland has been facing over the years, in an attempt to resuscitate the national research coordinating body called the National Research Council (NRC). The Council was established as early as 1972 with the aim of promoting and coordinating all matters on research and application, as well as influencing public policy. It was anticipated that the NRC would, at a later stage, develop a national STI policy. However, shortly after its establishment, it became ineffective due to the absence of a full-time secretariat to manage the NRC and lack of interest from its members. Moreover, there was no established funding mechanism for research at the national level. The author acknowledges that efforts to develop a science and technology policy for the country had been going on for over a decade (Makhubu, 2006).

This consultancy also assessed the S&T status of various organisations in Swaziland as a continuation of discussions that started during the formulation of the National Development Strategy and the subsequent production of the Science and Technology Issues paper (1996). Three recommendations of the future direction were made and a budget estimate was proposed for the year on which the NRC would be activated. The recommendations are as follows: (i) in order to provide a focus for S&T and innovation, a Ministry of Science and Technology should be established and a Director-General, an administrative assistant and secretarial staff, recruited, (ii) the NRC must be established by an Act of Parliament so as to provide direction for national research and development, and innovation, and (iii) in order to sensitise policymakers to the critical role of STI in development, a forum for exchange between government, parliament and scientists should be established by the NRC as part of its committees/institutes.

**Consultancy report on the current state of STI in Swaziland (2008)**

This consultancy report provides information about the current state of Science, Technology and Innovation (STI) in Swaziland (Dlamini and Dube, 2008). Fifty participants were randomly selected from institutions or organisations considered to be users of Science and

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Technology (S&T) in their daily operations. A questionnaire was designed, reviewed to establish validity, pilot tested to ensure reliability ( $r = 0.83$ ) and used to collect data. In a nutshell, the purpose of the survey was to identify opportunities and best options for Swaziland to increase value addition to products and services from a strategic S&T base so as to direct local production, research and trade initiatives. Findings of the survey revealed that 85.7% of the institutions used S&T in their daily operations. Leading role players in S&T were the Swaziland College of Technology (57.1%) and the University of Swaziland (80.0%). The major constraints affecting S&T applications in Swaziland included (i) shortage of competent S&T personnel, and information on users of S&T, (ii) absence of a national S&T policy, (iii) absence of an S&T institutional framework, and (iv) non-availability of an institution to coordinate S&T. Mean scores relating to the constraints, ranged from 4.27 to 4.72 in a scale of 1 to 6. The conclusion was that the state of STI was not satisfactory. As a result, it was recommended that the institutions that regarded STI to be important, should champion the development of a national STI policy to guide national development.

The survey also revealed that there were serious constraints currently affecting S&T and value-added products and services. The study recommended that appropriate systems be put in place in order for S&T institutions/organizations to contribute meaningfully to sustainable growth, including the establishment of a body responsible for S&T, the formulation of a national STI policy, adequate budgeting for S&T by Government in particular, and S&T institutions/organizations in general, and for the purchase of modern equipment. It was also recommended that the Private Sector and International Donor Agencies or Co-operating

Partners should be approached for financial assistance in this endeavour. The survey also revealed that suitable systems should be provided for training, retention and recruitment of S&T personnel, as well as the improvement of systems for S&T information dissemination. A number of opportunities were identified as possible contributors to value addition, with respect to products and services, for purposes of economic growth and job creation. It was considered essential, therefore that Government should provide a suitable environment for S&T advancement to ensure that the economy of the Kingdom of Swaziland thrives on a sustainable basis. A conducive environment, for example, could be provided through development of a National Policy for Science and Technology that should provide direction and guidance.

### **National profile of S&T in Swaziland (2009)**

This study was aimed at providing statistical data on the state of human and financial



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resources for the year 2008 and, where possible, for the year 2009, for purposes of comparison (Dlamini, 2009). Data collection on human resources targeted institutions of higher learning, that is, the University of Swaziland and Colleges engaged in S&T education, the industrial and service sectors, and Government departments involved in S&T/R&D. A questionnaire was designed, reviewed to establish validity and pilot tested. At least 55 institutions were requested to participate in the survey.

The survey revealed that in 2000 and 2008 respectively, Swaziland spent only 0.1% and 0.2% of its gross domestic product (GDP) on R&D. These results are in line with the observation that most African countries spend less than 0.5% of their GDP on R&D (Mugabe, 2006). This figure is too low in relation to the declaration made by African States at the Organization of African Unity (OAU) summit held in Lagos, Nigeria in 1980, where the Lagos Plan of Action for Economic Development of Africa 1980-2000 was adopted. The declaration was to the effect that each country would allocate at least 1.0% of its GDP to research and development. It was noted though that more studies need to be undertaken to substantiate the level of financial contributions made by Swaziland's cooperating partners in the area of research. This recommendation is based on the fact that not all the institutions that had been identified for the survey responded to the questionnaire. The largest number of researchers in 2000 was found to be in Agricultural Sciences followed by Natural Sciences and the lowest was in Engineering and Technology. Male researchers and students were found to dominate their female counterparts in 2000 and 2008, particularly in the Natural Sciences, Engineering and Technology disciplines. For example, there were only 15% female researchers in the Natural Sciences in 2008. The percentage of female graduates in Engineering and Technology in 2008 was found to be only 12.5%.

### **Development of National STI Policy**

#### **Methodology**

The approach used to develop the National STI Policy of the Kingdom of Swaziland, subsequent to the policy research undertaken in 1996, 2006, 2008 and 2009, as highlighted above, was as follows:

- (i) desk literature review of S&T issues, in general;
- (ii) review of the consultancy reports produced since 1996;
- (iii) identification of stakeholders to be invited to participate in the survey;
- (iv) conducting a series of consultative meetings and workshops
- (v) identification of key S&T issues as well as cross-cutting issues that provided a foundation for socio-economic development;



- (vi) undertaking a SWOT analysis of each key cross-cutting issue through group discussions and reports from working groups;
- (vii) drawing up recommendations on the basis of the identified strengths, weaknesses, opportunities and threats that had been identified;
- (viii) compiling proceedings of the meetings/workshops;
- (ix) presenting the proceedings to the stakeholders, together with a template of the draft STI policy, for comments;
- (x) preparing the first draft of the National STI Policy, in consultation with the Public Policy Coordinating Unit (PPCU);
- (xi) presenting the first draft of the policy to the stakeholders;
- (xii) preparing the second and final draft;
- (xiii) presenting the final draft to the Ministry responsible for science, technology and innovation;
- (xiv) submission of the policy document to Cabinet by the said Ministry.

### **Key STI issues identified by stakeholders**

The S&T stakeholders identified ten key STI issues as follows: (i) Public Understanding of S&T, (ii) S&T Education and Training, (iii) S&T Priorities and Policy Initiatives, (iv) R&D and Innovation, (v) S&T Management, (vi) Investment in S&T, (vii) Coordination and collaboration, (viii) S & T culture, (ix) Industrial Development, and (x) Indigenous Knowledge Systems. Furthermore, the stakeholders noted that there are several important cross-cutting issues.

### **Cross-cutting STI issues identified by stakeholders**

Experiences of Swaziland and elsewhere have revealed that there are many cross-cutting issues that must be included when planning socio-economic development programmes. Such issues are countless to enumerate, yet they are pre-requisites to effective and efficient development initiatives. The cross-cutting issues are listed below:

- (I) Information and communication technology (ICT), (ii) Intellectual property rights (IPR), (iii) Standards for quality assurance, (iv) Biotechnology, (v) Brain drain, (vi) Statistical data, (vii) Gender equity, (viii) Collaboration and cooperation; (ix) Environmental Management, and (x) Social and human scientists.

### **Application of SWOT analysis**

A SWOT analysis approach was then employed to assess the status of STI in Swaziland, having identified STI issues that are of critical importance to socio-economic development.

Each of the ten key S&T issues and the ten cross-cutting issues were analysed by identifying the Strengths, Weaknesses, Opportunities and Threats (SWOT), based on empirical evidence. The SWOT analysis led to a number of recommendations which formed the basis for the National STI Policy framework and made it possible to derive policies related to the issues highlighted above.

### **Link between sector policies and national STI policy**

The authors found it essential to ascertain whether there were linkages between the sector policies which were enacted by Cabinet since 1995 and the National STI Policy being developed. The sector policies in question are as follows: (i) Comprehensive Agricultural Sector Policy (CASP) which encompasses four subsector policies pertaining to Food Security, Forest, Irrigation, and livestock (ii) Education and Training Sector Policy, (iii) National Energy Policy, (iv) National Environmental Policy, (v) National Gender Policy, (vi) National Health Policy; (vii) National Information and Communication Infrastructure (NICI) Policy, (viii) National Mining Policy, (ix) Non-Governmental Organization Policy, (x) National Regulatory and Quality Policy, and (xi) Technical and Vocational Education and Training and Skills Development (TVETSD) Policy. Given the importance of nurturing a close link between each of the sector policies and the National STI Policy, it was mandatory to compare and contrast the two so as to identify similarities. A close link between the sector policies and the National STI Policy was noticeable.

### **Institutional Framework for Implementation, Application, Monitoring and Evaluation of National STI Policy**

**Implementation and Application:** It was recommended that the implementation and application of the National STI Policy be the responsibility of the Ministry responsible for research, science and technology. At present, this is the Ministry of Information, Communication and Technology. The recommendation of establishing a Directorate within the Ministry was considered to be ideal and mandatory. The Director's Office would be responsible for driving the implementation of the National STI Policy and would take the overall responsibility of coordinating with all other sectors.

**Monitoring and Evaluation:** The Directorate would be responsible for monitoring and evaluating the National STI Policy. The Director would be expected to design a monitoring strategy in order to ensure that the implementation goes ahead as planned. This strategy can be designated as a monitoring index. A simple and user-friendly evaluation form would be designed to determine the impact of the implementation and application of the National STI

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Policy. The evaluation form would include the problems or issues that the policy attempts to address. There would also be a need to establish a committee to monitor the implementation as well as to evaluate the process. It was recommended that the committee be composed of representatives from relevant Government Ministries, Public Enterprises, the Private Sector and Non-Governmental Organisations. The Directorate of the Ministry would provide the secretariat.

Legal framework for implementation of the national STI policy: It was recommended that a National STI Act be enacted in order to provide a foundation for the implementation of the National STI policy. The Act would provide for the establishment of the National STI Directorate as a body corporate to serve as the apex body for guidance and coordination of all STI activities under the Director's Office in the Ministry responsible for research, science and technology. The Act would spell out the powers, functions and administration of the Directorate for the implementation, application, monitoring, evaluation and review of the National STI Policy. Furthermore, it would provide for funding, support and establishment of STI institutes, including the Science and Technology Park, and other related matters.

### **Review of National STI Policy**

It was recommended that the National STI Policy be reviewed after a period of five years, to be in line with the national development plans. This presupposes that monitoring and evaluation would have taken accurate and close analysis during the implementation and application of the National STI Policy. The review would also take into account adherence to the policies on each STI issue, as well as collaboration and cooperation among key stakeholders.

### **Lessons from the Swaziland Experience**

#### **Scanning the environment**

Scanning the environment is usually considered essential and fundamental. Why? This action enables one to better understand the surrounding or environment in which a policy is to be designed and implemented. Furthermore, it provided possible answers or responses to all key questions.

#### **Recognition of existing sector policies**

It is usually recommended that all existing sector policies must be recognized and considered. The rationale is that (i) they provide guidance in identifying gaps and overlaps in the policies, (ii) one gets the opportunity to know which sector policies exist in the country, (iii) it is

established which Ministries are in-charge of each sector policy, and (iv) it is established whether or not the sector policies have been approved.

### Identification of stakeholders

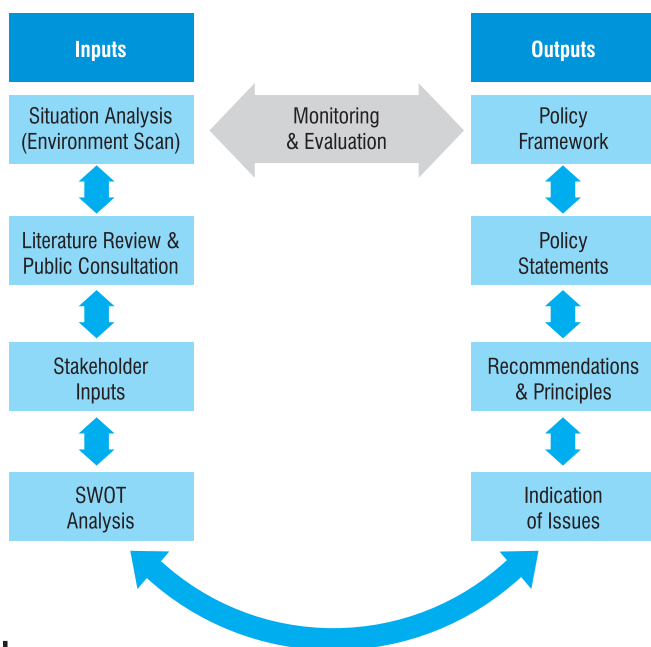
Identification of STI stakeholders serves several purposes. It provides insights into (i) those who are interested in STI, (ii) the public opinion regarding STI, and (iii) value the public places on STI.

### Consultation with Stakeholders

A wide consultation with many stakeholders opens up very rich insights into planning future actions such as the policy development process, development of an Act and debate of bills.

### Involvement of stakeholders

Involvement of stakeholders, including politicians, serves several purposes. First, the concept of the buy-in is served. Furthermore, it emphasizes the departure from planning for the people to planning with the people. According to Boyle (1981), involvement of stakeholders serves the following: (i) educability of people, (ii) securing consent of the stakeholders, (iii) gaining better insights about wishes and needs of stakeholders, (iv) social therapy, that is,



**Figure 1:**  
**Interactive model**  
**illustrating the process of**  
**developing the Swaziland National STI Policy.**

enabling everyone to speak out, (v) opportunity to teach stakeholders, (vi) a means to alter power structure, (vii) a strategy to legitimize any programme, (viii) mobilizing resources, and (ix) an end in itself.

### **Summary of Policy Development Processes**

In Figure 1, the process of developing the Swaziland National STI Policy is presented. The representation is in terms of inputs and outputs. This diagram is referred to as the interactive model and a proposed roadmap to guide the process of developing the policy.

### **Conclusion**

The aim of this paper was to share experiences and insights gained by the authors when undertaking national surveys, in 2008 and 2009, pertaining to the state of STI in Swaziland. The two surveys made it possible to identify potentials and constraints for STI in the country and provided a base for the authors to develop the Final Draft of the National STI Policy which was presented to the Ministry responsible for S&T in July 2011. The use of SWOT analysis in the course of developing the policy was found to be invaluable and very informative. Deliberations and debates by stakeholders drawn from a wide cross-section of the Swaziland economy led to recommendations that enabled the authors to come up with concrete policies for each of the key and cross-cutting S&T issues that had been identified. The involvement of Members of both Houses of Parliament and the Public Policy Coordinating Unit from the initial stages of policy formulation was paramount, as both parties play a critical role in the final stages of policy development. The need to link policy research with policy development cannot be overemphasized.

### **Recommendations**

On the basis of the Swaziland experience, the authors consider the following to be, key to policy development:

- (i) A survey should be conducted to identify potentials & constraints for STI policy development.
- (ii) Research policy should precede policy development as a foundation.
- (iii) There is need to use, among other tools, a SWOT Analysis to pull out key and cross-cutting issues.
- (iv) Engagement of a cross-section of stakeholders, including Parliamentarians, is inevitable.

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# 19. Linking Livestock Research to Policy in Nigeria: Lessons from the Nigeria Institute of Animal Science

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## **Abstract**

*The present study examines the role of the Nigerian Institute of Animal Science in midwifing and nurturing the links between university research and industry. The Institute was established by Act No. 26 of 2007 as an agency to regulate the profession of Animal Science in Nigeria. Amongst other functions of the Institute is to promote and coordinate research efforts and other studies for the advancement of any of the aspects or branches of Animal Science and to disseminate information relating to research results and modern Animal Production skills and technology. The Institute is run by a Council which has in its composition, the country's Ministers of Agriculture, Education, Water Resources, Science and Technology, and Environment or their representatives. Also on the Council are representatives of the Nigerian Chamber of Commerce, Industry, Mines and Agriculture, Agro-allied Industries and State Directors of Livestock Services. The composition of the Institute's Council is the first enabling interphase that has brought all stakeholders in the livestock sector together.*

*The Institute is thus in the forefront of providing an institutional arrangement to midwife and nurture the hitherto missing links between university research and industry. Through the interaction at Council meetings, researchers get acquainted with the problems of the industries and in turn re-direct their researches towards solving these problems. It is concluded that the Nigerian Institute of Animal Science by creating an enabling platform for practitioners in livestock sector and the universities to meet have helped Animal Scientist in*

*Nigeria to do more demand driven research. This is a great result and lesson to be copied if we must advance research to the end users.*

**Keywords:** *Linkage, Livestock, Research, Policy, Intervention, Nigeria*

## **Introduction**

Animal Scientists in Nigerian Universities, research institutes, governmental and non-governmental outfits have researched vigorously into improving the genetic, nutrition, physiology and environment of the various livestock species found in the country. Unfortunately, these research outputs in most cases end up as hard copies of project reports, technical papers, conference proceedings and journal articles. The import is that the potential end-users of these important research outputs and the forerunners of these outputs such as the agricultural extension agencies are totally disconnected from the research results. These end users not aware of the research findings are left with no other option than to continue animal production the former ways they were used to. There is a disconnect between livestock research and policy.

It has been observed that innovation, whether in technological, management or organizational forms is a requisite for accelerated productivity and sustainable growth of the economy. There is today increased paradigm shift from a 'knowledge pipeline' approach to innovation web model of knowledge generation, transmission and utilization (Eboh, 2011). Nigerian Universities appear to be under-providing scientific and research products and innovations to industry (profit enterprises, including agriculture, manufacturing, construction, trade and services).

The situation is also exemplified by the under-utilization of research in policy making while the former situation is attributable to lack of effective linkages between research and private enterprise, the latter similarly reflect poor links between research results and policy making. This undesirable situation is underpinned by cross-cutting weaknesses in communication, organization, institutional frameworks and incentive structures. Existing innovations and products are not properly and adequately communicated and disseminated to end users in forms and manners that will elicit desired buy-ins. Very often, the organized private sector depend on research and innovation systems other than the universities for scientific solutions to practical productions, business and management tasks. Eboh (2011) reported that there is currently inadequate and in some cases, non existing operating framework for multilateral partnering and innovations networking of the Universities, business community and government. As a result, the Universities are not sufficiently serving the needs of industry.

Essentially there is poor correspondence between expectation/needs of the private sector and the research priorities in the Universities. Where they exist, they are dominantly weak and unorganized.

The above assertion by Eboh reflects the general research – policy divide in Nigerian Universities. It is in realization of this research policy disconnect that the Nigerian Institute of Animal Science (NIAS) has taken the bold step to bridge the research policy divide as concerns livestock research in Nigeria. The present paper examines the possible lessons to be learnt from the activities of NIAS in bridging the research – policy divide in Nigeria.

Historically, livestock development was heralded in Nigeria in 1900 with the establishment of a sheep and goat centre in Olokemeji, near Ibadan. The primary attention of the then colonial livestock administration was focused on animal health and disease control. A veterinary research laboratory was established in Vom in 1922 which later became a centre for research in vaccine production (Ayoola, 2001). In 1954 – 1967 only the regions had constitutional mandate to pursue agricultural development including livestock. Ayoola 2001 further submitted that livestock development with veterinary component subsumed was part of the goal of regional Agriculture Ministries. However, following the creation of the first Agriculture Ministry at the Federal level in 1967, the Federal Livestock Department (FLD) was established.

What appears to be a conscious articulation of a policy document for livestock development in Nigeria was launched in 1988 by the then Federal Ministry of Agriculture, Water Resources and Rural Development. The livestock policy objectives as contained in that policy document according to Ayoola (2001) are to:

- > Make Nigeria self-sufficient in the production of livestock products
- > Improve the nutritional status of Nigerians through the domestic provision of high protein rich livestock products
- > Provide locally all necessary raw materials inputs for the livestock industry
- > Allow for a meaningful and efficient use of livestock by-products
- > Improve and stabilize rural income emanating from livestock production and processing
- > Effectively protect the rural livestock farmer from the unpredictable vagaries and risks incidental to livestock production
- > Provide rural development opportunities through expanded livestock production and processing and
- > Effect proper land use and maintenance of the ecosystem for expanded livestock production.

Ayoola (2001) further observed that Nigeria has implemented four official plans in the post-independence period, but it still fails to meet the stated livestock objectives. Each plan has consisted of programmes and projects which are articulated within the existing policy framework and financed systematically on annual basis through the budget. In many instances the implementation is carried out directly by the livestock department of the Agriculture Ministry (state/federal). In some other instances separate self-accounting parastatals may serve as implementation agency having an autonomous management status.

It is established that there is a disconnect between plan allocation and budget allocation revealing a poor funding or implementation commitment of government in the medium term, divergence between the actual release and the actual expenditures which suggest weak programme accountability among the executors (Ayoola, 2001).

### **Bridging the Livestock Research – Policy Divide: Lessons from the Nigerian Institute of Animal Science**

The Nigerian Institute of Animal Science was established by Act. 26 of 2007, as a regulatory agency for the practice of Animal Science in Nigeria. Persons holding Bachelor's Degree in any Animal Science discipline or such degree recognized by the Council of the Institute as equivalent from any accredited Institution in Nigeria or abroad and has in addition had five years approved post-graduation or post qualification working experience are eligible to be registered as members of the Institute.

The Institute is run by a governing council which has in its composition the country's Ministers of Agriculture, Education, Water Resources, Science and Technology and Environment or their representatives. Also on the Council are representatives of the Nigerian chamber of Commerce, Industry, Mines and Agriculture, Agro-allied Industries and State Directors of Livestock services. There is also a representative of the Universities on the Council. This Council's composition is the first enabling interphase for all stakeholders in the livestock industry. This common meeting point is in tandem with recommendation of the Overseas Development Institute that for RAPID outcome mapping approach there should be an effective link between institutional partners and practitioners working on evidence based policy processes (Overseas Development Institute, ODI, 2009). The Institute since inception has held several stakeholders meeting with livestock practitioners on a yearly basis in the six major geopolitical zones of the country. At its 2nd Annual General meeting held in Kano on 27th July 2010, the President of the Institute (Prof. Placid Njoku) reported that the following National livestock stakeholder's summits were held:-

- > Poultry farmers summit, Ibadan
- > Pig farmers summit, Lagos
- > Sheep and Goat farmers summit, Katsina
- > Cattle farmers summit, Maiduguri
- > Feed millers summit, Benin City
- > Micro – livestock farmers summit, Enugu
- > Feed Ingredients manufacturers and suppliers summit, Kano

These fora enable practitioners in the livestock sector to benefit from the immense research output of experts from universities and research institutes. It is also an avenue for researchers to have first-hand information of the problems of the practitioners. It is the proceedings of these fora that brought to bare how deficient and ill equipped most Animal Science graduates from our universities were to handle the problems of the farmers. Council has thus amended the undergraduate curricula to have more practical components. Animal science graduates must have a one year internship in a farm to qualify as graduate members of the Institute. This action of NIAS is in agreement with International best practices. For example one of the mechanisms of the Medical Research Council of the United Kingdom is to bring together its researchers with industry, include networking events for academics and industry representatives, funding joint projects and linking units and industries [[www.mrc.ac.uk/sciencesociety/Researchbenefitsociety/index.htm](http://www.mrc.ac.uk/sciencesociety/Researchbenefitsociety/index.htm)].

The Institute established centres of excellence in six universities in the country. These centres of excellence are properly equipped with the state of the art laboratory equipment that will help researchers do better work. This has helped to upgrade the quality of Animal Science graduates from the Universities and make them better qualified to meet the needs of the Industries and farmers.

In 2010, the Institute initiated Mandatory Continuing Professional Education (MCPE) Program which is aimed at enhancing the professional competences for Registered Animal Scientists. The President of the Institute in his address during the 2nd AGM of the Institute observed that the MCPE program will ensure that members are up to mark with current trends and practices in the profession. This programme will further enable members to update their knowledge and thus better equipped to meet the needs of their numerous clientele.

The Institute has also established collaboration with the following bodies:-

- > American Registry of Professional Animal Scientist.

- > American Dairy Science Association
- > Poultry Science Association
- > Canadian Society of Animal Science

At the 2nd AGM of the Institute, the Institutes President reported that the collaborations will be for purposes of cooperation in education, programs and joint certification. He further submitted that the Institute proposed joint activities such as mutual recognition, concurrent registration, exchanges of regulatory information between the Institute and collaborating partners. The Institute had also submitted a memorandum to ALCORN State University Mississippi for a partnership with the Institute in staff and student exchanges, collaborative research and in establishment of a Swine Research and Development centre at Enugu.

It is interesting to note that these collaborations will enable the Institute in contributing to training of practitioners that will be fit and proper to practice Animal Science in Nigeria and even globally.

The Institute in 2010 began a comprehensive livestock Audit in Nigeria. The Audit will help to identify and locate the various livestock husbandry practices obtainable in the different states of the federation. The result of such audit is already being felt. There is already a bill before a state house of assembly seeking to regulate the manufacturing and sale of livestock feeds in the state.

Such a policy will help ensure that only qualified persons are into the business of livestock feeds manufacturing, thus promoting animal production and ensuring that only safe animal products get to the final consumer. Agricultural extension agencies can utilize results from the report to target development initiatives and programs for livestock farmers with the aim to boost production, minimize animal health problems and encourage the utilization of animal products in Nigeria.

### **Conclusion**

The activities of the Institute have helped to bridge the research-policy divide in the country as it affects livestock industry. The emergence of the Institute has helped to create an enabling platform for practitioners in livestock sector and the universities to meet. Animal Scientists in Nigeria working with other stakeholder actors already identified above are now better repositioned to do more demand driven researches that will provide answers to the problems of the livestock industry.

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# Section 5

## The Role of Capacity Development

# 20. Women Entrepreneurship as a Cutting Edge for Rural Development in Nigeria

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## **Abstract**

*Rural development is more than ever before linked to entrepreneurship. Institutions and individuals promoting rural development now see entrepreneurship as a strategic development intervention that could accelerate rural development process. Furthermore, institutions and individuals seem to agree on the urgent need to promote rural enterprises; development agencies see rural entrepreneurship as employment potential, politicians see it as the key strategy to prevent rural unrest; farmers see it as an instrument for improving farm earnings; and women see it as employment possibility near their homes which provides autonomy, independence and reduced need for social support. To all these groups, however, entrepreneurship stands as a vehicle to improve the quality of life in communities and to sustain a healthy economy and environment.*

*Without entrepreneurial capabilities which are well developed or potentially available, external funds will be wasted on projects that will not provide long term economic growth. Rural entrepreneurship stimulates local entrepreneurial talent and subsequent growth of indigenous companies; it finds a unique blend of resources either inside or outside of agriculture.*

*Therefore to accelerate economic development in rural areas, it is necessary to increase the supply of entrepreneurs, thus building up the critical mass of first generation entrepreneurs who will take risk and engage in uncertainties of new venture creation, create something from practically nothing and create values by pulling together a unique package of resources to exploit. The paper therefore deals with the following three issues: firstly, it sets out reasons why promoting entrepreneurship is a force of economic change that must take place if*

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*many rural communities are to survive, secondly, it deals with what policies are necessary in order to create an environment in rural areas conducive for entrepreneurship and thirdly, it considers developing and promoting of women entrepreneurship as a way for sustainable rural development in Nigeria.*

**Keywords:** *Entrepreneurship, rural development, economic policies, entrepreneurial skills and women empowerment.*

### Introduction

The achievement of political independence in Nigeria in 1960 brought with it a high sense of expectations from the citizenry for social and economic development. Successive government in the country have adopted various policy strategies ranging from import substitution to Structural Adjustment Programme (SAP) aimed at making the country one of the greatest economies in the world. However, in spite of these policies and programmes and abundant resources the country is endowed with, majority of Nigerians have continued to wallow in abject poverty, diseases and ignorance.

Rural development was therefore adopted as a new strategy (bottom up strategy) that will make Nigeria one of the greatest economies in the world. Unfortunately, after over three decades of 'romance' with this strategy, the results have not been impressive compared to the resources that have been invested. A number of reasons have been advanced to explain why rural development has failed to make the country develop. The first reason was that majority of Nigerians live in the rural areas but most of the resources are not directed to rural development. In 1963 census, 80.7 % of the national population was resident in the rural areas. By 1985 this population has gone down to 70.13% and by 1991 census went down to 61%. For overall economic development in Nigeria, the rural areas must be developed. Failing which, the gap between the urban and the rural development will persist and even get worse. Furthermore, closing this gap requires active participation of women – that make up half of the population – in order to support security and regeneration of economic, natural, human and social resources. Thus women should be systematically included in the development.

Rural development is more than ever linked to entrepreneurship. Institutions and individuals promoting rural development now see entrepreneurship as a strategic development intervention that could accelerate the rural development process. Furthermore, institutions and individuals seem to agree on the urgent need to promote rural enterprises and both see entrepreneurship as a vehicle to improve the quality of life of individuals, families and communities, and to sustain a healthy economic environment.

The paper therefore deals with the following issues: It

- (1) Examines Nigeria's experience in rural development;
- (2) Underscores the promotion of entrepreneurship as a force of economic change;
- (3) Highlights the necessary policies for creation of entrepreneurship environment in rural areas; and
- (4) Considers women entrepreneurship as a way of sustainable rural development in Nigeria.

### **Concept of Entrepreneurship**

The entrepreneurship concept is the foundation for policies promoting entrepreneurship and the key to understanding the role of entrepreneurship in rural development. Defining entrepreneurship is not an easy task. There are scholarly books on the subjects (Byrd, 1987). According to Byrad (1987), entrepreneurship primarily means innovation, to Petrin (1991), it means risk-taking, to Tyson et al (1994), it is a market stabilizing force and to Jone and Sakong (1981), it means starting, owning and managing a small business. Accordingly, the entrepreneur is then viewed as a person who either creates new combinations of production factors such as new methods of production, new products, new markets, finds new sources of supply and new organizational forms; or as a person who is willing to take risks; or a person who, by exploiting market opportunities, eliminates disequilibrium between aggregate supply and aggregate demand, or as one who owns and operates a business (Tyson et al., 1994).

A definition of entrepreneurship in the context of rural development should incorporate the entrepreneurial skills needed to improve the quality of life for individuals, families and communities and sustain a healthy economy and environment. Taking this into consideration, we will find that each of the traditional definitions has its own weakness (Tyson et al., 1994). The first definition leaves little room for innovations that are not on the technological or organizational cutting edge, such as, adoption of older technologies in a developing-country context, or entering into export markets already tapped by other firms. Defining entrepreneurship as a risk-taking venture neglects other major elements of what we usually regard as entrepreneurship, such as a well-developed ability to recognize unexploited market opportunities. Entrepreneurship as a stabilizing force limits entrepreneurship to reading markets disequilibria, while entrepreneurship defined as owning and operating a business, denies the possibility of entrepreneurial behaviour by non-owners, employees and managers who have no equity stake in the business. Therefore, the most appropriate definition of entrepreneurship that would fit into the rural development context, argued here, is the broader one, the one which defines entrepreneurship as: “a force that mobilizes other resources to meet unmet market demand”, “the ability to create and build something from

practically nothing”, “the process of creating value by pulling together a unique package of resources to exploit an opportunity”. It combines definitions of entrepreneurship by (Jones and Sakong, 1980; Timmons, 1989; Stevenson, et al., 1985).

Entrepreneurship so defined, pertains to any new organization of productive factors and not exclusively to innovations that are on the technological or organizational cutting edge, but pertains to entrepreneurial activities both within and outside the organization. Entrepreneurship need not involve anything new from a global or even national perspective, but rather the adoption of new forms of business organizations, new technologies and new enterprises producing goods not previously available at a location (Petrin, 1991). This is why entrepreneurship is considered to be a prime mover in development and why nations, regions and communities that actively promote entrepreneurship development, do demonstrate much higher growth rates and consequently higher levels of development than nations, regions and communities whose institutions, policies and culture hinder entrepreneurship.

### **Concept of Rural Entrepreneurship**

Rural development according to Bayero (in Mundi and Zakaria 2007) is the process whereby concerted efforts are made in order to facilitate significant increase in rural resources productivity with the overall objectives of enhancing rural income, increasing employment opportunities and upgrading rural communities. A more comprehensive and encompassing definition is the one given by Ndubisi (1992:218) that rural development is the development of moral, social, political and economic potentials of rural communities to enhance their economic self-reliance through provision of appropriate infrastructures such as pipe-borne water, electricity, good roads and small-scale industries; increase in their political consciousness and participation and promotion of their moral and social well-being which result in tolerance, good disciplines, justice, fairness, kindness, love and peace.

From the above, one can deduce that rural development simply means changing the social, political and economic lives of the people living in the rural areas. The provision of social amenities such as roads, hospitals, water, electricity and modern agro-inputs, among others, will enhance their productivity and welfare. Rural development goes concurrently with sustainable development. The World Commission on Environment and Development (WCED) report defines sustainable development as “development that meets the need of the present without compromising the ability of the future generations to meet their needs (Adeokun, 2000)”. Aina et al. (1992) gave a similar but more comprehensive definition of sustainable development. They see it as a process in which the exploitation of resources, the direction of investment and orientation of technological development and institutional

changes are all in harmony and enhance both present and future potential to meet human needs and aspirations.

In this sense sustainable development reconciles economic growth of the present and that of the future. It focuses on social justice and well-being of the urban and rural man, as well as equal distribution and utilization of resources. Sustainable rural development approach calls for social and economic development that meets the needs of the present and that of the future generations in the rural areas.

### **Nigeria's Experience on Rural Development**

Since political independence in 1960, successive Nigerian governments have been grappling with how to develop the rural areas. This is in realization of the fact that rural development is the focal point of the overall economic development. Consequently, government invested enormous resources in order to pursue rural development, which has become an article of faith and wonder formula for replacing poverty with prosperity in the country. Various policies and programmes meant to transform the rural areas were therefore set and implemented by the government. Even the development plans were geared towards the development of the rural areas. For instance, the 1962-68 and 1970-74 plans emphasized agricultural development as a strategy for the development of the rural areas. More specifically, the programmes adopted for rural development ranged from the 'subsidy approach' to the rural areas, in order to stimulate growth and development, to the 'packaged approach', which includes the Agricultural Development Programmers (ADPS) that were all sponsored by the World Bank" (Ayodele 2003:23).

Other programmes that were launched, funded and piloted included 'Entrepreneurship Development Work for Yourself', EDWY (1971), National Accelerated Food Production Programme, NAFPP (1972), Operation Feed the Nation, OFN (1976), later Green Revolution (1979), Mass Mobilization for Social and Economic Recovery, MAMSER (1988), the Directorate for Food Rural Roads and Infrastructure, DIFFRI (1987), to the present day National Poverty Eradication Programme, NAPEP (2000), Poverty Alleviation Programme, PEP (2002), National Economic Empowerment and Development Strategy, NEEDS (2004), to mention a few. The objectives of these programmes were to develop the rural areas through boosting agricultural production, provision of roads, water, electricity, and to operate and administer land among others. The objectives of these programmes are very laudable and commendable but effective performance of each of them depends on a number of factors, some of which are:

1. Ground work acceptance of the institution, that is, the extent it is accepted by the local community and their level of involvement from the planning to the implementation stage;
2. Human and financial resources allocated for the running of the programme;
3. The specificity of the functions, that is the extent to which they are not overlapping with the responsibilities of other agencies;

### **And the stability of continuity even after there is change in government.**

Unfortunately, performances of these institutions have not been impressive. This means the benefit of these rural development programmes have not trickled down to the masses and have not in any way justified the massive investments in them by the government. This also means that the people rural population have continued to wallow in abject poverty, diseases and misery. The country has continued to spend large amount of money on importation of food and other basic necessities of life. The major factors being that there is lack of entrepreneurial skills, poor women empowerment, lack of user- participation in planning and execution, official corruption in terms of inflated contracts and invoices. Hence, the earlier programmes like DIFPRI, OFN and MAMSER have since been put in oblivion.

### **Rural Entrepreneurship as a Force for Economic Change**

Many examples of successful rural entrepreneurship can be found in literature. Diversification into non-agricultural uses of available resources such as catering for tourists, blacksmithing, carpentry, spinning, etc. as well as diversification into activities other than those solely related to agricultural usage, for example, water, woodlands, buildings, available skills and local features, all fit into rural entrepreneurship. The entrepreneurial combinations of these resources are, for example: tourism, sport and recreation facilities, professional and technical training, retailing and wholesaling, industrial applications (engineering, crafts), servicing (consultancy), value added (products from meat, milk, wood, etc.) and the possibility of off-farm work. Equally entrepreneurial, are new uses of land that enable a reduction in the intensity of agricultural production, for example, organic production.

Dynamic rural entrepreneurs can also be found. They are expanding their activities and markets and they find new markets for their products and services beyond the local boundaries.

Women are behind in entrepreneurship development. Too often their names are not specifically mentioned, although evidence shows that there are many activities in rural areas pursued by female entrepreneurs such as trade, food processing, handicrafts, production of

basic consumer articles, catering, running tourist establishments, and bed and breakfast arrangements. However, compared to male entrepreneurs, female entrepreneurs in rural areas still tend to be limited to what has traditionally been viewed as women's activities. Also, the scale of their entrepreneurial operation tends to be smaller when compared with male entrepreneurs.

Although agriculture today still provides income to rural communities, rural development is increasingly linked to enterprise development. Since national economies are more and more globalized and competition is intensifying at an unprecedented pace, affecting not only industry but any economic activity including agriculture, it is not surprising that rural entrepreneurship is gaining importance as a force of economic change that must take place if many rural communities are to survive. However, entrepreneurship demands an enabling environment in order to flourish.

### **Environment Conducive for Entrepreneurship**

For successful rural entrepreneurship, there must be some sort of institutional support. Besides individual or group entrepreneurial initiative the enabling environment supporting these initiatives is of utmost importance.

The creation of such an environment starts at national level with the foundation policies for macro-economic stability and for well-defined property right as well as international orientation. Protection of the domestic economy hinders, instead of fostering entrepreneurship. National agricultural policies such as price subsidies to guarantee minimum farm incomes and the keeping of land in production when over-production already exists are definitely counterproductive to entrepreneurship. The long run solution for sustainable agricultural development is competitive agriculture. While prices can set the direction, entrepreneurs who will meet the challenge of increasingly demanding international markets and who will find profitable alternative uses of land, alternative business opportunities and so on are needed. Therefore, policies and programmes targeted more specifically at the development and channelling of entrepreneurial talent are needed. Policies to increase the supply of entrepreneurs, policies developing the market for other inputs into successful entrepreneurship, policies for increasing the effectiveness of the entrepreneurs and policies for increasing demand for entrepreneurship can significantly speed up entrepreneurial activities at national, regional and community levels.

The policies and programmes targeted specifically to the development of entrepreneurship do not differ much with respect to location. From the perspective of the process of



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entrepreneurship, whether the location is urban, semi-urban or rural is not important in itself. For example, the needs of a would be entrepreneur or an existing small business do not differ much from those in an urban area. To realize their entrepreneurial ideas or to grow and sustain in business, they all need access to capital, labour, markets and good management skills. What differs is the availability of markets for other inputs.

The inputs into an entrepreneurial process, capital, management, technology, buildings, communications and transportation infrastructure, distribution channels and skilled labour, tend to be easier to find in urban areas. Professional advice is also difficult to come by. Consequently, entrepreneurial behaviour, the ability to spot unconventional market opportunities, is most lacking in those rural areas where it is most needed i.e., where the scarcity of other inputs is high.

There are reasons why rural entrepreneurship is more likely to flourish in those rural areas where the two approaches to rural development, the bottom up and the top down, complement each other. Developing entrepreneurs require a much more complex approach to rural development. It requires not only the development of local entrepreneurial capabilities but also a coherent regional/local strategy. Evidence shows that where this is the case, individual and social entrepreneurship play an important role in rural economic, social and community development. The top down approach gains effectiveness when it is tailored to the local environment that it intends to support, the second prerequisite for its success is that ownership of the initiative remains in the hands of members of the local community. The regional development agencies that fit both criteria can contribute much to rural development through entrepreneurship.

Other institutions that can make a difference to rural development based on entrepreneurship are agricultural extension services. However, to be able to act in this direction, they too must be entrepreneurially minded. They must see agricultural activities as one of many possible activities that contribute to rural development. They must seek new entrepreneurial uses of land and support local initiatives in this respect. While tradition is important it is nevertheless dangerous to be over-occupied with the past, otherwise the rural community may turn into a nostalgia-driven society. Networking between different agencies involved in the promotion of rural development through entrepreneurship, by pooling together different sources and skills, by reaching a greater number of would be entrepreneurs and by assisting a greater number of local entrepreneurial initiatives, can have a more positive effect on rural development than when each agency is working on its own.

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Entrepreneurship in rural areas can benefit a lot from the so called strategic development alliances, i.e., partnership among governments or non-profit seeking organizations, universities and private sector.

To summarise, policy implications for rural entrepreneurship development are:

- > Sound national economic policy with respect to agriculture, including recognition of the vital contribution of entrepreneurship to rural economic development.
- > Policies and special programmes for the development and channelling of entrepreneurial talent;
- > Entrepreneurial thinking about rural development, not only by farmers but also by everyone and every rural development organization; and
- > Institutions supporting the development of rural entrepreneurship as strategic development alliances.

### **Women Entrepreneurship and Sustainable Rural Development in Nigeria**

Rural development is concerned with the improvement of the living standards of over 70 percent of the population of the country living in rural areas. To make the process sustainable involves the participation of all segments of the population and requires the development of skills, capacity and institutions to ensure effective use of resources and enhanced productivity. In this regard the involvement of women is crucial to the achievement of sustainable rural development in the country.

Women entrepreneurship is necessary for sustainable rural development because, despite the fact that women make up more than 50 percent of Nigerian population, they encounter many constraints when trying to take part in the transformation process. Rural areas tend to be more traditional in regard to the gender issue. In rural areas, the gender issue is usually a much stronger hindering factor to potential female entrepreneurs than it is in urban areas. Their self-esteem and managerial skills are lower when compared to urban women and access to external financial resources more difficult than in urban areas.

Therefore, special programmes of assistance (technical and financial) to overcome these constraints should be developed and designed to meet the needs of rural women in order to be able to take active part in entrepreneurial restructuring of their communities; to start to develop their own ventures, to expand their already existing business, or to function as social entrepreneurs since their number today is still below the potential one.

Women entrepreneurship involves women empowerment which according to Azikiwe in (Oluwamimo, 2011) means “raising the awareness and consciousness of women towards act and laws that are detrimental to their progress and survival, it means giving women the authority and legal power to participate without any hindrance”. Karl (in Lamidi, 2006: 109) affirms this when he noted that it is a process of awareness and capacity building leading to greater participation in decision making process, control and transformation actions, so as to enable them perform better towards improving themselves, their families and society as a whole.

In whatever perspective one looks at it, women empowerment entails strengthening their existing skills and capacities, equal access to participation and decision making in social, political and economic life of the society. It also means equal access of women to health care, quality education, employment, equal remuneration, occupational health and safety, social security and public office among others. Women empowerment will therefore lead to the sustainable development of the rural areas in the following ways:

- > Providing the women the opportunity to participate and contribute to the health and well-being of their families. Illiteracy is associated with poor nutrition which makes family members vulnerable to diseases and unproductive.
- > An empowered women guarantees enhanced family health which makes the process of developing the rural areas realistic, sustainable and rapid.
- > Again empowerment offers women the opportunity to acquire competence and technological capabilities that are critical assets normally employed in developing the rural areas. This makes women to produce effectively to increase the income and the well-being of their families.
- > Women empowerment will also expand their frontiers since it equips them with the skills and competence to work in all spheres of the economy. This also makes women active agent of rural development through agriculture, trade and industry. Women empowerment is generally agreed to be the appropriate strategy and tactics for enhancing the participation of women in politics, governance and decision making. It also gives women the courage to compete with men in election and political appointments. This will again attract freedom and respect, and earn them equal treatment with men. For sustainable rural development, women's participation in politics and governance must be achieved.
- > Women provide the back bone of rural economy. They make up 68.8 percent of the agricultural labour and produce about 80 percent of Nigeria's food output (Oluwamimo, 2001:63). This means that women empowerment will offer them the technical capabilities and knowledge necessary for modern agricultural operations. This makes

the provision of food for the teeming population of the country sufficient and therefore results in sustainable rural development. Empowering women through education and equal access to credit facilities will enable them to compete favourably with men in the labour market. It will also give them the capital needed for the establishment of agro-allied industries required for the rapid and sustained development of the rural areas. The success of rural development programmes is dependent on the cooperation between men and women. It means therefore that women have to be given the required support to make them active participants in the development process. Empowering women will give them self-esteem and freedom from men servitude. This will then enhance their productivity and consequently, promote rural development.

### **Recommendations**

In view of the important role entrepreneurship play in the process of development and based on the fact that most women live in the rural areas and are actively engaged in the development of such areas, the following recommendations are made to enhance their status and role in sustainable rural development:

- > Government and Non-Governmental Organizations (NGOs) should organise entrepreneurship training in the rural areas in order to facilitate the adoption of new innovations in the rural areas;
- > Rural entrepreneurs should establish common projects such as:
  - Collective marketing,
  - Bulk purchasing,
  - Common facilities, e.g. to share machinery and equipment; warehouse, vehicle or office facilities,
  - Group-owned enterprises,
  - Training programmes in order to improve themselves and their enterprises.
- > Government should support the initiatives of groups, private sector associations and communities to develop their self-help programmes.
- > Government should encourage and improve the implementation of existing regulations.
- > Government should strengthen the public administration to make the regulatory and administrative environment more conducive for rural entrepreneurs, especially, the females among them.
- > Rural development policies and programmes such as extension services and micro-credit facilities should be extended to women. A gender biased strategy should be seriously discouraged

- > Corruption which is the major avenue for siphoning public funds meant for women empowerment should be eradicated in Nigeria. This calls for the support and strengthening of the Economic and Financial Crime Commission (EFCC) to fight this menace.

### **Conclusion**

This paper concludes that entrepreneurship and women empowerment must be achieved, if the process of rural development must be sustainable. This is due to the fact that entrepreneurship guarantees the actors' high status, self-esteem and dignity as well as the skill necessary for rural development.

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# Section 6

## **Research Uptake, Communication, Advocacy, and Brokerage**

# 21. Towards Effective Research Uptake and Innovative Communication of Development Research Projects in Nigeria

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## **Abstract**

*Many studies have been undertaken in the direction of identifying why research results do not translate into development in Africa. Similarly much has been written on why there is innovation deficit in the research systems of many countries, including Nigeria. A common consensus that seems to run through the works of authors that have engaged in these debates is that, it is not only important to possess adequate scientific knowledge, but also be able to translate such body of knowledge into innovation and commercial outputs for socio-economic development. The importance of this common consensus underscores the relationship that should ideally exist among the key stakeholders in the process of research uptake and therefore a move from theory to practice. Research uptake, is a concept that is increasingly gaining concern among scholars. Research uptake is defined in this paper as ... “the process of becoming aware of and accessing research outputs and the institutions, policies, systems and mechanisms supporting this process. This process includes innovative communication strategies as one component, which goes beyond the broad communication of research findings by engaging with potential research users in different ways and at different levels. It also includes making research available and accessible to users, particularly, by creating an enabling environment. This would usually involve interacting with other stakeholders beyond intended end users – in particular policy makers.” Research uptake is however not a one-size-fits-all mechanism. Different types of research results, and depending on the stakeholders, will often require different types of uptake mechanisms and strategies. Major activities involved in research uptake include the following among others: dissemination of research findings; capacity development; collaboration between researchers and users; incentives and reinforcement; enabling environment, and research on research uptake and use. This paper hypothesizes that innovative communication strategies will*



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*enhance effective research uptake of development research. The focus on development research in this paper is from the lessons of experience of the authors in socio-economic research in Nigeria. The paper starts from a conceptual perspective and provides insights and better understanding of the steps involved in research uptake. It highlights the current patterns of research uptake in Nigeria, and also presents ways in which socio-economic research results are communicated. The paper makes suggestions on innovative communication strategies to ensure effective uptake of research results in Nigeria.*

**Keywords:** *Research Uptake, Innovative, Communication, Development, Nigeria*

**Sub-theme:** *Research uptake, innovative communication, advocacy and brokerage*

### Introduction

A research process is driven by a combination of reasons which are often subjective to the nature and type of research being undertaken. The most common reason why any research is undertaken is “problem-solving” with a view to contribute to knowledge. Within the policy research domain, the research is expected to demonstrate a problem-solving attribute in the attempt to know about the behaviour of the “system” under analysis, and consequently package the “emergent intelligence” such that there is informed decision-making to assist resultant interventions. An attendant reason for undertaking research in the academic field is to publish in the research information market place to demonstrate professionalism of science (Nwagwu, 2005). It can therefore be assumed that for whatever type of research, there is most likely a tendency to focus on problems in the local environment, and this is important in order to ensure that the research has a coupling effect (demand and supply), and hopefully will be of commercial use to the intended beneficiaries of the research output. What this means is that the influence of donor agencies as criteria for choice of national programmes and activities need to be reduced. Overly dependence on donor agencies for direction has always been one of the major limitations in the African Continent, and a result of this situation is that programmes and research activities in this category often do not take local conditions into consideration when choosing themes, thus producing knowledge that may not be directly relevant to the local development agenda.

It is expected that the scientist/researcher, work in conjunction with the stakeholders<sup>34</sup> of the research. The process of identifying the actual stakeholders in the system that is being

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<sup>34</sup> *Sometimes the stakeholder may have an immediate problem that it needs help on and enter directly into dialogue with the research community/scientists. In other cases the researcher/scientist may have specialist knowledge about likely future events and suggest the need for a suitable project which could enable better decisions to be made.*

investigated and the general pattern of their interrelationships is an important aspect that is useful for understanding the expected outcomes of the research process, particularly the research uptake.

### **Conceptualizing Research Uptake**

There is growing research interest on the subject of research uptake and communication of development research {Garforth and Usher, (1997); Lomas, (1997); Cross et al,(2000) and Jones, (2011)} amongst others. One of the reasons that can be attributed to this interest is that in spite of the huge amount of investments made in conducting research for development and subsequent formulation and design of interventionists' projects and programmes, there still remains a gap in the effective uptake of many of these projects and programmes interventions and therefore a problem of translation of theory to practice. Consequently, there are renewed concerns on what should be done to bridge the gap between research, policy and action. A meeting to deliberate on ways of enhancing research uptake in policy and programs was held in London in November 2010. It was attended by donors and experts in knowledge generation and brokerage, as well as policy makers from around the world. The participants at that meeting seem to be in agreement that “research uptake” goes beyond dissemination of research results, and that it involves the translation of the disseminated research results and knowledge into innovation and commercial outputs for socio-economic development. It was also agreed that to ensure effective research uptake, the entire research process should take into consideration the idiosyncrasies of the local environment, and make information accessible such that the outcomes become more likely to be adopted.

The importance of communication and the element of capacity building at local level are also aspects of research uptake. Furthermore, the political and institutional context and relationships between different actors within the environment are central to the uptake of research<sup>35</sup>. It is along this line of thinking that Lomas (1997) posits that effective research uptake is beyond the sound of one hand clapping. It is a move towards a new paradigm that recognises development challenges as a process involving collective effort, to make the connection between research, public policy and the citizenry.

In this paper we adopt the definition of research uptake as the process of becoming aware of and accessing research outputs and the institutions, policies, systems and mechanisms

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<sup>35</sup>*The nature of bureaucratic processes (transparency, accountability, participation, corruption); the incentive system; policy dynamics, capacity and flexibility of organizations and institutions all matter.*

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supporting this process. This process includes innovative communication strategies as one component which goes beyond the broad communication of research findings by engaging with potential research users in different ways and at different levels. It also includes making research available and accessible to users, in particular by creating an enabling environment. This would usually involve interacting with other stakeholders beyond intended end users, in particular policy makers. The activities of research uptake will include the following among others: dissemination of research findings; capacity development; influence; collaboration between researchers and users; incentives; enabling environment, and research on research uptake and use. Detailed explanations of each of these activities and their respective components are shown in Appendix 1 (work done by Adolph et al, 2010).

This paper argues that research uptake is not a one-size-fits-all mechanism, and that different types of research results, depending on the intended beneficiaries will often require different types of uptake mechanisms/activities and strategies. It must also be understood that research uptake is not a linear mechanism and not a technical exercise which can be slotted into a specified policy agenda; rather it should be seen and accepted as a cost-effective communication process between relevant stakeholders and/or intended beneficiaries within the research process. Furthermore, research uptake is a process that needs to be properly funded. The costs associated with the process must be taken into consideration from the beginning of the research process.

### **The Pattern of Research Uptake in Nigeria: The National Health Insurance Scheme NHIS as a case study**

In what follows, we shall use the case of the National Health Insurance Scheme (NHIS) as an interventionist development programme that should imbibe the usefulness of research uptake mechanisms.

*The National Health Insurance Scheme (NHIS) was set up as a social health insurance programme in Nigeria that will ensure access to health care for all Nigerians at an affordable cost. Established by Act 35 of 1999, the NHIS traces its origin to 1962 when a bill on Health Insurance Scheme was introduced to the then Parliament in Lagos. At inception, the Scheme covered only Federal Public Servants. But in order to ensure that every Nigerian has access to good and affordable healthcare services, the Scheme has developed various programmes to cover different segments of the society spread across the formal and the informal sectors of the economy ([www.nhis.gov.ng](http://www.nhis.gov.ng).) However, since its launch in 2005, only 4% of the population (mainly federal government employees) have been enrolled in the scheme despite efforts made to encourage enrolment across the country. Some states like Rivers, Benue, Ekiti, Akwa-Ibom and the Federal Capital Territory (FCT) have showed interest but only Cross River State has fully rolled in on the scheme. The NHIS programme, like many*

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*interventionist development programmes in Nigeria, no doubt sets out a broad framework for reform of health policies and institutions associated with the delivery of the programme. But the uptake of the programme by those for whom it is intended remains a problem. Why?*

Some of the factors that might have contributed to the low uptake of the NHIS programme in Nigeria include:

- (i) *Poor targeting mechanisms* to the intended beneficiaries;
- (ii) *Political and policy instability* which often results in frequent policy changes and inconsistent implementation;
- (iii) *Inadequate coordination* of related programmes which leads to duplication of effort and inefficient use of limited resources. Overlapping functions ultimately led to institutional rivalry and conflicts.
- (iv) *Severe budgetary, management and governance problems* which results in facilities being complete, broken down and abandoned, unstaffed and ill-equipped.
- (v) *Lack of accountability and transparency* thereby making the programmes to serve as conduit pipes for draining national resources.
- (vi) *Over-extended scope of activities* of most institutions, resulting in resources being spread too thinly on too many activities.
- (vii) *Inappropriate programme design* reflecting lack of involvement of beneficiaries in the formulation and implementation of programmes. Consequently, beneficiaries were not motivated from the outset to identify themselves sufficiently with the successful implementation of the programmes.
- (viii) *Absence of target setting* for associated Ministries, Agencies and Programmes.
- (ix) *Absence of a sustainability mechanism* for the programme.

To further answer why the uptake of the NHIS in Nigeria has not been high, we shall use the major steps of the innovation<sup>36</sup> process to simulate activities of the health research process and programme as a laudable intervention for ensuring access to affordable health services in the country. We start with an understanding that the innovation process covers all inductive and experimental stages of research from an initial theoretical concept to a proven useful principle reducible to a practical product (McLoughlin, 1970). This process can be conceptualized as an enquiry that culminates in a marketable research product, and to this

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<sup>36</sup> *Innovation is a generic activity oftentimes associated with the survival, growth and competitiveness. It is a process concerned with the acquisition of technology and new techniques, and the development of core capabilities and competences to fully, utilize, maintain, adapt and integrate the technology and/ or new technique within an environment.*

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extent, we argue that there are several series of distinct, but not necessarily linear steps. Many authors have discussed the steps involved in the innovation process (Novick, 1960; Bright 1964; Bell & Pavitt 1993; Bamiro 1994; Oyeyinka-Oyelaran 1997; and Adeyinka 2008). A common consensus reached by all the authors is that the process is carried out within the National innovation System (NIS) and that it requires the collective participation of relevant stakeholders, with proper identification of the role and impact of each stakeholder as well as their decision/outcome.

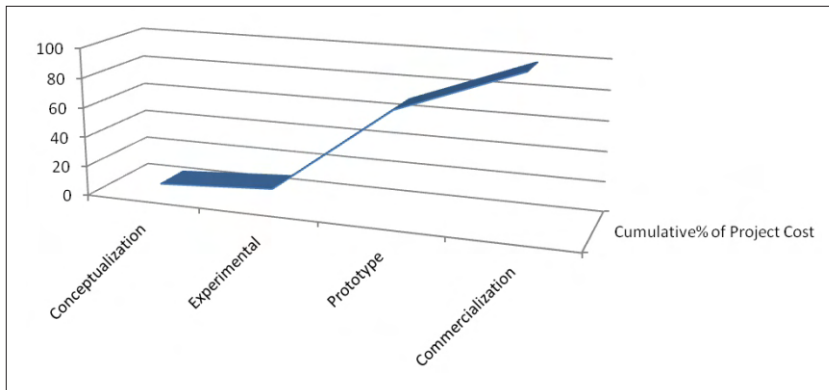
The NIS is defined, as a network of firms and other economic agents who, together with the institutions and policies that influence their innovative behaviour and performance, bring new products, new processes and new forms of organization into economic use (Mytelka, 2000; Lundvall, 1988; Freeman & Soete, 1997; Bamiro, 1994 and Adeoti et al. 2009). Interaction among these units may be technical, commercial, legal, social or financial, in as much as the goal of the interaction is development. Thus, whether the end product in the innovation process is tagged “product introduction”, “proliferation” or “commercialization”, the important issue to note is the translation of research results into concrete usable products and processes, and the ability to share knowledge within the NIS. The concept of the NIS has continued to gain intellectual and practical coherence over a number of decades, enjoying initial strong adoption by OECD and developed countries, and more recently becoming the focus of increased attention as a means to address some of the more profound issues of development in developing countries.

Thus, whether the end product in the process is tagged “product introduction”, “proliferation” or “commercialization”, the important issue to note is the translation of research results into concrete usable products, and processes, and the ability to share knowledge within the NIS. Government R & D institutions have a particular role to play in this regard and they have been posited to act as primary centres of innovation or coordinating centres for interaction between universities and industry (Adeyinka, 2008). The amount of R & D carried out by scientists in these group of institutions in developing countries is however significantly lower than that of advanced industrial countries, for reasons such as: lower levels of competence and capacity building; a weak regulatory control and standards for safeguarding products of R & D institutions, particularly in the face of competition with imported alternatives, lack of information exchange, and use of modern information services. The potential of commercialization of research results in Nigeria is further limited with equally weak interactions between finance institutions and other stakeholders within the NIS.

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As shown in Figure 1, the project cost of the conceptualization and experimental steps of any innovation process often take no more than 10 per cent of overall total cost, and constitutes the problem definition stage. The problem with these two stages is that the researcher often works alone on the identification/conceptualization of the research idea (with so much thinking and reading, and most times locked up alone in a room). Sometimes the experience of the scientist from similar projects may provide the answer to the experiment at hand. It must be mentioned that to a very limited extent, this may be laudable, but may not necessarily be the priority issue at hand.



**Figure1: The Innovation Project Costs. Source: Authors' Conceptualization (2011)**

The third step of the innovation process is the prototype and initial design step, and is the most demanding in terms of financial requirements, and also in terms of skills and know-how. Evidence has shown that over 70 per cent of a research project cost is often utilized to produce the prototype at the product development stage. This stage of the project will require the suppliers of input materials and in particular financiers of the project. The requirements of this stage no doubt further underscores why great importance and concentration should be given to the involvement of all stakeholders as customers of the innovation process from the outset. The prototype and initial design step has been identified as the determinant of the entire research process, and the one which may make or mar the visibility of the research (Oyelaran-Oyeyinka, 1997). The fourth step is the stage of full blown production and commercialization, which means that 100 per cent of costs, skills and know-how are required. The high rise in percentage of project often constitutes an obstacle to the commercialization step, especially where the important role of relevant stakeholders and actors of the innovation had been taken for granted. Many projects never get to this stage in Nigeria, and for the few projects that do, survival/sustainability becomes a problem,

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especially if the innovation product/output/ outcome has alternatives that taken into account the idiosyncrasies of the local environment.

From what we know so far about research uptake, the thinking is that the NHIS, against all odds, has actually been able to survive the four major steps in the innovation process. One of the current challenges of the programme is how to ensure that it is effectively taken up and used by the intended beneficiaries<sup>37</sup>. It is therefore logical to say that research use is the next step after research uptake, wherein research knowledge, products or outputs are applied by targeted beneficiaries. What this means is that the research uptake process spans knowledge or awareness of the research result/intervention; forming an attitude towards the intervention; making a decision to adopt or reject, implementation of intervention and finally confirmation of the usefulness or otherwise of the intervention. Confirmation can lead to innovative uses and the cycle could start all over again. The research uptake process of interventionist programme such as the NHIS should therefore start with a general/broad dissemination of the research results, highlighting the recommendations and action plans for all intended stakeholders and /or beneficiary. This will then be followed up by putting in place targeted research uptake programmes for specific stakeholders, which are actually a detailed implementation plans that is expected to translate the research action plans to development.

It is important to mention at this point that anecdotal evidence seems to show that the broad dissemination of research results is the only aspect of the research uptake process that we often embark upon in Nigeria. Also, targeted interventionist programmes as well as action plans are still missing aspects of the research uptake process. This Gap is a detailed implementation plan that is expected to translated informed policy decision through action plans (interventions) to development outcomes, and therein lies the desirable linkage between research and policy and vice versa.

### **Characteristics of the Research Uptake Process**

The adoption and diffusion of research outputs, generally often tends to take an S-shaped or bell shaped curve. This curve has been arbitrarily divided into five phases to reveal the innovative characteristic of actors who fall into these phases: namely innovators, early adopters, early majority, late adopters and laggards. Table 1 presents a summary of the characteristics of actors in each of the diffusion phase.

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<sup>37</sup> *How was the start up of the product NHIS programme conceived? A full-blown research may need to be carried out in this direction.*



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**Table 1: Characteristics of Actors in the Research Uptake Process**

Actors	Characteristic or behaviour					
	Time of Adoption	Attitude and Values	Abilities	Group Membership	Social Status	Sources of Information
Innovators	First 2.5%	Scientific and venturesome	Very High level of education; ability to deal with abstractions.	Leaders in countrywide or state organizations; travel widely	Highest social status	Scientists, other innovators; research bulletins
Early Adopters	Next 13.5%	Progressive	Above average education	Leaders in organization within the community	High social status, role model	Local change agents; industry magazines, networks
Early Majority	Next 34%	More Conservative and traditional	Slightly above average education	Many informal contacts within the community	About average social status	Industry magazines, friends and neighbours
Late Adopters	Next 34%	Sceptical of new ideas	Slightly below average education	Little travel out of community; little activity in formal organizations	About average social status	Friends and neighbours
Laggards	Last 16%	Adverse to risk taking and fear of debt	Low level of education; have difficulty dealing with abstractions and relationships	Few membership in formal organizations other than church; semi-isolates	Lowest social status	Mainly friends, neighbours and radio jingles.

**Source:** Yarbrough, P, Klonglan, G. E and J. M Bohlen (1995). Communications and the adoption of technology and social change. A paper presented at the Development and Support Communications (DSC) Concepts and Strategies Workshop, June 26- 30 1995 Under the IOWA Nigerian Universities Linkage Support Programme, held at the University of Ibadan.

As earlier mentioned, the research uptake process takes place within the National Innovation System (NIS), which is also a social system with a set of interrelated units that are engaged in joint problem solving to accomplish a common goal. All members of a social system are interrelated in one way or the other. Member of a social system could be class of individuals, informal groups, organizations and/or subsystem. In other words the social system consists of subsystems. The social system constitutes a boundary within which an innovation diffuses. Ideas can spread from one social system to another. According to Rogers (1993), there are some characteristics of an innovation which determine its adoption by members of the social system. These are as follows:

- a) *Relative Advantage* - The degree to which an innovation is perceived as being better than the idea it supersedes. This can be measured in economic terms: social prestige, convenience and satisfaction.
- b) *Compatibility* - It is the degree to which an innovation is perceived as being consistent with the existing value system, past experiences and needs of potential adopters. An innovation that is incompatible with the values and norms of a social system will not be



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adopted as rapidly as an innovation that is compatible. One of the major reasons is that the adoption of an incompatible innovation sometimes requires the adoption of a new value system which could be a very slow process.

- c) *Complexity* - It is the degree to which an innovation is perceived as different to understand and use. Some innovations are readily understood by members of the value system while others are more complicated and will be adopted more slowly.
- d) *Triableness* - This refers to the degree to which an innovation may be experimented within a limited basis. New ideas that can be tried in segments will generally be adopted more quickly than innovations that are not divisible, because people do not like uncertainty.
- e) *Observability* - Refers to the degree to which the results of an innovation are visible to others. The easier it is for individuals to see the results of an innovation, the more likely they are to adopt it. Visibility often stimulates the discussion of a new idea as friends, colleagues; neighbours etc., of an adopter would often request information about their evaluation of the innovation.

By way of summary, innovations are more readily adopted when: (a) they provide a higher relative advantage compared to old ideas and are compatible with the existing value system of the adopter; (b) they are readily understood by the adopter; (c) they may be experienced in a limited basis; (d) the results of the innovation are more easily noticed by other potential adopters.

The culture, norms and value system of the members of a social system also affect the rate of diffusion of an innovation. Generally, there are three aspects of the social system that have been observed to be influential in the spread of innovations. These are as follows:

- 1) *Opinion Leadership* - the degree to which an individual is able to informally influence the attitudes and behaviour of other members or individuals in a social system is a measure of the individual's level of opinion leadership. In other words, an opinion leader is someone who exerts informal influence on the attitudes and behaviour of other members of the social system.
- 2) *Change Agents* - A change agent is an individual who attempts to influence another person's decision to adopt an innovation. They could give lectures, practical demonstrations, one on one talk etc.
- 3) *System's Norms* - Norms are the established behaviour patterns of members of a social system. The system's norm and culture can also influence the adoption or diffusion of an innovation within the system.

## **Communicating Research Results to Targeted Audiences**

Communicating research results and associated interventions are expected to lead to better-informed decisions that will result in positive change. Communicating development research is all about dissemination and diffusion or flow of information about an issue to targeted beneficiaries. Rogers (1993) defined diffusion as a process in which an innovation or research output is communicated through certain channels among the members of a social system over a period of time. A communication channel is the means by which messages get from one individual and another within the social system, while communication itself is a process by which participants create and share information with one another in order to reach a mutual understanding. Communication channels are used to transmit information on research outputs to intended beneficiaries. There are two major types of communication channels.

*Mass media* - To disseminate information over a vast area, to an audience e.g., newspapers, internet. They are good for creating awareness. It does not lead to change in attitude.

*Interpersonal channels* - They influence attitudes, behaviours and ultimately influence the decision. In this case, you communicate/interact with the person in-depth.

It must be mentioned that when it comes to the diffusion of a new idea, mass media channels have been found to be more effective in creating knowledge/awareness about the idea, whereas interpersonal channels are more effective in forming and changing attitudes towards a new idea and this may influence the decision to adopt/accept or reject a new idea. It is therefore important that the right type of communication strategy is employed to get information to the right audience at the right time.

Evidence from the Malaria Knowledge Programme of the Liverpool School of Tropical Medicine shows that a variety of approaches can be applied to translate and communicate multidisciplinary research; including establishing a 'common language' across stakeholders and relevant disciplines, so that the translation of results that come about through shared understanding is consistent. Effective communication of research involves the construction of shared meaning and dialogue between different stakeholders. Turning information and knowledge into action depends on translating and communicating research results quickly and clearly, to all relevant stakeholders. For example communicating health issue would demand an inclusion of policy makers, donors, health professionals and civil society, within and outside the country.

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To ensure effective research uptake, it is important that the most effective communication channel and subsequently, strategies to meet the needs of the target audience is identified. Within the health innovation system, for example the various target audience is statisticians, policy makers, health workers [doctors, nurses, etc.], newspaper reporters etc. Suffice to mention that audience has inputs and play significant roles in the policy-making process within the health innovation system. According to Easton (1953) policy-making can be viewed as involving the 'authoritative allocation of values', and when interpreted broadly can include people making the policy as government ministers and officials, local health service managers, or representatives of a professional body. Policy-making therefore involves those in positions of authority making choices that have a special status within the group to which they will apply. Substantial use of novel approaches to communicate research results to respective stakeholders within the system under study is a crucial element of an effective and innovative communications strategy. In some cases oral communication alone or simply writing a summary report may not get the desired results and it may be necessary to engage the efforts of intermediaries such as the media, or even extension workers.

Extant methods to promote and disseminate research findings include:

- > Publication of findings in scholarly journals
- > Presentation at national or local professional conferences
- > Written clinical summary statements
- > Poster presentation at local and national conferences
- > Verbal information at local unit meetings and at various hospital committee meetings
- > Presentation at journal clubs
- > Dissertations

Forums where researchers can present findings and engage in a two-way dialogue with policymakers and donors are crucial to getting research into policy and practice. Importantly, this includes local researchers sharing local knowledge with local policy makers. The first outputs of most researches are technical reports. The researcher may need to re-package the technical reports as policy briefs for the policy makers, and also use means such as the mass media and web-based information services to ensure that research findings receive the widest coverage. The advent of on-line social media tools has revolutionized communications. Face book, YouTube and Twitter are now common place in the private sector and are increasingly being used to disseminate and share research findings. These social media mechanisms communicate to people who do not use the more traditional communication tools such as newspapers, magazines, television and radio. The traditional media can also be used in new

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ways while incorporating the new “social media” tools to communicate science and foster outreach to new and established segments of society.

### **Towards Effective research uptake of research results in Nigeria**

To ensure effective research uptake in Nigeria, the following issues need to be considered:

1. When conducting any research the goals must be explicit from inception. Where there are stakeholders who are to collaborate, the missions of each of the stakeholders must be clear. It is vital for all to participate at the various levels or phases of the process and be prepared for changes or modifications in their goals as a result of dynamic issues that may crop up in the process.
2. Capacity and skills in using evidence may be improved through training and development programmes for policy-makers and other policy agents. At institutional level, educating administrative officials who can then introduce new decision-making approaches to their agency is one important way to effect systemic change. Developing in-service programmes, in which staff researched actual policy issues, resulted in a more systematic and sophisticated approach to internal health policy analysis.
3. It is very essential for the researchers not to stop at the level of generating technical reports but must devise innovative means/strategies of communicating the research outputs to all stakeholders including policy makers. The research product must be made available to multiple stakeholders, and communicated using different methods. For example, communicating the requirements of policy makers in any research will differ from those of the program staff involved in program interventions, and also from those of the ordinary citizens who are supposedly the end-beneficiaries of the entire process. The questions of interest to the research must have relevance to the local environment. When a research is not conceptualized to take cognizance of the needs of the local environment, research uptake and practice will always be a failure, in that the recommendations of such a research will not be practicable or implementable.
4. There is a need for national governments to establish regulations that will support the outcome of the research process.

### **Conclusion**

The importance of giving a focus to innovative communication of results to stakeholders and/or intended beneficiaries cannot be overlooked in the bid to ensure effective research uptake of development programmes and projects. In particular, capacity development among the policy makers and other stake holders in the Nigeria health sector is a major factor that has the potential of boosting interest in the transfer and uptake of research evidence into

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policy and practice, as it will positively influence governance and leadership, resources (human, material and financial), communication and quality of research.

In summary therefore, for effective uptake of health programmes, such as the NHIS in Nigeria, collaborative identification of the “problem” and participation of relevant stakeholders is important. Targeted innovative communication and discussion of research results with the intended beneficiaries, as they emanate, will make whatever decisions taken more acceptable. Capacity building in terms of training of health workers/professionals and other stakeholders as required, then becomes easy to factor in, whether at national or state level. Funding for the program/project, and framing the program within the larger legislative and administrative settings in the country are also issues which need to be considered in influencing how research is used and how policy matters are framed.

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Adebayo Ajala is a Senior Research Fellow in NISER. He holds a Ph.D. in Sociology (Demography) from the University of Ibadan. He also has a B.Sc. in Computer Science. His area of interests spans Gender-based violence, Reproductive Health and Development Studies. Adebayo belongs to many learned academic groups.

## **Appendix 1:**

### **Categories and Explanations of research uptake mechanisms**

1. **Dissemination** (message): *“Conventional” research communication i.e. research outputs are circulated or presented in a more or less tailored form to different audiences*

- **Publication of research findings** in journals/bulletins/summaries/briefing reports/newsletters
- **Oral presentations** of research findings in seminars/ conferences both attending conferences organised by others and hosting own conference
- **Alternative presentation** of research findings using alternative formats like videos/audio tapes/poster presentations/communications events
- **Dedicated research programme/organisation website**
- **Mass media** presentations of research findings via newspapers/radio/TV.
- **Working with/contributing to communication intermediaries** who translate or re-package research outputs for particular intermediary communication user groups e.g. journalists, research communication programmes
- **Research product dissemination** on a limited scale and/or to intermediaries e.g. disseminating prototypes of technologies for large scale production and distribution, disseminating limited amounts of breeders" seed to NARS/private sector
- **Research access** improving access to research findings through:
  - circulation of research, intra-organisational distribution of research by individuals or by information services
  - encouraging discussion of research via journal clubs/e-mail discussion groups
  - online database access/repository and/or conducting searches for individuals
  - open access systems to publish and retrieve research
- **Research-based guidance** including preparing and providing guidance for practitioners and policy makers based on research findings e.g. policy briefs, good practice guides, toolkits, literature reviews, research synthesis and systematic reviews



2. **Capacity development (learning):** *Specify whose capacity is build in what*
  - **Educational materials** including printed or online materials and curricula development
  - **Staff development and training** continual professional development including sponsoring postgraduate courses/PhDs, study tours, secondments, staff exchange, mentoring, pairing, peer review
  - **Interactive training and outreach** including field days, courses in critical appraisal skills, writing skills, workshops to relate research evidence to daily practice, face-to-face visits to practice settings to change practitioner behaviour
  - **Providing expert support** for research impact activities e.g. research support for practitioners to conduct research or to test out research findings in practice contexts/or information scientists to assist search for relevant research
  - **Organisational/institutional strengthening in general** including non-specified capacity development
  
3. **Influence (social influence):** *Changing norms and values in order to change behaviour*
  - **Endorsement** using opinion leaders/product champions/professional organisations to influence a particular target audience(s) by endorsing research findings/research-based guidance/practice or policy based on research and awards for research
  - **Lobbying** to policy makers or government e.g. writing letters to key influential/relevant policy makers, or lobbying local and national government, or contributing strategic inputs to DFIDs investment programmes including PSA countries
  - **General advocacy** and giving voice to unrepresented groups
  
4. **Collaboration** (*communication between researchers and users*)
  - **User involvement in governance and research planning** involving policy makers/users on governing boards/steering committees, in defining and managing research programmes/ business plans
  - **User involvement in implementation** including through regular working meetings and reviews between research generators and users
  - **Collaboration with business/industry** Business partnerships for research and commercial product final-stage market development and commercial uptake, business challenge funds which link research outputs to business/industry



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- **Research-in-practice** Testing and applying research findings and products in local contexts together with users e.g. testing agricultural practice with multiple partners, multi-location drug trials,, ,
  - **Networks and information exchange** including research/policy networks / or practitioner networks for disseminating research findings to foster debate on policy or practice options, partnerships such as innovation platforms and other multi-stakeholder partnerships
  - **Boundary spanners** **Developing** individual roles which span research-user contexts e.g. researcher-practitioners as policy brokers
5. **Incentives and reinforcement (motivation through reward):** *Targeted at researchers and at research users*
- **Research incentives for researchers** /sub-contractors within programmes to engage in activities which make research available, accessible and useable including ring fenced funding for communication. Financial allocation to research users to call for evidence-based policy or practice e.g. implicit financial incentives such as fee-for-service. Explicit financial incentives such as bonuses or withholdings
  - **Reinforcement/feedback** including peer review feedback/ cost information feedback / audit and feedback
6. **Enabling environment (facilitation)**
- **Organisational structures**, systems and processes, including changes in leadership, decentralised decision making, development of communication channels, support conducive organisational systems and processes
  - **Communication strategy** preparing one and assigning resources for its preparation and implementation
  - **Legal and policy arrangements** including regulatory approval
  - **Investing in / supporting communication/uptake infrastructure** including transport, facilities, IT systems and services including internet connectivity
  - **Diversifying/multiplying funding for research**
7. **Research on research uptake and use:** *Research on key issues relating to research uptake and use*
- **Barriers to research uptake** including research on regulatory barriers affecting technological innovation for poor people, and develop plan of action and efforts to remove them e.g. policy, legislation, products registration, Intellectual Property

**Towards Effective Research Uptake and Innovative  
Communication of Development Research Projects in Nigeria**  
*Adeyinka, Foluso. Modupe and Ajala, Adebayo.O*

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rights; the use of ICT for direct user uptake, research on targeting those not currently reached

- Monitoring and evaluation, and impact studies on research uptake and use, including monitoring and evaluation of communication strategies
- Models for better uptake: Understanding uptake mechanisms and how research outputs can best be delivered to users

**Source:** Adolph et al (2010). Learning lessons on research communication and uptake. A review of DFID's Research and Evidence Division's human development (health and education) and agriculture portfolios and their contribution to the 30% policy. Part 1 – Working Paper.

# Section 7

## **Challenges and Opportunities for Effective Linkages between Research, Policy and Practice.**

# 22. From Economic Growth to Sustainable Development: Challenges and Opportunities for Realistic Policy Responses

**Chidi Magnus Onuoha**

*Green Economics, Abuja, Nigeria*

## **Abstract**

*Development in the 1950's was seen as enhanced economic growth of national income. For instance Lewis (1954) focused so much attention on the question of economic growth that he felt that economic development was the process by which a given society changed from a 5 percent saver and investor to that of 15 percent. This focus was influenced by Harrod-Domar Model in which savings and investment were principal determinant of growth. Even the United Nations declared the 1960's as the first development decade and as such development was conceived in terms of the attainment of 6 percent annual rate of GNP for the Less Developed Countries (LDC's). Therefore, it could be seen that in the 1950's and 1960's economic development was seen largely in terms of growth in per capita income. In addition, investment financed by savings was seen as an engine of growth and hence development. In essence, the low level of savings in the Less Developed Countries (LDC's) was seen as a major constraint in their development. However, when in the 1970s it became evidently clear that despite the fairly good records of growth in gross national product (GNP) of Less Developed Countries (LDCs), the vast majority of the people of these countries appeared to have benefited very little if at all from the growth of their respective nation GNP. Therefore, economists and other social scientists began to think of a more meaningful perception of economic development. They argue that if poverty, inequality, and unemployment have all worsened for a given society over a period of time, then it would be absurd to label the result development even if per capita income had doubled during the period. Economic growth thus was not sufficient in the struggle against poverty. It was complemented with a set of social and related policies, which not only target the most impoverished but also empower the poor through productive employment, access to resources and delivery of basic social services like education, health and water supply. In the 1980s, development theory was broadened to embrace sustainable development - reflecting increasing concern about the environment. The*

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*state of the environment is the major determinant of the growth and development objectives of any nation and has pervasive effect on the safety and standard of living of the populace. Unfortunately, after nearly three decades of sustainable development, we have become complacent with the notion of sustainability. The concept needs to be managed, planned, and administered, in the line of resource allocation, management, and conservation. All these will require significant institutional and cultural changes in order to achieve a sustainable society. This paper argues that it is only the introduction of a holistic multi-disciplinary and enabling model as provided by green economics and as reflected in the four thematic areas-economic/ecological, intellectual/reality, political/Structural, and morality/poverty issues, would deliver changes which sustainability requires. Effective and realistic sustainable development policies could be initiated through innovations of individuals, special groups, industry, government and the international community. Such initiatives and innovations include Green GDP Initiative (GGDPI), Small Group Tree Planting Initiative(SGTPI), Briquettes- Alternative to Fire Wood Initiative(B-TFWI), Green Wall Sahara Vulnerability Initiative(GWSVI), Green Oil and Gas Mandate(GOGAM), Campus Project Greening Initiatives(CPGI) and Climate Science Development Studies Agenda(CSDSA). Government, trade regimes and Multinational Corporation have a responsibility in strengthening partnerships, promoting technological innovation and facilitating global programmes in environment, employment, human health and freedoms.*

### **Introduction**

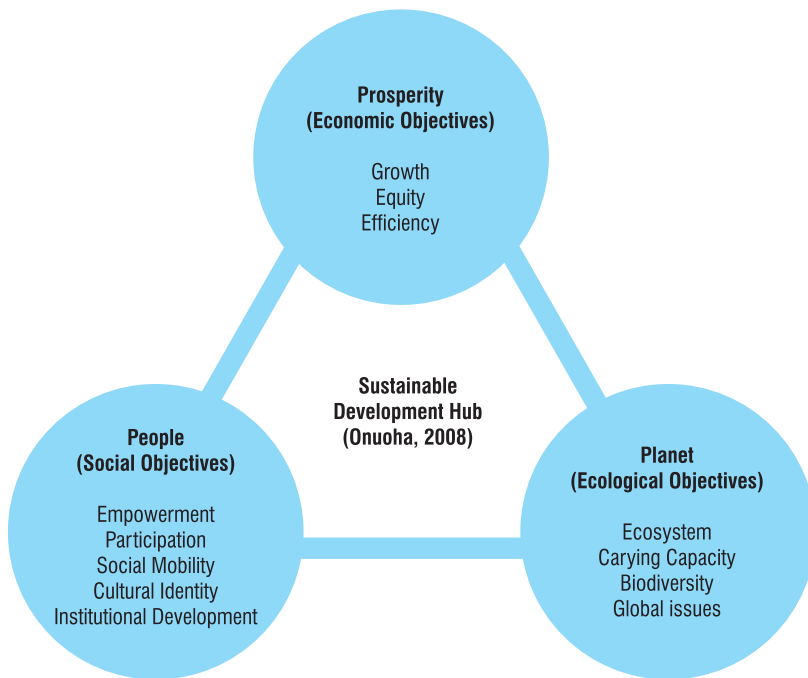
Past growth pattern adopted world-wide were highly dependent on excessive use of natural resources with very little consideration for its replenishment. These patterns have created serious environmental problems such as persistent degradation of the environment and increasing loss of her natural resources, decreasing natural habitat and fragile ecosystem thus precipitating diminishing biodiversity, exploitation of natural resources - accelerating at an unsustainable rate which is higher than the rate of replenishment and /or replacement, land degradation, as well as human induced environmental disasters. In a bid to find solution to these problems, development theory was broadened to embrace sustainable development - reflecting increasing concern of the environment. The credit goes to the World Conservation Strategy of 1980 for stressing the importance of integrating environmental protection and conservation values into the developmental process.

### **Sustainable development**

The term 'sustainable development was brought into common use by the World Commission on environmental development (The Brundtland Commission) in 1987, calling for the development that “meets the need of the present generation without compromising the

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**Figure 1: Viable Solutions Towards Achieving Sustainable Development**

needs of the future generations”. This definition emphasizes a focus on both equity (meeting people's needs) and long term impacts of current behaviour and decisions on future generations. The Brundtland Commission report also highlighted the need to simultaneously address developmental and environmental imperatives.

Sustainable development has varying definitions. But for purposes of this paper, it is the strategy of managing all natural, human, financial and physical assets to achieve long-term wealth and well-being. This definition entails control over the mobilization and utilization of resources to ensure that benefits accrued are used to maintain and improve the asset base, and for its effectiveness, local control must be central. Hence, countries and regions world-wide must be prepared to take control over the depletion of their resources and distribution of benefits accrued to ensure sustainable development.

Sustainable development is further premised on the fact that over half of the world's populations live in countries that are struggling to develop adequate mechanism for income and employment generation. In effect, practices in those countries are suffering from environmental stress as they increase their dependency on natural systems. Changing

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situation in these countries presents a major challenge because some of the past development strategies cannot be repeated. They will continue to widen the gap between the rich and the poor and worsen environmental problems. Current practices have led to major differences in the world regions and equity problems. As a result industrialized countries enjoy economic affluence but have weaknesses such as over-consumptive habits, excessive waste production and emission of adverse gases. Relatively few have benefited in poor developing countries, majority continue to suffer from poverty and human misery along with degraded local environment. Hence new equitable development paths are required.

### **Green Economics: Building Block for Sustainable and Equitable Development Paths**

Sustainable development introduced to the international community over two decades ago is still in its infancy in terms of practical application. We have become apathetic with the notion of sustainability over the years that we forgot that it is a concept that needs to be managed, planned and administered, in the line of resource allocation, management and conservation. This will inevitably require institutional and cultural changes. A holistic (multi-disciplinary) and enabling model as provided by green economics is a major building block that will deliver the changes that sustainability requires. A cursory look at the justification of the model and its attendant thematic areas will suffice.

### **Green Economics: Justification**

Green economics as a holistic, multi-disciplinary study is an understanding that the economy operated by human beings is dependent on the natural world and could not exist without it. It pre-supposes an interaction between human economic activities and the natural world such as land, water, minerals, seeds, animals, and the atmosphere. It also entails that the pre-conditions for economic activity inherent in the discipline reveals a far richer picture than the conventional economics which tends to take all these human pre-conditions for granted and begin to study the economy. The economy would be impossible without the following pre-conditions-'preparation' of human beings through birth, looking after babies and children, education system, health services and existence of basic features of life such as language, sufficient degree of trust and cooperation among people. These pre-conditions could be investigated within the ambience of sociology, history, anthropology and religious studies.

Green economics would also have both psychological and philosophical dimensions. From the psychological prism, rather than making simplistic assumption about a rational man seeking his utility, it posits that it would be more realistic to actually look at evidence about human behaviour and the factors which influence people in deciding what to buy, what jobs to

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do etc. Psychological perspective is not purely an individual matter; it also considers whole cultures and influence they have. The philosophical assumptions basic to the culture entails we look at the key concepts of economics such as production, consumptions and investment by asking what they mean, what they exclude and where they have come from. These assumptions should not be taken as given.

Green economics is also synonymous with rapid technological change. Technology is not another black box (input) taken as given. Technology is not a short term phenomenon but a long term one. Green economics is concerned with long term change. Green economics also posits that economic life cannot be value-free. It is not sensible to let our values in economics be subjected to the whims and caprices of wishful thinking and jumping into abstract conclusions.

### **Green Economics and Sustainable Policy Dialogue: Unveiling the Thematic Areas.**

From my knowledge and understanding of green economics over the years, and for effective research capacity building and sustainable policy dialogue programs, four thematic groups have emerged: Ecological and Economic Issues(EEI), Intellectual and Reality Issues(IRI), Political and Structural Issues(PSI) and Morality and Poverty Issues(MPI). The thematic groups are the building blocks of the research programme. They constitute the research hubs for producing frontier knowledge based on teamwork, international research networking, scientific validation and quality assurance.

#### **A) Ecological and Economic Issues (EEI)**

Here we shall engage in the discussion of the fact that there is an overwhelming evidence that the resources of the planet are being annihilated, plundered and disturbed(Goldman 2005), putting paid to the argument by mainstream economics that these resources which are in abundance and available to be raided are indeed becoming scarce (Broszimmer,2002). Such topical issues to be discussed here include but not limited to the following: Limits of growth, ecology and nature, emphasizing on the appropriate size and scale of production, management of consumption, downwards-reuse, reduce, recycle, repairs and transparency of the supply chain. Population issues and the concepts of 'browning' and 'greening' will also be discussed here as well.

#### **B) Intellectual and Reality Issues (IRI)**

Here green economists will justify their much longer terms than the short term business cycle found in neoclassical and business school of economics. They take a long term through



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anthropology, archeology, and environmental science and use this knowledge to filter their analysis of economic decision-making. The holistic and multi-disciplinary nature of green economics will be amplified here. It is the very economics of interconnectedness as there is no human activity, and no part of the planet that is not of interest to the subject. Issues to be engaged here include but not limited to the following: reformulation of demand, supply and growth, long termism, holism, new relationship to science/natural sciences and technology (Green Technology), and specific examination of issues temporally and spatially.

### **C) Political and Structural Issues (PSI)**

Here we shall engage in research that seeks to reconnect the values and costs of transaction in the natural world with social structures. This will seek to enhance local economy, supports bioregional development, democracy and access to all and seeks global governance through new institutions designed for this purpose. Accordingly such issues as progress made in the economy measured by new indicators (Green GDP), wellbeing, quality of life, sustainability, long termism, examination of power structures, reformulation of global institution to provide global governance, among others will be discussed here.

### **D) Morality and Poverty issues(MPI)**

Here earlier moral concerns of economics are reincorporated taking cognizance of one-fifth of the earth's 6.3 billion people still trapped by life-threatening poverty. These are in the form of social and environmental justice, inclusiveness, equity and accessibility. We shall explore how the 'invisible hand' (Smith, 1776) will be assisted by the use of data from natural sciences on resource potential and from social science about needs, right, requirement and local conditions. Hence appropriate decision will be taken which allows access and transparency for everyone. Issues to be engaged here include among others-regional locally diverse and democratic solutions, using analysis of power relations and institutions, feminist analysis of patriarchy and accumulation, critique of trickle down theories and wealth creation with local power decision.

## **Challenges and Opportunities for a Realistic Sustainable Development Policy Response in a Green Economy**

### **1) The Green GDP Initiative (GDPI)**

The major challenge of a green economy is to change how wealth of the earth is measured not just in terms of money (GDP), but indicators that reflects its true value by providing a home for humans and other species (Green GDP). Ecosystem services such as protection from

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flood, maintenance of clean water supplies and carbon storage are linked to biodiversity and are vital for human survival as they help to regulate the climate of the earth. Unfortunately, they are being degraded as habitats are destroyed and biodiversity lost mainly as a result of human activities. But there are costs associated with ecosystems services in terms of their intrinsic value as well as there are major costs associated with loss of biodiversity. Currently, ecosystem services are mostly public good. They are not included in current markets and have not been attached any economic value and thus not included in the current economic system. Therefore, the economic costs of ecosystems degradation and biodiversity loss have not been included in economic policy. Estimating both the value of ecosystem services and the costs of biodiversity loss provides a sound argument for biodiversity protection, thus repairing society's defective economic compass and provides decision makers with information to create new policies, modify old ones, and create new markets.

However, effective and realistic sustainable development policies could be initiated through innovation of individual, special groups, industry, government and international community. Some of such initiatives and innovations that form part of long term programs of Green Economics Nigeria include:

### **2) Small Group Tree Planting Initiatives (SGTPI)**

Through the NMA baseline methodology (simplified methodology for small holder AIR in areas undergoing continued deforestation), the tree planting work of small groups of 6-12 participants can be established in various communities.

The program would involve thousands of individual groves (units) planted by thousands of small groups. Trees will be planted around their homes, gardens, fields and villages. Unlike the monoculture plantations, most of the groves would be less than 1 hectare in size. Each grove would be identified with a unique number and geographic coordinate. The total number of a grove would be the boundary of the project.

By growing enough trees, participants would be able to sequester carbon and take advantage of the natural mortality of the trees and get fuel from their own groves. Furthermore, a successful program should attract additional income for participants from carbon payments by the United Nations that can serve as alternative to investments in this period of economic meltdown which has made investments in shares less attractive.

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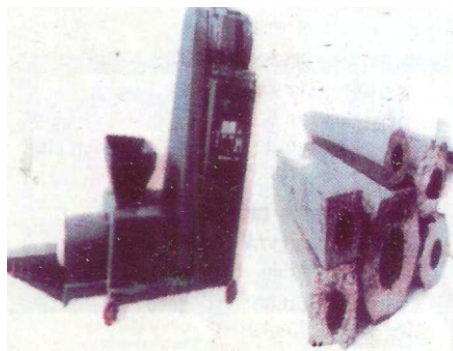


**Figure 2: Tree planting**

### 3) Briquettes-Alternative to Firewood Initiatives (B-ATFWI)

A briquette can simply be defined as a compressed carbonized charcoal dust, or biomass, used for fuel and kindling. Over the years, large quantities of wood wastes (residues) like saw dust and other residues like rice husk, groundnut shell etc. have been produced as a result of forestry activities, timber production, and agro-industrial processes.

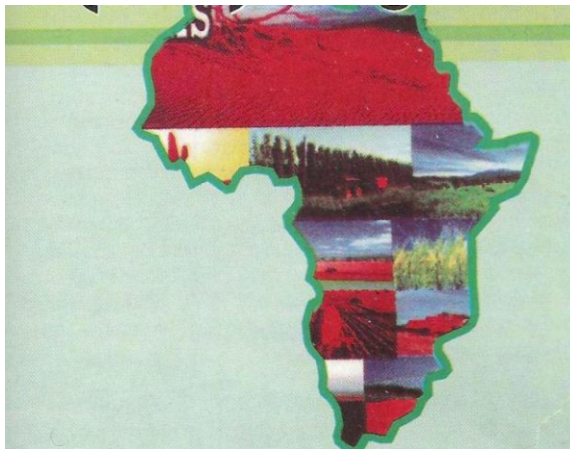
Being regarded as waste and valueless, these wood residues are often left to rot away or burnt indiscriminately thereby causing more environmental and health hazards to the citizenry by releasing GHGs like carbon dioxide, hydrogen sulphide, and sulphur dioxide. Carbonized briquettes from briquette plants do not release carbon dioxide into the atmosphere thereby making it an environmentally friendly energy sources. Briquetting projects could be eligible under the market based mechanisms of the Kyoto Protocol for certified carbon emission credit earnings for sustainable development.



**Figure 3: Briquette Machine & Briquette Product**

#### 4) Green Wall Sahara Vulnerability Initiatives (GWSVI)

The Green Wall Sahara Program is a program aimed at checking the advancement of Sahara Desert into the hinterland through massive afforestation and reforestation and industrialization initiatives. In order to ensure a sustainable realization of the African program, the GWSVI as a proposal is set to address the vulnerability of countries affected by drought and desertification. The Nigerian model - the Green Wall Sahara Nigeria Program (GWSNP), a strategy of greening the desert prone and desert infested eleven (11) states of Northern Nigeria will be used as case study.



**Figure 4: GWSVI - checking the advancement of Sahara Desert**

#### 5) Green Oil and Gas Mandate (GOGAM)

Fossil fuel is expected to continue to play a dominant role in the energy mix in the foreseeable future, hence it is important to promote the development and dissemination of clean fossil fuel technologies. These technologies if developed and applied will significantly reduce CO<sub>2</sub> emission from oil and gas to the benefit of both producers and consumers. For instance, the Carbon dioxide Capture and Sequestration (CCS) technology if developed along with other mitigation measures could significantly reduce the cost of stabilizing GHG concentration and increase the flexibility to achieve our objective in the context of sustainable development by helping to increase the Clean Development Mechanism (CDM) projects in the oil producing developing countries.

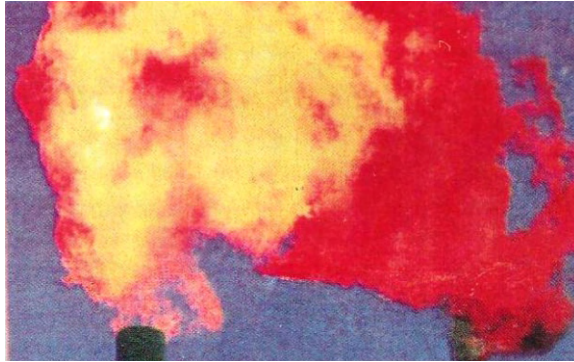
#### 6) Campus Project Greening Initiatives (CPGI)

It is a project initiated by Green Economics Nigeria, in collaboration with the University of Nigeria Nsukka located in the South East of Nigeria, where a dynamic Campus Verde

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**Figure 5: CPGI - promoting awareness about living in harmony the environment**

Innovation Club (Green Economics Club) with over 60 members under the guidance of Centre for Entrepreneurship Development (CEDR) University of Nigeria, Nsukka is promoting the awareness about the importance of living in harmony with our environment in a sustainable way as well as adopting the attitude of saving culture in our tertiary institutions. The focus is on green transportation, recycling, nature (tree planting and tagging), energy and water conservation and other outreach programs. The programs are designed to offer an excellent means of business and mind-set amongst students with particular attention to practical application of technology in today's business. Getting students involved in carbon offsetting programs by reducing emissions, no doubt is a strategic measure to mitigate climate change.

### 7) Climate Science Development Studies Agenda (CSDSA)

CSDSA program is aimed at influencing curriculum development and knowledge of climate change in tertiary institutions. The proposed curriculum challenges students to seek



**Figure 6: CSDSA program logos**

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integrated approaches to the study of health sciences, social sciences, natural sciences, and management. Integrating these core disciplines will provide students with substantive knowledge required to analyse and diagnose multi-dimensional problems of malnutrition, extreme poverty, climate change and infectious disease control. Likewise, tackling hunger requires an understanding of agriculture, which in turn requires an understanding of the water systems, which in turn requires an understanding of the climate patterns, which in turn requires an understanding of global energy systems.

### **Conclusion**

As earlier stated past economic growth pattern adopted world-wide were highly dependent on excessive use of natural resources with very little consideration for its replenishment and these created environmental problems. In finding solution, sustainable development came into the development theory lexicon, stressing the importance of integrating environmental protection and conservation values in the developmental process. Over the years there have been some challenges in terms of complacency with respect to practical implementation of sustainable development policies and practices. These challenges could to a reasonable extent be addressed if the aforementioned initiatives discussed here are implemented. It is high time development practitioners and indeed developed countries realized that there is an alternative to the rampant economic growth, and developing countries should invest in capacity building in order to increase their self-reliance. Finally, in order to ensure a realistic sustainable development policies and practices, governments, trade regimes and multinational corporation have a greater responsibility in strengthening partnerships, promoting technological innovations and facilitating cooperation in global programs on environment, employment, human health and freedom.

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## 23. Knowledge Transfer, Policy, Innovation Systems and Civil Society in the Energy Market

David Ndegwah, Lynn Vanbeule, Otto Kroesen and Linda Kamp

### Abstract

*This paper goes into the scientific underpinning of development policies, based on experiences in a student internship program, organized by Tangaza College in Kenya and the Delft University of Technology in the Netherlands. It focuses mainly on experiences in the energy sector. On the level of technical expertise, organization and management, an important issue appears to be the transfer of knowledge and skills on a large scale as well as the formation of an innovation system. Separate pilot projects or experiments will not survive in an environment in which only some people have experience with the technology – such that only they can manage and repair it. This underscores the need for a system change, which can be accomplished by means of joint action of European and local institutions of higher learning, NGOs, government bodies, vocational training etc. On the cultural level the main obstacle is the compartmentalization of the Kenyan civil society. Kenyan companies, government bodies and NGOs often maintain a culture of closed “we” groups. At the background is the complex relationship between state and society. The reason for this complexity is that an open civil society can only function if a strong and accountable government enforces universalistic rules so that particularistic mind-sets and patronage systems cannot obstruct an open process of constantly regrouping of social actors. The authors also provide some reflections on this larger socio-political framework. The use of insights from research such as the case studies presented in this paper for formulation of policy and management guidelines can stimulate more openness and cooperation between different stakeholders.*

**Keywords:** *innovation systems, knowledge transfer, policy guidelines, technology implementation, small wind turbines.*

### Introduction

For Africa it is imperative to participate competitively in the global economy. During the 1980s, China and India found ways to enter the global market on a large scale because of ever



rising wages in Western economies. Africa however, finds this place in the world economy already occupied (Collier, 2007), and has a hard job even to compete with China and India in its own markets. Africa largely exports minerals and imports finished products. The challenge is to find ways to increase production first for internal markets but also and soon thereafter for external ones too.

This paper goes into the scientific underpinning of development policies, based on experiences in a student internship program, between Tangaza College (Kenya) and TU Delft (Netherlands). The paper presents case study insights on facilitators and bottlenecks for implementation of new technologies in Kenya. The main focus is on experiences in the local energy sector targeted at increasing local production. It is the contention of the authors that the technology per se is not the main problem, but that bottlenecks can be found in building up a network between relevant stakeholders, knowledge transfer and wider socio-institutional issues. The paper links these issues with cultural factors present in the Kenyan society, related to the specific cultural transition that Africa in general is going through. The paper also reflects on the larger issue of the problem of development in Africa. According to the paper, the old tribal and rural values do not perform well anymore for two reasons: the present large scale socio-technical, economic and political systems have uprooted the refined fabric of tribal societies including its controls on arbitrary governance. Secondly a fully open civil society oriented set of values, which in new ways puts checks and balances on government institutions designed for a larger scale is not yet fully in place (Wiarda, 2003). Insights from the case studies presented and analysed in this paper can help in the formulation of ideas on how to overcome these bottlenecks and corroborate the important role of research-based policies.

### **Cooperation between Tangaza College and TU Delft**

Since 2008, Tangaza College and TU Delft have been cooperating in a student internship program on the management of technology transfer. Tangaza students have been involved by means of an “Intercultural Virtual Seminar”, whereas Delft students did internships on solar energy, wind energy, biogas, check dams, wetlands, and solid waste management, to mention but a few. These internships aim at a solid scientific research base for the management of technology by means of feasibility studies, business plans, and so on.

The internship assignments comprise of three levels of analysis:

1. Technical expertise
2. Management and organization
3. Cultural analyses as part of technology transfer.

The Intercultural Virtual Seminar for Africa started in year, 2008, on the occasion of 165th birthday of TU Delft, which was devoted to technology and development for Africa. During the years 2008 and 2009 two experiments were conducted in virtual cooperation. The first one was between Tangaza College in Kenya and Delft University of Technology and involved a group of 10 students from each side. It worked around the themes of health, entrepreneurship and water. After this first experiment Dr. Ndegwah visited Delft University of Technology in order to help prepare the second round which included Mekelle University in Ethiopia, and also involved some 10 students from each partner institution. It focused on the themes of water shortage, green energy and disposal methods of solid waste. For the students as well as for the teachers, these two experiments were an impressive learning experience in intercultural cooperation. It gave the students a sense of shared responsibility for a common future and a new perspective on their own situations.

Later that year, Dr. Otto Kroesen visited both Mekelle (Ethiopia) and Tangaza (Kenya), where it was agreed to complement IVS by internships, master theses, research cooperation and projects by the staff. This was meant to add value to development policies, in the framework of the social network of government institutions, vocational training centres, NGOs and so forth. This was the birth of current internships in the context of an incubator or innovation system involving various social, civil and academic actors.

### **Experiences with internships, some examples**

On the level of technical expertise, organization and management, one of the important issues appears to be the transfer of knowledge and skills on a large scale. Separate pilot projects or experiments will not survive in an environment where only some people have experience with the technology – such that only they can manage and repair it. The current cooperation between Tangaza College and the Delft University of Technology, aims at addressing this discrepancy. Its original goal was to investigate how students in Kenya and in The Netherlands could work together on a project about sustainability by means of virtual communication through the internet, but later it evolved into a larger incubator mode of cooperation.

In the first round of IVS the work of the students resulted in some reports describing the situation in Kenya and some ideas of which one in particular had a concrete impact. During the discussions it appeared that small business entrepreneurs (locally referred to as hawkers) have problems in selling their products in the streets of Nairobi. There was lack of space and when the sellers occupy parts of the streets, they are chased away by the city council askaris (police). The Dutch students suggested to the Kenyan students to arrange a specific day (or

days) in a week and make at least one street (preferably Moi Avenue) free for a market to sell products; just like it is done in the Netherlands. This was to be taken up with the municipality, negotiated and arranged officially in accordance with the preferences of the stakeholders. Such an idea of an official market in the streets, which are otherwise used for traffic, is not usual in Kenya. The suggestion was taken over by the Kenyan group and they discussed it with the municipality but they never got it arranged due to the changes in office bearers (councillors) after the 2007 General Elections. The municipality, nonetheless, saw this as a source of income and successive office bearers made available space (Muthurwa) for the hawkers, where they could sell their wares without being interrupted by the city council askaris. This was a big reprieve for the hawkers, although there were smaller issues like few customers and a high levy/fee of KES 20 (20 Euro cents), which was too high for most of them. However, the students could not finish their work, because of the (2007) post-election riots in Kenya (Ndegwah & Kroesen, 2010).

In the second round, the energy group focused on the supply problems of Kenyan metal welders in Nairobi, where the welders use energy from the National Grid. Lack of continuous supply of energy was the main cause of their problems because of the long hours they sat idle on power rationing days. They researched alternative resources of energy, like solar power, geo-thermal or bio-energy, which could finally minimize their energy woes. For the short term the students suggested that the welders should organize themselves more efficiently, and act as a more powerful negotiator with the energy companies. Moreover, energy could be distributed during the day according to a distribution plan so that they at least would know in advance during which hours they could do the welding work when the power supply would be cut. Concerning internship research, various successes were reported like the windmill experiment in Nanyuki where supported by students, a local carpenter successfully built a mill. However, the benefits are not always unambiguous, as the windmill experiments at Nanyuki also show. The operation and maintenance of the mill still cause problems, and experiments on transfer of skills as well as production and marketing are still evolving as we will explain later on. In addition, the input from Western students may also need modification and contextualization, and cannot just be taken for granted. As an example the work of two student interns on microcredit options can be mentioned. The students, E.F. van der Knaap and J.F. Zijlstra (Knaap & Zijlstra, 2010) had noticed that SACCO employees were inefficient and incompetent. Their suggestion was a quick-fix recommendation for employment of more qualified and efficient staff. We discussed this option and to their amazement they realized that this 'solution' goes against the grain as it transforms the SACCO into a bank, hence beating the very purpose of having a SACCO in the first place.

In cases where internships follow up and build upon each other and where students have an open eye and ear for the peculiarities and cultural context of Kenya, the chances for good results and usable recommendations increase and accumulate.

### **A system change by means of innovation**

In the above-mentioned collaboration, specialized knowledge from the West can be translated and adapted by means of contextualized knowledge in Africa and be applied by a wide range of institutions. Institutions of higher learning, both from the West and from Africa, can contribute to the development and design of devices and technologies. African institutions of higher learning may have less specified technological knowledge, but they have a much broader and deeper picture of the finesses of the African culture to which the product should be made suitable. If a product is designed, it should be further adapted to local circumstances in terms of end users, businesses, systems of maintenance and so forth. In this respect vocational training institutions and NGOs can give their contribution. They can help to achieve a useful dialogue between end-users and also learn vocational and business skills and capacities. In the end, independent small and medium scale businesses can be run with the technology. Hence a paradigm shift or system change can be accomplished by means of joint action by European university institutions and local institutions of higher learning, NGOs, government bodies, vocational training etc.

This underscores the fact that innovations are not developed in isolation. They are developed within a socio-cultural context. In the literature, which is based on experiences within Western societies, this innovation context is coined by different terms: sociotechnical system (see e.g. Geels, 2005), technological system (Carlsson and Jacobsson, 1997) or innovation system (see e.g. Edquist, 1997). Because these terms all come down to the same thing, we choose to use the term 'innovation system'. Innovation systems are networks of institutions, public or private, whose activities and interactions initiate, import, modify, and diffuse new technologies.

Accordingly, an innovation system consists of three building blocks (Malerba, 2005):

- (i) technology and knowledge
- (ii) networks of actors
- (iii) institutions – defined as 'rules of the game' (Freeman, 1987)

Networks of actors develop and implement new knowledge and technology, within their institutional context. These actors can be subdivided into technology developers, technology users/owners, policy makers/government institutes, and knowledge providers, NGOs etc.

Knowledge consists of 'hard' technical knowledge but also 'soft' knowledge, e.g. on how to use the technology, or on which governmental agencies or NGOs to ask for subsidies. Institutions involve formal institutions like laws, government regulations and technical standards and norms; and informal institutions like common law, cultural aspects, tradition, norms, codes of conduct, practices, and so forth (North, 1990).

For an innovation system to be successful in developing and diffusing technologies, these three building blocks need to be aligned together (Malerba, 2005). Furthermore, these three building blocks co-evolve in time. Actors enter or exit networks, new technologies and knowledge are developed or discarded and also institutions can change over time. A successful innovation system requires a fit in this co-evolution (Malerba, 2005).

The existing literature on innovation systems is primarily based on Western societies. Whether things work like that in Africa too, is the subject of our research and is explored by the two cases presented in this contribution. As cooperation between different partners and institutions is difficult in Western societies, it may appear to be even more difficult in the compartmentalized and collectivist society of Kenya, as our cases will corroborate. Furthermore, it needs to be emphasized that cooperation and initiatives from below sooner or later will always be dependent on proper regulation from above, i.e., by government bodies, in order to be successful. Without a proper regulatory framework new practices and knowledge cannot really become institutionalized and have a larger impact.

### **The Case of Wind Energy**

There were three internships in the field of small wind turbines; the first two internships were studying the practical feasibility of the technology (by actually building the windmill), whereby they revealed several significant characteristics of Kenyan society and culture. Currently, a Master's Degree student from Delft, one of the authors of this contribution, Lynn Vanheule, is carrying out the third internship, with the aim of analysing the small wind turbine sector in Kenya as a whole and to investigate the deeper societal trends inhibiting sector growth. She carried out a number of expert interviews and we summarize the results of her research. But first we will take a look at earlier internships.

### **Earlier internships**

The main focus of earlier projects carried out in Nanyuki region, was on transferring Western-based knowledge to Kenyan stakeholders so that SWT (Small Wind Turbine) activities would continue after departure of the Western internship students (Buntsma & Fugers, 2009). The NGO, where the students worked, was interested in a working wind turbine for own usage but

was not eager to learn about the technology itself. Moreover, according to the students, only an entrepreneurial and technically skilled individual would be able to venture an SWT business, not an NGO.

The student groups succeeded in collaborating with a local welder (popularly referred to as Jua Kali, Artisans) from Naro Moru to manufacture a small wind turbine. Despite the rather straightforward technology and the welder's enthusiasm to cooperate, it took some effort for the welder to build a small wind turbine all by himself. The reason was not only that the technology was new, but also his lack of confidence and dependency attitude towards what he considered as the experts. For example, in the beginning, the welder was over-reliant on the students' opinion and lacked initiative, despite the students' efforts to support rather than control the welder in the SWT manufacturing. Furthermore, once the welder had succeeded in building an SWT with little external help, he handed in a project proposal to NGOs for generating funds for continuing his SWT activities instead of approaching a bank for a loan. So much was it out of his scope to implement the technology in a business-like way.

This attitude seems to be typical, not only of individuals, such as the Nanyuki welder, but also of many developing nations in Africa, including Kenya. The foundation for this over-reliance seems to be laid during colonialism, and has been sustained through Western donor agencies in the successive years. Kenya has been colonized since the 18th century, and especially the British colonization, until 1963, has left a deep footprint on today's society. By the colonial masters bringing technology into the country and taking overall control, Kenyans stopped innovating and owning it themselves. After colonization, a donor relationship between the West and Kenya was established whereby the voluntary sector has been donating products and services for years, creating a dependency syndrome towards the West (Maathai, 2009). In addition, this dependency attitude is strengthened by Kenya's high power distance, traditionalism and lack of individual initiative, which reflect some of the cultural dimensions described in Hofstede (2005) and Trompenaars (1999) generally attributed to strongly collectivist societies. The Western students encountered difficulties when triggering the local inhabitants to find a solution for the problems themselves by means of starting a discussion and putting different points of view together. This appeared to be challenging, since the villagers considered the students' opinion as the final truth.

In spite of these challenges though, the students were able to successfully transfer the knowledge to the local welder from Naro Moru. As a result, he has so far built and sold four wind turbines to the people in his community.

### **Present internship**

Despite the sufficient wind resources and the mature status of the technology, the uptake of small wind turbines in Kenya has been very low. For this reason, an intern from Delft University has analysed the SWT sector in Kenya. Generally, lack of public awareness and high upfront costs are considered to be the main obstacles for the growth of this sector. However, by means of interviews with stakeholders, the internship student was also able to reveal the underlying societal characteristics that are hindering the dissemination of SWTs in rural Kenya.

The primary determinant for sector growth is entrepreneurship (Samli, 2009). Only a few retailers are actively selling imported SWTs, and only recently a second local SWT manufacturer has entered the market. This lack of entrepreneurial activities is anchored on a myriad of reasons. For many years political uncertainties and corruption were the main obstacles for individuals to engage in, or start a new business. Bribery was a common practice, and only those with good political connections were able to successfully venture into business. For example, tenders did not go to the best proposals, but to the one which was part of the right circle or patrimonial system. Since the demise of the Kanu regime in 2002 and especially after the promulgation of the new constitution of 2009, corruption has significantly reduced. However, fraud is still ingrained in Kenyan society and still commonly occurs in both the public and private sector. Furthermore, despite these improvements, the government still has a bad reputation regarding corruption. In particular, removal of the immediate director of Kenya Anticorruption Authority (KACA), P.L.O. Lumumba and his deputies, are seen as a case of corruption fighting back. As a result, people do not trust the government and would rather avoid government officials than collaborate with them.

A practical manifestation of this state of affairs is the attempt by this intern to get market information and wind data from the government required to carry out SWT experiments or start a business. Unfortunately, she could not access such data because she was required to pay for it. Such a policy puts obstacles in the way of promoting wind energy instead of supporting it. Later, a government official confirmed that actually such wind data are supposed to be available for free, but this statement apparently confirms that existing practices do not meet the standards of official policies. Furthermore, universities and companies which are, or have been, involved in small wind turbines all have collected their own wind data sets and have fragmented market knowledge. This information is not shared amongst them and the individual actors are left with insufficient data to develop appropriate products or successfully commercialize them. Even though the SWT companies also lack financial resources to set up a public awareness campaign, they have not marshalled forces for launching anything like that.



As previously mentioned, the high upfront investment is a key barrier for end-users to purchase a small wind turbine. The majority of the financial institutions have unfortunately been reluctant to support the purchase of SWTs, since there is lack of awareness of the technology and the business opportunities of energy products in general are not recognized. Consequently, no appropriate financing mechanisms for SWTs have been developed so far and the private sector should for this reason establish strategic partnerships with financial institutions.

In addition, linkages are missing between Kenyan universities and the private sector. They rarely collaborate for research purposes, mainly because many Kenyan universities are more focused on teaching than on researching and innovating. Additionally, university graduates with a specialization in wind energy do not find their way to small SWT companies, since they are unaware of their existence. They also lack commercial insights and capital when leaving university, which hinders them in venturing an SWT business. The sector does not only miss SWT skills on a university level, but also in remote communities people do not have experience in maintaining SWT's either. When the SWTs break down no efforts are undertaken to repair them or contact the SWT installation company. As a result, there are various SWTs around the country that are not working properly, which is spoiling the image of SWTs. In the last ten years various foreign universities have been involved in setting up SWT pilot projects. Despite the good intentions, the majority of these pilot projects died after the initiator left the country. Insufficient efforts were taken to transfer the knowledge to local parties, such as Kenyan villagers, NGOs and universities. Besides that, projects often failed because these local organizations and communities had other expectations and were somewhat reluctant to fully cooperate and adopt the transferred knowledge. Thus, TU Delft experiences in Naro Moru were typical of the majority of international collaborations.

The problems with knowledge transfer are not only present during cooperation with foreign universities. Generally, there are hardly any linkages between the different Kenyan SWT actors, and there is no common knowledge or database on the SWT technology and user experiences. Thus every time a new actor initiates an SWT experiment, he or she is starting from scratch instead of building upon gained experiences.

Therefore, we highly recommend that all actors create and strengthen linkages to realize sector up scaling. Additionally, developing wind energy in Kenya must target the development of an SWT innovation system in all areas with good wind potential. One should develop expertise at university level and educate the local people for installing, maintaining, and if possible producing small wind turbines. These factors are necessary to improve the financial



and technical sustainability of small wind turbines, and such a local innovation system would contribute to wind energy promotion as well.

### **The case of Solar Energy**

Another internship student, Max Tack, conducted a study in Kenya on the implementation of solar energy technology and the impact of cultural characteristics on that (Tack, 2010). He did an internship at Sunrays Solar, a medium-sized solar energy technology company in Kenya and conducted many expert interviews about the state-of-the-art of solar energy technology in Kenya, its future prospects and especially the bottlenecks and facilitators for implementation. We report on his findings.

### **Cultural obstacles for cooperation**

The student concentrated on the creation of stakeholder networks. This is difficult in Kenya because of a general lack of cooperation and a climate of selective trust, whereby one can only invest in a selected few that one knows all too well. Specific cultural characteristics which have a long tradition in tribal Africa, may explain the situation. In the first place there is a strong collectivist attitude, which means that generally people are part of closed 'we' groups. This can be the tribe or clan, or a patronage or clientele system, but also a company or a governmental organization, or even an NGO. There is competition, but no cooperation. The consequence of this attitude is that competing companies do not cooperate to enlarge the market, say, by organizing an advertisement campaign together. In addition there is no cooperation within the sector to put in place regulations and agreements in order to maintain the quality of the products. On the contrary, the recently founded sectoral solar energy organization has set high fees for membership thereby making it difficult for new companies to enter the market. Lack of regulation also makes it easy for "crooked companies" to spoil the market by selling bad products which lay idle after a while. This is detrimental to the reputation of solar energy in general, because the technology itself gets blamed instead of the bad organization and management.

Secondly, in Kenya there is strong particularism, which means that generally not rules but relationships are important and, therefore, affective relationships, like and dislike, preclude neutral and role dependent behaviour. People of high status or of the same group, or simply people who know each other and trust each other, receive a preferential treatment. This also affects the regulatory body of the government, which has been established recently. It is important to have access to highly placed government officials in order to keep the company going because bureaucracy may create obstacles for companies - for instance by postponing their license or simply delaying some important papers for the operation of the company. This

means that some big players who are well connected to politicians actually control the market. Customers, too find their way to companies via personal relationships. They do not trust a company but they trust a person. If this person moves to another company his customers will follow suit. There is no anonymous trust like one can expect in a situation where everybody plays by the rules and treats everybody on an equal footing.

Thirdly, status usually is derived from the position within a company or group, not by achievement or by labor. This means that employees pay attention to their status within the group and their relation with the boss more than concentrating on performance and on work and labor. Not much attention is given to maintain good relationships with the users.

In the fourth place, sequential dealing with time, i.e., planning and looking forward, is not strongly developed. From their side users too do not bother about a maintenance contract; of course it costs money and hopefully future days will take care of future problems. Apart from lack of cooperation and of networking between users and companies, there is also lack of cooperation with knowledge institutes. There is strong traditionalism which means that things remain as they are and as a consequence even if there are problems, nobody takes the initiative and everybody is inclined to remain waiting. People recognize that there would be much benefit in having knowledge institutes, like universities, involved in the development of solar energy, if asked. But they are inclined to wait for the other party to start.

Traditionalism and fatalism, to accept things as they are, like rain and sunshine, are closely connected. These create a collectivist attitude that prevents people from going against the group and start something new. Creativity means loneliness, but also initiative. In this regard, another cultural characteristic is involved, i.e., uncertainty avoidance. Facing uncertainty of course means to face an unknown future and often implies to go a lonely way forward into novelty. Generally, people are inclined to avoid situations they do not know for certain how to deal with, lest one does something wrong. Generally, the cultural characteristics summarized here and described by our master student in his interview reports are typical of closed in-group societies like tribal and agrarian societies; not to open markets and to open civil society oriented societies (Kasfir, 1998).

### **Start with network formation**

This state of affairs leads to a situation in which it is difficult to implement sustainable energy technologies because an important first step, network formation, is slow. This has its origin in the compartmentalization of the Kenyan civil society: companies, government bodies, NGOs, often are not very accessible to each other and tend to maintain a culture of closed

“we” groups. This prevents learning experiences to take their course, and finally it does not stimulate the growth of expectations. It is to be mentioned however, that a continuous struggle is going on to create a more open society, open cooperation, and anonymous trust regulated by law and rule involving a culture of egalitarian relationships and personal initiative. This struggle is going on both at the national level and at the societal level, and it is reflected in many projects and partnerships. Kenyan society is moving in the direction of modernity and in this process modern technology and modern organizations play a key role. Engineers, both from Africa and from the West, should have the expertise and the ability to mediate between these two sets of values and cultural traits in managing their projects.

### **Civil Society and Governance**

At the background of the apparent state of affairs is the complex relationship between state and society (Wiarda, 2003, OSSREA, 2009, Kasfir, 1998). An open civil society can only function if a strong and accountable government enforces universalistic rules so that particularistic mind-sets and patronage systems cannot obstruct an open process of constantly regrouping of social actors (Popper, 1965, Fukuyama, 2011), which is indispensable for innovation. Therefore the authors will provide some reflections on the socio-political framework as a precondition of the functioning of an open market and civil society.

Gyekye (1997) sees bottlenecks in Africa as cultural practices that do not help in building a modern society. These are: 1) a negative attitude towards science; 2) ethnicity over and above humanity; 3) apathy towards public service and 4) primacy of the community over the individual. For him, an emphasis on educational and training programs in science and technology can go a long way to help and turn round cultural attitudes while a substitution of the bottlenecks related to extreme communitarianism with a stronger focus on individual responsibility and equality, could obtain a credible dialogue with modernity. Indeed, as Nyasani (2010, vii) observes, “...Africa which is hankering after the attainment of the Western model of development cannot actually achieve it without changing its habits and attitudes in the most radical and deliberate manner possible in tune with the West's development fervour, pace and rigour.” Museveni (1996, 193-194) is even pessimistic on the continent's economic survival:

“Societies that do not master science and technology will either be slaves, surviving at the mercy and sufferance of others, or will perish altogether. Indeed, a futurist cartographer's map of the world of 2025 AD recently appeared in *The Economist*. In that map, only bits of Northern and Southern Africa appeared on that map (sic). In only a short 31 years, most of

Africa will economically disappear. The only way we can prevent this tragedy is to begin our scientific and technological revolution now and in an organized and systematic manner.”

Africa has to face a conscious cultural transition from a tribal/hierarchical clientelistic society, with selective trust towards a stable government and a strong and open civil society (Popper, 1965). Such a society is characterized by pluralistic cooperation and competition of many stakeholders based on anonymous trust and judicial checks and balances. This cultural transition should be explicitly part of the development agenda, and be conducted in a path dependent way, preserving valuable parts from the past, but courageously entering upon a new socio-political and economic dispensation. This can address the issues of poor investment, skewed distribution of available resources, underproduction of civil servants, poor exploitation of natural resources, surfacing corruption and grinding poverty, among many other challenges.

## **Conclusion**

On the basis of theory on innovation systems and civil society, as well as the case material presented and analysed above, our main conclusion is that transparency of policy and management (and for that reason also transparent research-based policy practices) is of utmost importance for the development of businesses, civil society and government apparatus as well. Such transparency can stimulate openness and cooperation between different stakeholders (Collier, 2010) and in turn can be maintained and stimulated by a combination of universalistic government, which treats all social actors as equals and open civil society, which is cultivated by a constant regrouping of its participants. Such a civil society, in which individuals cultivate manyfold memberships of many different organizations and institutions, is not anymore dependent on closed patrimonial systems, and in turn the state apparatus cannot be manipulated anymore by collectivist power games.

But such an institutional environment in which universalistic rule by the state and free association of civil society actors keep each other in check cannot be realized easily. It also cannot be installed merely from a top-down approach. As long as the only means for individuals to make their voice heard in politics is by organizing themselves in clannish or patrimonial systems, there is no solution for the state bureaucracy being manipulated by such collectives. Universalistic rules from the side of the state can only be realized by a more dynamic civil society, meaning that individuals (and individual organizations) can organize their interests, by means of multiple memberships and changing coalitions. Here is the problem: universalistic rule of law and justice needs a dynamic civil society to prevent it from degenerating into corruption and arbitrariness; and in turn a dynamic and open civil society

needs a universalistic state, with transparency and checks and balances in politics, to prevent it from degenerating into a struggle between patrimonial systems (Fukuyama, 2011).

How to take a next step in this dilemma? As we already stated in the introduction, Africa in many respects, is caught up in a set of social rules and morals from the past that do not fit well with the current large-scale socio-technical, economic and political systems anymore and a new civil society oriented set of values, which could check government excesses is not yet in place (Maathai, 2009).

Our case material may show the way ahead. Bottom-up initiatives can, and should, be taken in the form of small businesses and income generating activities. These should be supported by the related skills, knowledge and capacities; and also by formation of networks of relevant stakeholders and by a growing change of attitudes. In the process, more open cooperation between different organizations, companies etc., can be exercised in the form of innovation systems. On the other hand from the top downwards steps can be taken, in the form of more transparent and universalistic policies, in order to facilitate and regulate the initiatives from the bottom. Initiatives on these two levels should dovetail into each other and move the system forward.

Using insights from research such as the case studies presented in this paper to formulate policy and management guidelines are key to this process. It can bring not only the knowledge, but also the transparency to make a convincing case for these lines of action.

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## 24. Rationale for Local Entrepreneurship Development Policies and Programmes in Post-colonial Lesotho: Lessons from the Colonial and Immediate Post-colonial Lesotho

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### **Abstract**

*Since independence, post-colonial governments of Lesotho, their advisors and international supporters have attempted to create a vibrant private sector led by local entrepreneurs. In their efforts, they have demonstrated a lack of adequate understanding of the historical experience of local entrepreneurship. This is evidenced by the way they attempted to explain why Basotho traders have failed in local business, and in the rationale for local entrepreneurship development policies and programmes they designed and implemented. Without deeply interrogating why Basotho traders have historically demonstrated poor performance in local business, they aligned themselves with views that had prevailed in the colonial period, namely, that Basotho failed in business because they lacked an adequate spirit of entrepreneurship and modern business skills. Post-colonial governments of Lesotho saw it as their role to nurture this spirit by providing Basotho traders with entrepreneurship skills, and by providing them with business advisory services. Using some of Basotho traders' past entrepreneurial initiatives in distribution trade, we demonstrate that the basis for Lesotho's local entrepreneurship policies and programmes is not founded on results of researches conducted. As a result, governments' efforts do not address problems that have contributed to Basotho traders' poor performance. They are not geared towards remedying local entrepreneurship problems and misconceptions which exist. They rather perpetrate the idea that Basotho traders' continued poor performance in local entrepreneurship is due to their lack of adequate entrepreneurial spirit and entrepreneurial skills. The argument of this paper is that, like the colonial and immediate post-colonial governments, Lesotho's post-colonial governments have propagated and*

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*used the idea that Basotho traders did not have adequate entrepreneurial spirit and entrepreneurial skills as a way of justifying the protection of foreign traders' interests, and their own interests, on the one hand, and to justify their neglect of the duty to assist the emergence of Basotho traders and the development of a locally-based private sector, on the other. They have been able to achieve that by using political and economic power at their disposal, as well as, their abilities to manipulate legal apparatus and institutions.*

**Keywords:** *Local Entrepreneurship Development, Spirit of Entrepreneurship, Entrepreneurial Skills, Spirit of Co-operation, Private Sector Development*

## **Introduction**

Against the background of the world-wide recession of the 1930s, the Basutoland colonial government commissioned Sir Alan Pim to conduct a survey of the country's economic and financial position in 1935. In assessing the state of local trade and performance of local traders, the Commission asserted the view that Basotho traders lacked business skills and methods<sup>39</sup>. This was an endorsement of a view long-held by European traders and colonial officials, namely that Basotho lacked entrepreneurial initiative, and that, Basotho traders lacked adequate business skills and ethics<sup>40</sup>. With Pim's endorsement, this view was referred to in official and other attempts to explain the undeveloped state of the private sector in Lesotho, characterised by the low quality and low levels of Basotho's participation in local business, lack of growth and failure of Basotho-owned businesses.

In 1966, in the context of the political economy of the cold war period, Lesotho gained independence. The newly independent government of Lesotho opted for the establishment of the capitalist economy. The necessary requirement for this type of economy was the existence of a vibrant private sector in the hands of local modern businessmen. However, according to the government and its advisors, these prerequisites were non-existent. They described Basotho traders as traditional, and lacking adequate entrepreneurial spirit and entrepreneurial skills.

These assessment of Basotho traders was not only limited to Lesotho. In other parts of the continent, African traders were described by modernisation-inspired scholars and business experts as lacking abilities to take risks, mobilise business resources, and create innovative

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<sup>39</sup> *Financial and Economic Position of Basutoland, Report of the Commission Appointed by the Secretary of State for Dominion Affairs (London: His Majesty's Stationery Office, 1935), p. 62.*

<sup>40</sup> *Trade, National University of Lesotho Archives, Leribe Collection, 23/1-12, 25/2, 26/1-4; Trade, Lesotho National Archives, S3/26/1/1-11.*

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ways of maximising profits. African traders were also accused of not having business leadership, motivation and prudent managerial skills due to lack of modernity<sup>41</sup>. Modernisation-inspired scholars and business experts argued that, African traders failed in business because of their traditional habits of supporting big extended families, and inflating their social status with business resources, as opposed to approaching business with high profit aspirations<sup>42</sup>.

Instead of investigating factors which had historically led to Basotho traders' business failure, the immediate post-colonial government of Lesotho inherited and used the view that Basotho traders failed in business because they lacked adequate entrepreneurial spirit and entrepreneurial skills. This became the basis for policies and programmes aimed at developing local entrepreneurship and private sector in Lesotho. As a result, the government saw it as their role to nurture this spirit by providing Basotho traders with entrepreneurship skills, and by providing them with business advisory services<sup>43</sup>. To better understand local entrepreneurship it is important to focus attention on all factors which affect traders' entrepreneurial initiatives<sup>44</sup>.

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<sup>41</sup> Volker Wild, *Profit not for Profit's Sake: History and Business Culture of African Entrepreneurs in Zimbabwe* (Harare: Baobab Books, 1997), p. xxx-xxxii; Theodore Geiger and Winifred Armstrong, *Development of African Private Enterprises* (Washington: National Planning Association, 1964), p. 39; Peter Marris and Anthony Somerset, *African Businessmen: A Study of Entrepreneurship and Development in Kenya* (Nairobi: Routledge, 1971), pp. 13-19; Bruce Dinwiddy, *Promoting African Enterprise* (London: Croom Helm, 1974), pp. 3-5; Zafar Altaf, *Entrepreneurship in the Third World: Risk and Uncertainty in Industry in Pakistan* (New York: Croom Helm Ltd, 1988), pp. 162-178;

<sup>42</sup> The list of characteristics which African traders were accused of lacking is long. See, for example: Joseph A. Schumpeter, "The Process of Creative-Destruction" in Scott Shane (ed.), *Foundations of Entrepreneurship: Volume I* (New York: Edward Elgar Publishing, 2002), pp. 499-598; Wolfgang, "Schumpeter's and Kirzner's Entrepreneurs Reconsidered: Corporate Entrepreneurship, Subjectivism and the Need for a Theory of the Firm", p. 95; David C. McClelland, "Entrepreneurial Behavior and Characteristics of Entrepreneurs", in Scott Shane (ed.), *Foundations of Entrepreneurship*, pp. 179-184; Peter F. Druker, *Innovation and Entrepreneurship: Practice and Principles* (London: William Heinemann Ltd, 1985).

<sup>43</sup> Motlatsi Thabane, "Indigenous Entrepreneurial Initiative and Attempts to solve Problems of access to Credit in Lesotho", seminar paper presented at the National University of Lesotho, 11 September, 2009, p. 1; S. W. Rembe, "Evaluation of Business Training Division (BTD)", Report Produced by Research, Evaluation and Media Division Institute of Extra Mural Studies, February, 1991; *Business Service Calling!! Magazine* published by the Business Extension Services, 1969, p.6.

<sup>44</sup> Maphosa, "Towards the Sociology of Zimbabwean Indigenous Entrepreneurship", *Zambezia*, xxx: ii (1998), p. 174; M. J. M. Sibanda, "Internal Dependency and African Economic Performance in Colonial Rhodesia: The Case of Bus Operators in the Rural Periphery of Salisbury, 1938-1970", *Mohlomi, Journal of Southern African Historical Studies*, III: IV (1981), pp. 1-11; John Iliffe, *The Emergence of Capitalism in Africa* (London: Macmillan Press Ltd, 1983), pp.1-9; Max Weber, *The Protestant Ethic and the Spirit of Capitalism* (London: Parsons, 1930); Motlatsi Thabane, "Aspects of Colonial Economy and Society, 1868-1966", in Neville W. Pule and Motlatsi Thabane (eds), *Essays on Aspects of the Political Economy of Lesotho, 1500-2000* (Roma: Department of History, National University of Lesotho, 2002), pp. 112-115; West, *The Rise of an African Middle Class*; Björn Bjerke, *Understanding Entrepreneurship* (Cheltenham: Edward Elgar Publishing Inc., 2007), pp. 71-72; Shane Scott, *A General Theory of Entrepreneurship: The Individual – Opportunity Nexus* (Cheltenham: Edward Elgar, 2003), pp. 2-5.

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Attention should not only be centred on behaviours of individual traders. It should also be directed towards external factors. In Lesotho, like many African economies, the political economic environment in which Basotho traders operated in did not support their emergence as a defined local business class. This is because entrepreneurship does not take place in vacuum. This paper is an attempt to demonstrate that Basotho traders have shown adequate entrepreneurial spirit and skills in local business. Again, Basotho traders' business failure should also be attributed to the efforts of Lesotho's governments, which were not geared towards assisting Basotho traders as an emerging business class. Rather, they supported the interests of foreign traders. We use the case of Basotho Traders' Bulk Buying Syndicate Ltd (*Thekommobo*), a co-operative which Basotho traders had formed in 1969 to solve their problems of access to credit and supply of stock, as well as, to compete effectively with European traders, which had dominated local business, governments and business advisors.

### **Lesotho's Post-colonial Local Entrepreneurship Development Initiatives**

In 1968, the newly independent government of Lesotho launched the Business Extension Services (BES) under the Ministry of Finance, Commerce and Industry. BES was a United Nations' (UN) programme, administered by the International Labour Organisation (ILO). It was meant to cultivate the spirit of entrepreneurship, business skills and nurture local economic development in Third World countries. Business Extension Officers (BEOs) were employed to train Basotho traders around the country, under the supervision of Commercial Officers (COs). Business extension offices were built in Maseru, which was the headquarters, and two other offices were to be built in the Leribe and Mophale's Hoek districts. However, these two were not built in the period before 1970<sup>45</sup>. BES was monitored by ILO Business Extension Advisors (BEAs). The person ILO sent to Lesotho in this capacity was one German business expert by the name of Mr B. T. Kock<sup>46</sup>. In the period before 1970, BES's activities centred on training members of *Mokhatlo oa Bahoebi Lesotho* (MBL), literally, an association of traders in Lesotho, around the country. At that time, there were around 2,000 Basotho traders<sup>47</sup>.

In 1975, Basotho Enterprises Development Corporation (BEDCO) was established to develop Basotho enterprises through training of entrepreneurial skills, provision of small-scale credit so as to propagate the spirit of entrepreneurship, or build a society with a business

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<sup>45</sup>*Business Service Calling*, p. 3.

<sup>46</sup>*Lesotho News*, 23 July 1968; 4 March 1969; 28 October 1969.

<sup>47</sup>*Business Service*, p. 6.

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culture, or build a business minded society. To this day, BEDCO maintains that *the most common characteristics of [SMMEs] are lack of business management skills and unfamiliarity with management techniques to deal with problems of an enterprise. These include poor or lack of financial and non-financial record keeping, inadequate internal administrative controls, lack of marketing knowledge and skills, inefficient production systems, lack of financial control systems and, a general dearth of business acumen, sensitization to the business culture and inability to handle market shrewdness*<sup>48</sup>.

In 1978, Business Training Centre (BTC) was launched as a joint venture between the National University of Lesotho's Institute of Extra-Mural Studies (IEMS) and the Ministry of Commerce and Industry. Its main duty was to offer business training “to accelerate active participation of the local business community...”<sup>49</sup> BTC formed local links with BEDCO, Lesotho Chamber of Commerce and Industry (LCCI), Lesotho Opportunity Industrialisation Centre (LOIC) and the IEMS' Students Internship Programme. The Students Internship Programme was a United States Agency for International Development (USAID) funded project established among others “to nurture and develop a spirit of entrepreneurship among the students. That is, to develop graduates who, through their practical exposure, might gain interest and eventually start their own businesses after completion of their studies”<sup>50</sup>.

In 2008, the government of Lesotho through the assistance of the United Nations' agency, International Labour Organization (ILO) launched “Know Your Business” (KYB) programme under the Ministry of Gender, Youth, Sports and Recreation. The programme was targeted at youth development and employment creation. Young people are trained in entrepreneurial skills to start and manage their businesses. They are also provided with entrepreneurial education and mentoring to change their mind-set towards business<sup>51</sup>.

What emerges in post-colonial governments' efforts to develop local entrepreneurship is that, they inherited and propagated the view that Basotho traders failed in business because they lacked business acumen. They focused their efforts on the behaviour of individual traders without investigating all factors which had historically led to Basotho traders' poor

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<sup>48</sup> [www.bedco.org.ls](http://www.bedco.org.ls), [20/07/2009].

<sup>49</sup> Business Training Centre, “Report of the International Conference on Strategies for Small Business Survival and Growth in BLS Countries”, February 25-28, 1985, Mazenod, p. 5.

<sup>50</sup> S. W. Rembe, “Evaluation of Business Training Division (BTD)”, p 36.

<sup>51</sup> [www.undp.org](http://www.undp.org), [20/07/2009].

performance in local trade. The following sections attempts to provide an example of Basotho traders' entrepreneurial efforts and what happened to their fortunes.

### **The Fortunes of Basotho Traders' Entrepreneurial Initiatives in the Immediate Post-colonial Lesotho: The Case of Basotho Traders' Bulk Buying Syndicate Ltd (Thekommoho)**

At the centre of their problems in local trade, Basotho traders experienced problems of access to credit and supply of stock in conducting trade since the colonial period. This was, among others, because commercial banks did not allow them access to business loans<sup>52</sup>. Basotho traders responded by forming co-operatives. However, many of their co-operatives collapsed due to financial problems.

That led the advisors of the colonial government in the mid-1930s to recommend that it should not encourage the rise of the co-operative movement. Basotho persisted, and in 1948, the colonial government passed Proclamation No. 47 to officially establish co-operatives<sup>53</sup>. In spite of that, developments in the co-operative movement did not end all their problems. To an extent, some Basotho traders were able to negotiate arrangements in which European traders gave them stock on credit. Again, the colonial government stopped such arrangements in which Basotho traders were benefiting from<sup>54</sup>. Other Basotho traders were able to solve these problems by ordering stock from suppliers in modern-day Republic of South Africa (RSA), directly, or through Lesotho-based representatives of RSA suppliers, like the Whitakers Agencies. These suppliers sold goods to them on wholesale prices, unlike European traders, who, they claimed, sold goods to them at retail prices.

Towards Lesotho independence in 1966, Basotho traders were optimistic of the business opportunities which would come along with political independence. Basotho traders collectively organised themselves by forming, and registering a traders' association which was known as *Mokhatlo oa Baboebi Lesotho* (MBL) in 1968<sup>55</sup>. MBL encouraged other Basotho traders around the country to join. And, it held training workshops for Basotho traders around the country to train them on business skills. It assisted Basotho traders to acquire "...best skills in

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<sup>52</sup>Thabane, "Indigenous Entrepreneurial Initiative and Attempts to solve Problems of access to Credit in Lesotho", pp. 1-4.

<sup>53</sup>Report of a Commission of Inquiry into Coop Lesotho, n.d., p. 8-9; *Financial and Economic Position of Basutoland*, pp. 173-174.

<sup>54</sup>Basutoland Native Trading Proclamation No. 76 of 1936; Basutoland Credit Restriction Proclamation No. 8 of 1937.

<sup>55</sup>Legal Document No. 68/4, *Constitution of Mokhatlo oa Baboebi Lesotho (Hereafter, MBL)*, Lesotho Law Office (hereafter, LLO), Maseru, 31st May 1968.

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fields of commerce” and develop “...proficiency in business techniques” as well as to assist Basotho traders to “...adopt advanced business methods<sup>56</sup>.” Members of the association achieved these aims by organising public lectures, discussions, seminars, and by publishing periodicals and other written material through the media<sup>57</sup>.

The government, together with ILO, assisted MBL in training of Basotho traders through the UN-sponsored “Business Extension Services”. Mr B. T. Kock, the Business Extension Advisor, together with some civil servants and some leaders of MBL, travelled around the country training members of MBL and other Basotho traders<sup>58</sup>. In an interview with Mr Mafantiri in 2009, he said that he used to travel with Mr B. T. Koch training Basotho traders<sup>59</sup>.

For example, on the 13th July 1968, the government of Lesotho and Mr B. T. Kock, together with MBL, held a training workshop for Basotho traders in Leribe. Courses which were offered to the traders were: Bookkeeping, Statistical Records, the Employment Act, Income Tax Law and its Implications, and Buying and Selling Policies, Co-operation among Businessmen, Starting Businesses, Managing Businesses, Elements of Modern Businessmanship, Employment of People and Legal Aspects of running a Business<sup>60</sup>.

In 1969, MBL took over the idea of forming a bulk buying arrangement from individual Basotho, as well as all processes necessary for its coming into being. But then, when they found it, Thekommoho, literally buying together, was not formed just as a bulk-buying arrangement, but it was registered as a co-operative under the Co-operative Societies Act of 1966, as Basotho Traders' Bulk Buying Syndicate Ltd<sup>61</sup>. Thekommoho had around 400 members, of whom 220 were shareholders<sup>62</sup>. Basotho traders had hoped to establish Thekommoho branches in all the modern-day districts of Lesotho, and a bank. However, before its collapse in 1970, only two branches had been established. These were the Maseru Branch (in the capital city of Lesotho), which became the headquarters, and the Leribe Branch, in the north-western district of the country.

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<sup>56</sup> *Legal Document No. 68/4, LLO, Constitution of MBL.*

<sup>57</sup> *Lesotho News, 23 July 1968.*

<sup>58</sup> *Lesotho News, 26 April 1968; 23 July 1968; 4 March 1969*

<sup>59</sup> *Interview with Pitso Mafantiri, 70 years old, private accountant and former representative of South African Firms to Thekommoho, Borokhoaneng, July 2009.*

<sup>60</sup> *Business Service, pp. 6-20.*

<sup>61</sup> *Lesotho News, 14 October 1969.*

<sup>62</sup> *Lesotho News, 2 October 1970.*



### **Establishment of the Maseru and Leribe Branches of Thekommoho**

MBL sent two of its members, Pitso Mafantiri of Maseru and Mr Potloane of Leribe, to RSA to negotiate with manufacturers and wholesalers to sell stock to Thekommoho on credit because Basotho traders had problems of access to credit. Basotho traders proposed that the co-operative would sell stock to its members, and within 30 days, service their debt. Many of the suppliers agreed to Basotho traders' proposal. Upon their return, the two gentlemen gave their report. On 12th October 1969, Lesotho News reported that MBL "held a big general meeting" to officially launch the Basotho Traders' Bulk Buying Syndicate Ltd<sup>63</sup>. Mrs 'Mamoshebi Kabi was appointed to be the Manager of the co-operative, while Mr Mafantiri became the representative of RSA suppliers<sup>64</sup>. In an interview with Joe Motsoahae in August 2010, he asserted that MBL had requested the Government of Lesotho to allow them to use the Lesotho Co-operatives buildings, located near the present-day Maseru Traffic Circle along the Main South One Road, as Thekommoho warehouse and offices. The government had agreed to their request because those buildings were not in use at the time<sup>65</sup>.

Orders for stock were then sent to RSA firms in October 1969. Thekommoho stock arrived at the Maseru railway station. However, according to Mr Motsoahae, when that first consignment arrived, the government told Basotho traders that they could no longer use the Co-operative buildings. Quick arrangements had to be made to collect Thekommoho stock from the railway station to avoid storage penalties. An ad hoc meeting was called to solve the problem. Members "... decided that anybody who had space in their shop should assist so that the stock could be removed from the station..."<sup>66</sup> Thekommoho stock was then taken to Basotho traders' shops. The bulk of the stock was taken to Thabiso Santho's premises at Phamola Cash Stores, near Lesotho High School, behind present day Kentucky Fried Chicken (KFC) in Northern Region Bus Stop area. These premises became Thekommoho headquarters<sup>67</sup>.

The difficulties that Thekommoho experienced when their first consignment of stock arrived were evidence that, despite attempts by Basotho traders to work with the newly independent government and develop local entrepreneurship, the government did not support Basotho

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<sup>63</sup>*Lesotho News*, 14 October 1969.

<sup>64</sup>*The Lesotho Monitor*, 06 June 2008; interview with Pitso Mafantiri, Borokhoaneng, July 2009.

<sup>65</sup>Interview with Joe Motsoabae, 81 years old, businessman and former member of Thekommoho, Bloemfontein, August 2010.

<sup>66</sup>Interview with Joe Motsoabae, Bloemfontein, August 2010.

<sup>67</sup>*The Lesotho Monitor*, 06 June 2008.

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traders. Instead, the government took measures to undermine Basotho traders' entrepreneurial initiatives. The government could not even afford Basotho traders the courtesy of notifying them in time that it had changed its decision to assist them. The Basutoland National Party (BNP) led government did not support MBL because it viewed Thekommoho as a Basutoland Congress Party (BCP) initiative since most of its members and leaders were active supporters of BCP, the major opposition party<sup>68</sup>. In addition, the government accused Basotho traders of politicking with their businesses. The government alleged that some Basotho traders used their businesses as political platforms. In October 1969, the Prime Minister, Chief Leabua Jonathan threatened that he had given the Minister of Commerce and Industry the powers "... to withdraw trading licences of holders who will not fulfil their work as servants of the public but continue to use their business for political purposes<sup>69</sup>."

Despite lack of support from the government, MBL successfully launched the Maseru branch of Thekommoho at the end of October 1969<sup>70</sup>, and the Leribe branch towards the end of 1969. The Leribe branch used Mr Shabalala's premises, a Mosotho businessman, in Hlotse, the centre of the Leribe district, as its warehouse and office. Its stock was collected from the Ficksburg and Fouresburg railway stations by Basotho traders' trucks. The branch banked with, and paid their accounts through, Barclays' Bank<sup>71</sup>.

Thekommoho became so successful at a time and threatened to shift business away from long established European traders. Many Basotho customers bought their groceries from Basotho traders because they sold goods to them at low prices. Thekommoho was able to do that because it bought goods in bulk, and therefore, RSA suppliers sold stock to them at wholesale prices and also gave customers 'specials' and discounts. RSA suppliers also gave Thekommoho advertising brochures to give to customers. This revolutionised advertising in Lesotho.

Again, the co-operative was able to sell goods at low prices because it happened that, in the 1960s, traders used to pay Maize Levy to the RSA government when they imported maize and

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<sup>68</sup> *Interview with G. G. Malableba, 85 years old, former teacher, businessman and former Secretary of Thekommoho, Maseru, August 2009.*

<sup>69</sup> *Lesotho News, 14 October 1969.*

<sup>70</sup> *Lesotho News, 19 August 1969.*

<sup>71</sup> *Interview with Ramafokisi Mofokeng, 85 years old, former businessman and former organiser in the founding of Leribe branch of Thekommoho, Leribe, September 2009.*

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maize products into Lesotho. All traders in Lesotho had to increase their prices on maize and maize products due to the levy. The RSA government used the revenue collected from Maize Levy to compensate farmers in RSA in times of crop failures caused by natural disasters. By the end of 1969, RSA farmers were told to take insurance instead, and the Maize Levy was removed. Thekommoho took advantage of the removal of the Maize Levy and dropped their prices on maize and maize products. Therefore, Basotho traders were able to sell at lower prices than European traders. Maize and maize products were staple foods in Lesotho and their demand was relatively inelastic. People bought them even when their prices went up. However, a drop in their price would be good for business and profits. On the other hand, European traders did not bring down their prices of maize products after the abolition of the Maize Levy. Instead of reducing prices, they considered removal of the Maize Levy as “...an opportunity to make [more] money... They took that money<sup>72</sup>.”

Feeling the pressure brought by Thekommoho in local trade, European traders approached Thekommoho leaders, and requested them to increase their prices because they were outcompeting European traders<sup>73</sup>. When they failed, European traders attacked Thekommoho in newspapers<sup>74</sup>.

### **Thekommoho's Internal Problems**

Thekommoho started to encounter problems internally, and these undermined its operation. The first one was that, instead of insisting that its members buy stock in cash as had been initially agreed, Thekommoho allowed some of its members to obtain stock on credit. Financial Statements as at 31st June 1970 revealed that bad debts amounted to R400.00. The co-operative had also made a loss amounting to R2,000.00<sup>75</sup>. In an interview with Pitso Mafantiri in July 2009, he gave an example of Buta Phalatsi of Buta Stores and President of MBL, that at one point he “...had taken stock that could be worth R3, 000.00<sup>76</sup>.” The debts that Thekommoho accumulated crippled its ability to advance Basotho traders' control over local trade.

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<sup>72</sup>P Interview with Joe Motsoabae, Bloemfontein, August, 2010.

<sup>73</sup>Interview with G. G. Malableba, Maseru, August 2009.

<sup>74</sup>Interview with G. G. Malableba, Maseru, August 2009.

<sup>75</sup>*Lesotho News*, 2 October 1970.

<sup>76</sup>Interview with Pitso Mafantiri, Borokhoaneng, July, 2009.

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The second problem was dishonesty among members. Some of Thekommoho's members who collected stock at the Maseru and Ficksburg railway stations and Foursburg border post stole some of the stock for their shops<sup>77</sup>. Theft in Thekommoho was not only limited to stock. In Leribe, there were some instances where some members stole money to be used for purchasing Thekommoho's stock<sup>78</sup>.

Thekommoho's third problem was that, in the period between December 1969 and the time before the State of Emergency was declared by Chief Leabua Jonathan on the 30th January 1970, there was a conflict between the co-operative and the representative of RSA firms, Pitso Mafantiri. The bone of contention was that, Thekommoho demanded that the commission that Mr Mafantiri was receiving for his services should go to Thekommoho, instead. However, Mr Mafantiri refused that demand. Consequently, Thekommoho committee wrote letters to RSA suppliers informing them that Thekommoho no longer recognised Mr Mafantiri as their representative; that they should no longer send stock through him, that they would make the orders themselves; and that all commissions Mr Mafantiri had been receiving should go straight to Thekommoho's account. RSA firms refused Thekommoho's demand. They argued that they were the ones who employed him as their representative, and not Thekommoho. In response, Thekommoho threatened to stop buying their stock from all those firms. However, the threat did not bring desired results. Rather, RSA firms stopped to supply stock for about a month, and informed Thekommoho to sort out its internal problems. Thekommoho leaders approached Mr Mafantiri again, and asked him to continue with his services as a representative.

### **European Traders' Acts of Sabotage**

Other problems that Thekommoho experienced had to do with acts of sabotage by European traders who intended to undermine the cooperative. There were suggestions that European traders convinced some Thekommoho members to sabotage their co-operative. In an interview with Mr Mofokeng, he pointed out that, in Leribe, they found out that there were some members of Thekommoho who took stock on credit and deliberately did not pay their debts. He asserted that they later found out that those were Basotho traders who had been bribed by European traders in Ficksburg to destroy Thekommoho from inside because it was taking business from them<sup>79</sup>.

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<sup>77</sup> *Interview with Pitso Mafantiri, Borokboaneng, July, 2009; interview with Ramafokisi Mofokeng, Leribe, September 2009.*

<sup>78</sup> *Interview with Ramafokisi Mofokeng, Leribe, September 2009.*

<sup>79</sup> *Interview with Ramafokisi Mofokeng, Leribe, September 2009.*

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Another problem that Thekommoho members regarded as resulting from European traders' acts of sabotage had to do with bad communication between RSA Railways, who transported Thekommoho's stock to Lesotho, and the co-operative's managers. This bad communication led to Thekommoho losing a lot of money in stock. For example, when Thekommoho consignments had arrived at the railway station, Basotho traders were not informed in time that their stock had arrived. The result was that, Thekommoho could not collect their stock on time and, by the time they did so, they would not only pay higher storage costs but they would also find some of their goods damaged by water. Thekommoho members suspected that European traders had requested goods-train crews to make small holes on container covers, allowing Thekommoho goods to be destroyed by rain<sup>80</sup>.

In January 1970, the Prime Minister, Chief Leabua Jonathan, declared a State of Emergency. In the aftermath of the State of Emergency, Thekommoho was moved from Mr Santho's premises to Buta Phalatsi's shop, which was a smaller site than the previous warehouse. At Buta Stores, Thekommoho was managed by Mrs Joyce Phalatsi, Buta Phalatsi's wife, and Maqhoaelane Hlekane, the Vice-President of MBL and Organising Secretary of Thekommoho. In our interview, Mr Motsoahae said that, while Thekommoho was operating there, one of the managers of Frasers, a European by the name of Mr Brown, who was fluent in Sesotho, would make telephone calls to Mrs Phalatsi asking her about Thekommoho's prices on certain items. In other instances, Mr Brown would send his staff to Thekommoho to pose as customers and record its prices on certain items. Mr Motsoahae pointed out that Mrs Phalatsi would consult him, seeking advice on how to deal with that matter, and Mr Motsoahae would tell her not to answer Mr Brown's requests. However, they found it difficult to deal with Mr Brown's employees posing as customers because they could not expel customers<sup>81</sup>.

### **The Impact of the 1970 State of Emergency on Thekommoho**

On the 27th January 1970, general elections were held in Lesotho. Those who observed them, including the government, agreed that the elections proceeded well. On 30th January, as the results of the elections were being announced, the State-run Radio Lesotho stopped announcing results and, instead, announced that Chief Leabua Jonathan, the Prime Minister, would be addressing the nation later that day. This happened at a point where BNP and BCP

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<sup>80</sup> Motlatsi Thabane's interview with Mr G. Sekhibane, a former bakery owner and Committee Member of MBL, Motimposo, June 1999, as quoted in Thabane, *Aspects of Colonial Economy and Society, 1868-1966*, p. 115.

<sup>81</sup> Interview with Joe Motsoabae, Bloemfontein, August, 2010.

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had won 23 constituencies each. When the time for Chief Leabua Jonathan's speech came, he announced that there had been widespread intimidation during the elections. To ensure law and order, he declared a State of Emergency and suspended the constitution<sup>82</sup>. As a result, constitutional rule collapsed, and opposition parties' members all over the country were brutally and violently harassed. BCP members were amongst those who were brutally harassed. The shops of those of them who were traders were burnt<sup>83</sup>. For example, in our interview with Mr Malahleha, he pointed out that:

*... During the emergency in 1970...we were suspected to be, what? The – the – belonging to opposition which had won the elections at the time... But, you see, oh – oh what happened was this; the Thekommoho were – were apparently people who were – not many of them were members of the National Party and the National Party had lost the elections... most of the traders were people who supported the Congress, you see! And they were harassed very badly, very, very badly! Now, this, now I may – I might even become emotional about it. My own brother was beaten there Ha – Ha – Ha 'Maseribane for two nights in succession, non-stop! From ten o'clock to four o'clock in the morning. You get it? That was terrible because he was a businessman in Mafeteng and he naturally – he did support the – the - it directly. He did support eh the – the [BCP]<sup>84</sup>.*

Mr Malahleha also remembered one incident that happened to Mr Dabambe, a rich businessman in Mafeteng. Mr Dabambe had shops, animals and property, which included automobiles. Mr Malahleha recalled that the government burnt down his businesses, trucks and chickens. He said that Mr Dabambe's property “...burnt for something like two weeks, still burning! That man left that place on a bicycle, a man who had cars...”<sup>85</sup>

Thekommoho leaders were imprisoned together with various opposition members. Thekommoho was closed down and its stock was raided by Police Mobile Unit (PMU)<sup>86</sup>. As will be seen in the next section, the co-operative was later opened at a different location. The government alleged that they had uncovered the BCP plan of violence across the country. The PMU found 21 inflammable bombs, a 303 rifle and ammunition, swords, axes and knives in Buta Phalatsi's store and other Basotho traders' shops<sup>87</sup>.

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<sup>82</sup>B. M. Khaketla, *Lesotho 1970: An African Coup under the Microscope* (London: C. Hurst & Co., 1971).

<sup>83</sup>Ntsukunyane Mphanya, *My Life in the Basutoland Congress Party* (Maseru: Motjoli Publishers, 2010), pp.85-89.

<sup>84</sup>Interview with G. G. Malahleha, Maseru, August 2009.

<sup>85</sup>Interview with G. G. Malahleha, Maseru, August 2009.

<sup>86</sup>*Lesotho Monitor*, 06 June 2008.

<sup>87</sup>*Lesotho News*, 14 April 1970.

### **Collapse of Thekommoho and Factors Behind it**

At independence, the newly independent government of Lesotho and European traders formed relations to protect each other's interests. In the process, they marginalised Basotho traders in local business. It was within the context of the development and reciprocal nature of this relationship that the government and European traders jointly put an end to Thekommoho. The relationship between the government and European traders benefited these two partners. Basotho traders were viewed as a common obstacle which had to be eliminated. That was because, on the one hand, Basotho traders were European traders' business rivals, on the other hand, they were viewed as a political threat by the BNP government because many Basotho traders were BCP supporters, the major opposition party.

In fact, as a political party, BNP was founded as a conservative political party by Chief Leabua Jonathan and Gabriel Manyeli. The party was intended to be friendly towards Europeans, missionaries and traders, and chieftainship in Lesotho<sup>88</sup>. In its formation, it was supported by Roman Catholic Church (RCC). The RCC had grown increasingly irritated with the activities of BCP which it regarded as communist in ideology. By initiating and supporting formation of BNP, the Church sought to fight communism in any form it could appear in Lesotho<sup>89</sup>. In an interview with Mr Mphanya, he also maintained that European traders partnered with the government to destroy Thekommoho. He pointed out that European traders claimed that "...Thekommoho was the one which was spoiling Basotho, and should also be destroyed. It was still a thing of the communists..."<sup>90</sup>,

Thekommoho operated from October 1969 and it collapsed around June 1970. As we saw, towards the end of 1969, the RSA Government removed the Maize Levy, and RSA farmers were told to take insurance on their crops. That made it possible for Thekommoho to reduce its prices on maize and maize products imported into Lesotho. As an attempt to undermine Thekommoho, European traders approached the Government of Lesotho to introduce tax on maize and maize products imported into Lesotho. Chief Leabua Jonathan's regime agreed because it was in financial crisis because of the State of Emergency<sup>91</sup>. Thekommoho did not

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<sup>88</sup> Steven J. Gill, *A Short History of Lesotho: From the Late Stone Age until the 1993 Elections* (Morija: Morija Museum and Archives, 1993), p. 211.

<sup>89</sup> L. B. J. Machobane, *Government and Change in Lesotho, 1800-1966: A Study of Political Institutions* (London: Macmillan Press LTD, 1990), pp. 285-287.

<sup>90</sup> Interview with Ntsukunyane Mphanya, Mapoteng, August 2009.

<sup>91</sup> Neville W. Pule, "Politics since Independence", in Neville W. Pule and Motlatsi Thabane (eds), *Essays on Aspects of the Political Economy of Lesotho*, p. 176.



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comply with that law, and it continued trading without collecting the Maize Levy. However, European traders collected the Maize Levy.

In the aftermath of the State of Emergency, Thekommoho members who were not imprisoned resuscitated Thekommoho. One of the steps that they took towards this end was to move Thekommoho from Mr Santho's premises to Buta's Store. Just as Thekommoho was starting to take shape again, the Government of Lesotho sued it for not paying Maize Levy. The co-operative was represented by one lawyer from Lekokoaneng, Mr Kolobe Motlamelle. Mr Motsoahae informed us that the High Court found Thekommoho guilty of not collecting Maize Levy, and it was instructed to pay the government around R90,000. 00. However, it could not pay such an amount of money at the time. The result was that the co-operative's stock and property were auctioned by the High Court to repay the tax. According to Mr Motsoahae, trucks belonging to the Deputy Prime Minister, Chief Sekhonyana 'Maseribane, took all Thekommoho stock to his businesses. Mr Motsoahae recalled that after the court case

Thekommoho was closed. Our properties...Everything was sold, yes. The High Court sold them there. Good properties, our properties which were still new, brand new, you understand that was an organisation of about six months...My heart was so painful. The safes were so new, the typewriters, the [cyclone style] machine...office desks and chairs, everything was still new. People bought them and I was watching. My heart was so painful<sup>92</sup>.

Thus, the verdict of High Court put an end to Thekommoho. Though Mr Motsoahae had forgotten the details of the court case, he could still remember that: "... truly that case was worked in such a way that we would be defeated<sup>93</sup>."

### **Conclusion and Recommendations**

None of the evidence presented here is evidence of a society with lack of adequate entrepreneurial initiative. Therefore, the view that Basotho traders demonstrate poor performance in local trade because they do not have adequate entrepreneurial spirit and entrepreneurial skills is not accurate. This view was propagated by both the colonial and immediate post-colonial governments of Lesotho to justify their support of European traders' interests with the access they had to state political power and their control of legal institutions, on the one hand, and their neglect of entrepreneurial efforts of Basotho traders,

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<sup>92</sup> Joe Motsoabae, *Bloemfontein*, August, 2010.

<sup>93</sup> Joe Motsoabae, *Bloemfontein*, August, 2010.

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on the other hand. Therefore, Lesotho's policies on local entrepreneurship and private sector development was based on unfounded and bias grounds, which has attempted to justify the actions and benefits of, a minority of a profiteering groups instead of the majority of the citizens.

Development of local entrepreneurship and the creation of a vibrant private sector in Lesotho is a complex process undermined by local politics and lack of transparent distribution of resources to the citizenry. Leaders of the government and opposition alike should aim to develop policies and programmes to empower Basotho traders and develop the country's local economy, irrespective of the political differences. This should take the form of addressing accurately identified problems which hinder Basotho traders' success in local trade, and the exercise should also ensure intergenerational flow of entrepreneurial flair among Basotho. In this way, the country will have consolidated and long-term programmes which will not be affected by government change and governments' support of minority local business pressure groups made up of friends, family and other of political associates.

It is an undisputed fact that the immediate post-colonial government attempted to assist Basotho traders through BES. However, the government's intervention lacked long-term structures and follow-up mechanisms, not to mention that, as the study has shown, their intervention did not address problems that existed. The government even undermined the very same people it was assisting because of political differences, and the government supported European traders. There is evidence that the government did not set-up infrastructure aimed at assisting Basotho traders on foundations which would ensure that local political divergences and other pressures in local trade would not strangle the long-term development of local entrepreneurship.

The government should also partner with Basotho traders, instead of supporting foreign business interests in the country. It should use political power and control of legal institutions to develop local trade, without any hidden agendas of supporting certain individual, or groups at the expense of the majority of the citizens. National resources and responsibilities should be carried out by all, for the benefit all.

Again, all these cannot be realised within a short time, and with minimal efforts. People's perceptions also have to change. There is need for a long-term plan which must recognise that government has a role in achieving private sector development by sponsoring and mobilising change in various sectors of society.

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# Conclusion & Policy Recommendations

The 2011 ATPS Annual Conference and Workshop which was held from 7-11 November in Mombasa, Kenya was aimed at engaging relevant stakeholders in addressing the gaps between research, policy and practice in Africa. This is based on the rationale that for research to have the impact of guaranteeing development gains in Africa, research results must inform and shape policies and programmes, and be adopted into practice. The conference engaged a dynamic mix of scientists, policy-makers, science journalists, private sector actors, the civil society, students and policy research advisors in stimulating debates addressing the gap between policy research and policymaking with a view to designing a proactive way forward for bridging this gap for African development. Deliberations during the conference/workshops focused on understanding the context-specific reasons for the gaps between research, policy and practice in Africa and hence identify and prioritize strategies for improving the linkages for a better use of home-grown policy research evidence in policymaking and policy implementation. Lessons from successful cases of good partnerships and linkages amongst the stakeholders in Africa and beyond were drawn so as to enhance experiential learning from a transdisciplinary perspective.

Delegates at the conference/workshops concluded that there is still lack of collaboration and linkages between and amongst researchers, policymakers and practitioners in Africa for African development. They strongly emphasized the lack of effective communication and supports for knowledge brokerage platforms as responsible for the gap. They also blamed the lack of understanding of each other's 'language' as fuelling the gap between and amongst the stakeholders. They further noted that policy research efforts are yet to fully operate in transdisciplinary manner which ideally should give the opportunity for all stakeholder engagements in problem solving for a sustainable development. They also blamed inadequate capacity to conduct policy research that could translate into an effective policy as the bane for the much desired linkage. Stakeholders were encouraged to learn from the few successful case examples of good practices in research, policy, and practice linkages in Africa which were highlighted during the conference/workshop. It was noted that sporadic progress in linking

policy research to policymaking have been recorded in some African countries such as South Africa, Nigeria, Kenya, Lesotho, and Malawi. Nevertheless, the use of policy heavily informed by research evidence in critical domains in policymaking still leaves much to be desired. Africa's policy agenda has not fully exploited the expertise of African professionals, leaving the African policy landscape much too influenced by the agendas of external development agencies, consultants, and bilateral development partners.

Based on the conclusions derived above, delegates proffered the following policy recommendations:

1. There is need for a “Knowledge Broker” that will facilitate the linkage between and amongst research, policy and practice. The knowledge broker should be able to link the people who create and use knowledge, assist the research community in identifying research problems that are relevant to policymakers and facilitate the uptake of research knowledge by policymakers. The ATPS as a transdisciplinary policy research institution has been championing this knowledge brokerage role in the area of science, technology and innovation for African development for over a decade and will need governmental and intergovernmental as well as non-governmental supports in Africa and beyond in order to fully realize this competitive role. This they should accomplish through their unique networks across Africa and in Diaspora.
2. There is need to strengthen capacities of African researchers to be able to address African policy needs and for policymakers to use research evidence in the formulation of policies.
3. There is need for policy research institutions such as universities to set up their curricula across transdisciplinary themes so as to be able to address the multi-faceted challenges of the society. Because policy research institutions are suppliers of knowledge, they should focus on training, advocacy and outreach to policymakers.
4. The communication of policy research results and policy needs should be symmetric flowing both ways between policy research and policymaking and in simple understandable language.
5. The influence of development partners on policy research agenda in Africa should only be marginal and subject to critical review by local experts to be able to determine areas of development priorities, problems and needs in specific localities. Sometimes, their motive to impose their own external development agenda and market oriented perspectives limits the implementation of internally developed priorities.



6. There is need for regular networking and interactions between and amongst the researchers, policymakers and practitioners so that they can understand each other's interests, challenges and forge common ground. Through such fora, a harmonized agenda which addresses each stakeholder's interests can be created

Finally, the delegates through a communiqué (See Appendix 1) called on the African Union and its member States to adopt and proactively support leading African institutions engaged in policy research such as ATPS, FARNPAN, ACET, APHRC and facilitate their inputs into policy processes. Recognizing that these institutions are already leading in the various key areas of need including STI capacity building for African Development, agricultural policy research for attaining the food security, in the economics of transformations, and population and health research for African development respectively should;

- i. Create a consolidated fund for African Policy Research and Development at continental and national levels, recognising that “he who pays the Piper dictates the tune”;
- ii. Honour their commitment to increase their budgetary support to research and development to the recommended one percent (1%) of the GDP;
- iii. Create favourable policy environment to promote private sector engagement in science, technology and innovation for African development;
- iv. Support existing initiatives that encourage mentorship for active engagement of youth and women in STI policy research, and policy implementation.
- v. Encourage the promotion and propagation of STI in the mass media; and
- vi. Encourage the appointment of STI policy advisors for national governments.

# Appendix 1

## COMMUNIQUÉ ON STRENGTHENING LINKAGES BETWEEN POLICY RESEARCH AND POLICYMAKING FOR AFRICAN DEVELOPMENT

by

*The Delegates of the 2011 African Technology Policy Studies (ATPS)  
International Conference and Workshops, 8TH – 9TH November 2011,  
Mombasa, Kenya*

### **Preamble:**

We, the delegates comprising policy researchers, policymakers, private sector actors (business and industry), civil society, and the media drawn from 29 countries in Africa, Europe, North America, the Caribbean, and Asia, met in Mombasa, Kenya 8 – 9 November 2011; for an International conference on “Strengthening Linkages between Policy Research and Policymaking for African Development”.

The conference was organised by the African Technology Policy Studies Network (ATPS) as an implementation activity in response to the recommendations of the African Manifesto for Science, Technology and Innovation launched in Cairo, Egypt in 2010, and the UNESCO Science Report, 2010. Both publications demonstrated the role of STI as the engine of development globally and the fact that Africa still lags behind in the various indicators of progress in STI development. The need for strengthening linkages between Policy Research, Policymaking and Policy Implementation were identified as a key challenge to the growth of STI in Africa by both reports.

This international conference organized by the African Technology Policy Studies Network (ATPS) and its partners including the African Population and Health Research Consortium (APHRC); the African Centre for Economic Transformation (ACET) and the Food, Agriculture and Natural Resources Policy Analysis Network (FARNPAN) sought to address the weak linkages between policy research and policymaking for African development, recognising that:

- *“Only the mastery and unremitting application of science and technology can guarantee human welfare and human happiness” (President Kwame Nkrumah, 1993).*

This important role for science, technology and innovation in fostering socio-economic development has been recognized by African Heads of States in their various declarations

including the Lagos Plan of Action, the AU/NEPAD Consolidated Plan of Action and other regional economic communities;

Whereas there are pockets of success in application of science, technology and innovation including the mobile telephony and telecommunications, the continent generally lags behind and has not fully reaped the benefits afforded by science, technology and innovation for its development endeavours;

While this failure to harness science, technology and innovation can be attributed to many factors, key amongst these is the lack of appropriate policies to guide and foster an African science, technology and innovation agenda.

In our deliberations, we have further noted the need to:

Strengthen capacities of African Researchers to address African policy needs and Policymakers to use research evidence in policymaking;

Encourage multi-stakeholder involvement in Science, Technology and Innovation policy research, policy making, and policy implementation processes;

Foster high moral and ethical standards in research and policymaking, learning from existing norms in African society;

Support appropriate capacity building and Mentorship programs for African Youths and Women to participate in STI policy research, policymaking and policy implementation.

Link research to economic productivity in Africa

We recommend that the African Union and its member States should:

vii. Adopt and proactively support leading African institutions engaged in policy research such as ATPS, FARNPAN, ACET, APHRC and facilitate their inputs into policy processes.

Recognizing that these institutions are already leading in the various key areas of need including STI capacity building for African Development, agricultural policy research for attaining the food security, in the economics of transformations, and population and health research for African development respectively;

viii. Create a consolidated fund for African Policy Research and Development at continental and national levels, recognising that “he who pays the Piper dictates the tune”;

- ix. Honour their commitment to increase their budgetary support to research and development to the recommended one percent (1%) of the GDP;
- x. Create favourable policy environment to promote private sector engagement in science, technology and innovation for African development; and
- xi. Support existing initiatives that encourage Mentorship for active engagement of youth and women in STI policy research, policy research and policy implementation.
- xii. Encourage the promotion and propagation of STI in the mass media
- xiii. Encourage the appointment of STI policy advisors for national governments

On behalf of all the delegates and other partners, we mandate the African Technology Policy Studies Network to send a delegation to the African Union Commission for further discussions and consideration of these recommendations.

**Signed on this 9th day of November 2011**

### **Delegates List**

[http://www.atpsnet.org/Files/Annual\\_Conference\\_Participants\\_List.pdf](http://www.atpsnet.org/Files/Annual_Conference_Participants_List.pdf)



**The African Technology Policy Studies Network (ATPS) is a multi-disciplinary network of researchers, private sector actors and policy makers promoting the generation, dissemination, use and mastery of science, technology and innovation (ST&I) for African development, environmental sustainability and global inclusion. ATPS intends to achieve its mandate through research, capacity building and training, science communication/dissemination and sensitization, participatory multi-stakeholder dialogue, knowledge brokerage, and policy advocacy.**



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ISBN: 978-9966-030-78-8