



**RESEARCH - POLICY LINKAGES OF SCIENCE - RELATED MINISTRIES AND  
THEIR RESEARCH ORGANIZATIONS**



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# **1 Introduction and Background**

## **1.1 Background**

The process of developing, approving, and implementing policies differs from one country to another despite some similarities. Over the years, the policymaking framework in Tanzania has been changing depending on the nature of a policy and the specific period in history. Policy evolution and policy process in Tanzania can be presented in to two phases (Mashindano 2007 and Montez 2010). The first phase covers the period prior to the adoption of liberalization policies, while the second phase covers the post liberalization period. Prior to the economic and political reforms which were adopted from early 1980s, and introduction of multiparty system, decision making and policy making process were dictated from the center with limited participation of stakeholders. Strategic decisions were highly political and had always been integrated in the framework of the ruling party's central committee and cabinet meetings. This is a time when the economy was mainly controlled by the Central Government. Thus, all major policy decisions were made centrally and largely only the government used to determine the direction and subsequently the outcomes of policy changes.

There was limited policy debate and dialogue between researchers and government. As pointed out earlier, this could have happened due to the prevailing ideological perspectives and capacity constraints. The interaction was mostly within the government and was not broad-based and transparent. In fact, the government engaged, mostly expatriate researchers to inform planning and policy processes as manifested in the formulation of the initial three-year (1961-1963) and five-year (1964-1969) Development Plans and Programmes (Wangwe in Mwakapugi 2010).

Strong party leadership always allowed the center to push through important policy decisions, or reject others without proper research and analysis. Advice from technocrats was only used as a filter by the political body to reach a final decision. Although technical advice including research work was strong and available particularly in highly technical matters such as monetary policy, it lagged behind the ruling party's concern for political stability and state legitimacy. Thus technocratic advice and research that did not augur well with political objectives was often times dismissed and alternatives sought that suited the party's interests. Thus, the policy processes by then were less complex compared to the post liberalization period. This is mainly the time of Ujamaa ideology adopted after the Arusha Declaration in 1967.

Since the decision came from one source, policy process wasn't meticulous. Policy process was therefore less complex and was based on very limited ideas and inputs. Among the policy decisions made during this era includes nationalization of the major means of production, and creation of Ujamaa Villages. Policy actors and the associated

institutions were therefore very limited. The process reflected the interests of the government executives who were the only major actors.

Dynamics of the policy process changed significantly after liberalization. Unlike during the first phase where drivers of policy changes used to be influenced largely by the political elite under a single party system, today policy making and implementation in Tanzania is to a larger extent guided by the election manifesto of the ruling party which is assumed to reflect peoples' interests. Policy formulation involves wide consultation as an aspect of the democratic process, despite the fact that it is not without its problems. The policy cycle entails five major stages including problem identification (understanding the policy issue or problem); exploration of possible options available to solve the problem; assessment of each of the identified option; select the best option; implementation; and lastly the evaluation. Throughout this cycle there are a series of stakeholders' consultations where stakeholders are given some opportunity at different stages to provide inputs to the process. Likewise, there are also various agents of change and resistance (policy drivers) who are driven by their motives and/or interests some of them are in conflict etc. This is a more complex phase of policy making process in Tanzania where domination of networks and actors' interests is common, and the role of research is gradually acknowledged.

Though still not adequate, during the second phase, the linkage between research and policy making process has evolved significantly and positively, largely due to changing socio-economic and political environment at both national and international levels (See also Mwakapugi 2010). The pace and type of partnership between research and policy making process in Tanzania is generally timid. Yet research is a pre-requisite to the policy process. Viable and appropriate policies are necessary for economic management as well as sustainable growth and poverty reduction. Systematic research should provide an important input in policy formulation. It might therefore be thought that the relationship between research and policy is straightforward, with good research designed to be relevant to policy, and its results delivered in an accessible form to policy-makers, and with good policy-making securely and rationally based on relevant research findings. In fact, this is far from practice.

## **1.2 Objectives**

The major objective of this project was to draw some research based evidence on the interaction between policy makers (through Ministries related to science) and their Research and Development (R&D) organizations including but not limited to research design and policy processes. The focus was on the following three variables:

- (a) Diversity of research personnel and conduct of research;
- (b) Mechanisms for interacting with policymakers and users;

- (c) Role of policy-makers and users in research initiation, implementation, monitoring and dissemination

Specifically, this study intended to investigate on the following research areas:

- (a) Examine the existing policy-research capacity and the relevance of research in policy decisions in relation to the policy-research nexus of each of these science-related Ministries and their research implementation organizations;
- (b) Determine the challenges and opportunities for research-policy linkages of each of these science-related Ministries and their research organizations and possible contributions to national competitiveness and economic growth; and
- (c) Suggest ways of strengthening the influence of research in the policy making processes of science-related Ministries in Tanzania.

The findings of this study will be presented in a national stakeholders' workshop to obtain their views. Afterwards, a revised report will be published as policy brief in collaboration with UNESCO - Dar es Salaam and disseminate the same to the key stakeholders in and outside Tanzania.

The study draws some evidence from the three science-oriented Ministries and their research organizations. The surveyed ministries were the Ministry of Communication, Science and Technology (MoCST), the Ministry of Industry, Trade and Marketing (MoITM) and the Ministry of Agriculture, Food Security and Cooperatives (MoAFC), while R&D organizations were the Commission for Science and Technology (COSTECH), Small-scale Industries Development Organization (SIDO), Mikocheni Agricultural Research Institute (MARI), Tanzania Industrial Research Development Organization (TIRDO), Centre for Agricultural Mechanization and Rural Technology (CAMATERC) and the Tanzania Engineering and Manufacturing Development Organization (TEMDO).

### **1.3 Rationale of the Study**

There is a prevailing concern in Africa that public policy making process is not adequately informed by and reflective of research based evidence (see for example Montez, 2010 and Mwakapugi, 2010). This is largely due to limited interface between researchers on one hand, and public policy makers in the government on the other. Following this disconnection, leaders of, as well as the policy making processes in African States including Tanzania have not been informed by research evidence thus affecting performance of the economy and subsequently livelihoods of the people.

Like other African countries, the linkage between research and policy process in Tanzania is limited. Policy formulation and implementation are not guided by research and therefore Monitoring and Evaluation (M&E) tools are not common instruments for

measuring project performance. Why it is that sometimes a policy isn't research based? Those who wonder how better use can be made of research in policy-making frequently raise this question. The answers as to why sometimes policy is not research-based fall under different camps (Rweyemamu, 2005). There are those who perceive research as not being useful to the real politic of office life; policy-makers are biased against using it; research is often not of good quality or is not accessible to policy-makers; and policy makers prefer to be led by ideology and pragmatism.

Moreover discrepancies of timing, low status of researchers compared to those they are trying to influence; and the different ways of viewing the world (values, language, interests etc) has been claimed to be among the reasons that make it obvious that sometimes research is not designed to be relevant to policy. Sometimes it might be so designed, but fails to have an impact because of problems associated with timeliness, presentation, or manner of communication. Sometimes (probably quite often) policy-makers do not see research findings as central to their decision-making. The relationship between research and policy is therefore sometimes tenuous, and quite often fraught.

This study therefore looks at the linkage between research and policy making process in Tanzania, focussing on dynamics and complexities of the policy processes in terms of understanding diversity of research personnel and conduct of research; mechanisms for interaction between research producers and policymakers and other research users; the role of policy-makers and users in research initiation, implementation, monitoring and dissemination.

#### **1.4 Structure of the Report**

This report has been divided into five chapters. After the introduction, the study methodology is presented in chapter two while chapter three presents the lessons from the existing literature. Chapter four presents discussion of the key findings, while chapter five draws the major conclusions and makes the recommendations of the study.

## **2 The Study Methodology**

### **2.1 The General approach;**

This was a multiple case study design which involved three key science oriented Ministries and their respective research organizations. A combination of both primary and secondary sources was used to collect data on the experience of Tanzania in the use of evidence based research in policy making processes. Primary data was collected through key informant interviews and roundtable discussions with relevant stakeholders within the surveyed ministries and research organizations, while secondary data was collected through literature review. The literature included annual reports, journals, internet search and other publications on research and policy interface.

### **2.2 The Study Area and Sampling Procedure:**

The headquarters of all the studied ministries are situated in Dar Es Salaam together with those research parastatals; with the exception of CARMATEC and TEMDO which are situated in Arusha. Thus, this study was mainly conducted in Dar-es-Salaam and Arusha regions.

As far as sampling procedure is concerned, the study adopted a purposive sampling following the requirements of a guided Terms of Reference (ToR) by the client. A total of three Ministries and six research organizations under the selected ministries were therefore consulted. The study therefore involved the Tanzania Ministry of Communication, Science and Technology (MoCST), the Ministry of Industry, Trade and Marketing (MoITM) and, the Ministry of Agriculture, Food Security and Cooperatives (MoAFC). As for the six research parastatals the study involved those institutions operating under the coordination of the mentioned Ministries. These include Commission for Science and Technology (COSTECH), the Small-scale Industries Development Organization (SIDO), Mikochoeni Agricultural Research Institute (MARI), Tanzania Industrial Research Development Organization (TIRDO), the Centre for Agricultural Mechanization and Rural Technology (CAMARTEC) and the Tanzania Engineering and Manufacturing Development Organization (TEMDO).

### **2.3 The Survey Instruments and Data Collection**

Data was collected using various tools for data capturing including a structured questionnaire, the Interview Guide (or Interview Checklist) and Focus Group Discussions (FGDs). The FGD interview guide was used for roundtable discussions with representatives from all the selected three Ministries and the six research Parastatals. In addition, a quantitative matrix was used to collect data on the number of research personnel and research outputs produced by these research Institutions.

The following approaches were used to collect data from the selected Ministries and their research Parastatals;

**Table 2.1: Details of the Approach used to Collect Data**

Sn	Tasks from the ToR	The Approach Used	Personnel Visited
1	Diversity of research personnel and conduct of research, Mechanisms for interacting with policymakers and users, Role of policymakers and users in research initiation, implementation, monitoring and dissemination	The researchers used a mixture of secondary and primary data capture methods. The use of Institution's annual or progress reports to capture the number of research personnel for the 6 R&D selected and the 3 Ministries were adopted. The researcher used guided interview checklist for FDG and individual interviews for policy makers and researchers from the three Ministries 6 R&D.	Permanent Secretary, Directors for Policy and Planning, Human Resources personnel, Research officers
2	Examine the existing policy-research capacity and the relevance of research in policy decisions in relation to the policy-research nexus of each of these science-related Ministries and their research/implementation Parastatals.	In-depth consultations with the 3 Ministries and their 6 research parastatals on the policy-research relationship was done. Information was obtained on how the research Institutions design research from the initial stages of research up to the level of implementation, monitoring and evaluation of research results. The capacity of researchers was also examined. In order to evaluate the relevance of research in policy decisions, the researchers interviewed policy makers to know the power of research based evidence in policy decisions and whether they use their research house in policy processes.	Permanent Secretary, Directors for Policy and Planning, Human Resources personnel, Research officers
3	Determine the challenges and opportunities for research-policy linkages of each of these science-related Ministries and their research parastatals and possible contributions to national competitiveness and economic growth	In order to determine the challenges and opportunities for research-policy linkages of each of these science-related Ministries and their research Parastatals, the researchers adopted the consultation method of visiting each of these three selected Ministries and their Parastatals through the use of structured questionnaire/individual interviews. Therefore the management of these Institutions were consulted by the researchers in order to learn various opportunities for filling the gap between research and policy as well as learning if there are challenges in linking up research with policies. Where research has been used in policy decision, the researchers examined its possible contributions to national competitiveness and economic	Permanent Secretary, Directors for Policy and Planning, Human Resources personnel, Research officers



		growth through consultation and reading various national reports and those reports from the three mentioned Institutions	
4	Suggest ways of strengthening the influence of research in the policy making processes of science-related Ministries in Tanzania	Based on consultation with officials from the selected three Ministries and their Parastatals and based on the findings from secondary data sources, the researchers were able to suggest ways of strengthening the influence of research in the policy making processes of science-related Ministries in Tanzania.	Permanent Secretary, Directors for Policy and Planning, Human Resources personnel, Research officers

## 2.4 Data Analysis:

Data collected was analyzed qualitatively and quantitatively. The researchers used MS excel to analyze the number of researchers in the selected institutions and determine capacity of the organizations in undertaking research. Qualitative analysis was used to examine the relationship between research organizations and their related ministries, challenges and opportunities in research and policy interface.

The analysis was meant to find answers to all the questions related to the diversity of research personnel and conduct of research; mechanisms for interacting with policymakers and other research users; and the role of policy-makers and users in research initiation, implementation, monitoring and dissemination.

## 3 Lessons from Existing Literature

### 3.1 The Concept of Policy and Stages of Policy Cycle:

Policy is complex and dynamic, and the term embraces a range of different aspects according to Wolmer *et al* (2005). A number of scholars observe that “defining policy is rather like the elephant – you know it when you see it but you cannot easily define it” (Cunningham, 1963, cited in Wolmer *et al* 2005). Other commentators point out to the fact that policy is not at all a matter of the rational implementation of the so-called decisions through selected strategies (Clay and Schaffer 1984, cited in Wolmer *et al* 2005) but rather a chaos of purposes and accidents. The term policy is defined by different scholars differently. Keeley (2001) for example observes that, “policy comprises decisions taken by those with responsibility for a given policy area, and these decisions usually take the form of statements or formal positions on an issue, which are then executed by the bureaucracy”. Policy refers to “the allocation of values and resources - politics” or “whatever governments choose to do or not to do” (Dye, 1984 in Wolmer *et al* 2005). A very general definition states that, policy is a purposive course of action followed by an actor or set of actors” (ODI, RAPID website, in Wolmer *et al* 2005)

The conventional view envisages a series of stages - from agenda setting, through policy formulation to implementation and evaluation. This model of policy making process views it as a linear process in which rational decisions by those with authority and responsibility for a particular policy area are taken. This approach views policy making as involving a number of stages that lead to a decision (Wolmer *et al* 2005). These stages are:

- Understanding the policy issue or problem [agenda setting];
- Exploring possible options for resolving the problem;
- Weighing up the costs and benefits of each; and
- Making a rational choice about the best option [decision-making].
- Implementing the policy

- Possibly evaluating outcome

### **3.2 Analysis of the Policy Process**

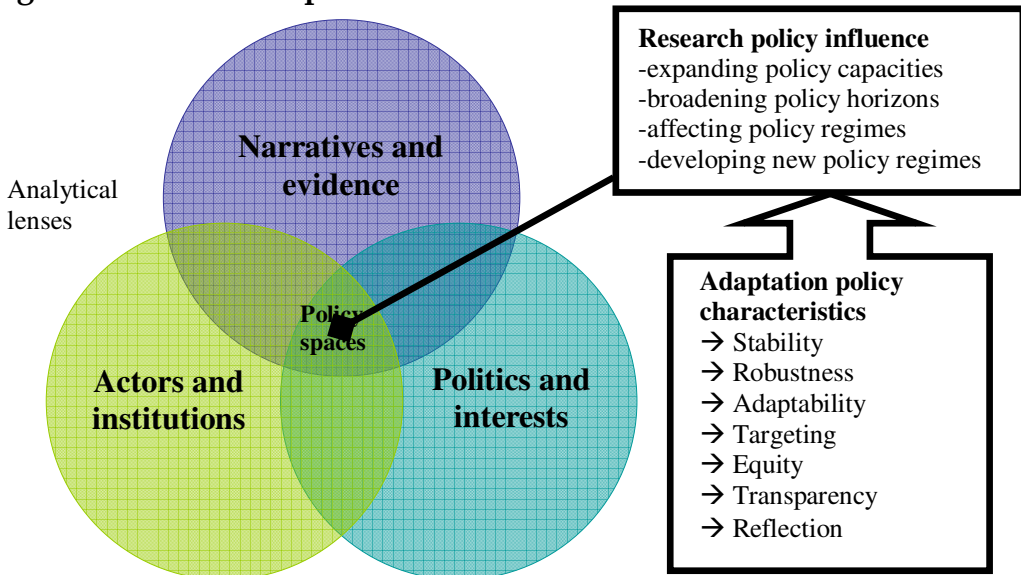
Analysis of the policy processes has been made based on the Knowledge, Technology and Society (KNOTS) analytical approach which focuses on three different but overlapping lenses namely, Actors and Institutions (or Networks); Politics and Interests; and Narratives and Discourses (or Evidence)<sup>1</sup>. The first lens i.e. *Actors and Institutions (or Networks)* is focusing on networks, organizations, norms (or rules), influential individuals and champions involved, formally and informally, and how they interact and subsequently shape the process of making policies in the country.

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<sup>1</sup> The Knowledge, Technology and Society (KNOTS) were developed by a research team at the Institute of Development Studies (IDS), University of Sussex. See also Figure 3.1

*Politics and Interests* focuses on the power dynamics, incentives and motives of various actors and institutions towards policy, and what causes some policy agenda to stick in people’s minds and be accepted. The intersection of the three lenses generates policy spaces. Policy spaces may be identified through each of the three lenses, shown in the centre of the three lenses in Figure 3.1. Policy spaces are defined by Gaventa (2006) as opportunities, moments and channels where citizens can act to potentially affect policies, discourses and decisions and relationships that affect their lives and interests.

**Figure 3.1: A Conceptual Framework**



Source: IDS (2006)

There are a number of policy spaces including; *popular spaces* used for awareness creation through public meetings, demonstrations among others, *invited space* where researchers or policy actors are invited to present their ideas to interested and influential group, *political spaces* these which include the parliament, *practical spaces* such as the Farm Field Schools in agriculture used for demonstration and learning purposes and finally *bureaucratic spaces* which is a way actors interact with the government and agencies through seeking appointments and getting audience with civil servants. Others include *conceptual spaces* which are academic fora mainly and *discursive spaces* where new ideas and framings are introduced into debate, and circulated through various media. Identifying these policy spaces is crucial in targeting appropriate stakeholders/actors for the issue at hand.

Note that, the policymaking process can be referred to as a succession of bargains among political actors, interacting in formal and informal forums. In other words, these are outcomes of complex exchanges among political actors over time. Thus, this lens captures individual politicians who have the consent through politics to influence and change policies. While *Narratives and Discourses (or Evidence)* look at how research and policy narratives are constructed, perpetuated, communicated and associated with the policy process.

This analytical approach or framework aims to uncover where the historic and future drivers of policy change and policy spaces that influence policy Tanzania are located. The framework is a selection of prompts to ask useful questions of policy rather than a comprehensive and complete map. It allows an emphasis on the relevant spheres where needed to adapt specific contexts. Thus, understanding policy processes through an examination of actors and institutions; politics and interest; and narratives and discourses; is an entry-point for identifying policy spaces.

The policy-making process has to be taken as a complicated political process as much as an analytical or problem solving one. It is a result of a complex interplay of narratives/discourses underpinning the policy, the actor networks promoting or resisting it and political interests driving the process. Thus, policy change requires understanding of this process, and exploring spaces for opening up debate and exerting influence. Policy-making is bureaucratic, incremental, complex and a messy process. It is iterative, and is often based on experimentation, learning from mistakes, and taking corrective measures. Hence, there is no single optimal policy decision or outcome. Policy process addresses a series of questions as follows:

- How do policies get created, by whom?
- How do ideas about what makes a 'good' policy evolve and change?
- Whose voices and views are taken into account in the policy process?
- How are boundaries drawn around problems and policy storylines elaborated?

There are always overlapping and competing agendas – there may not be complete agreement among stakeholders over what the really important policy problem is. The analysis of policy process reveals a dynamic two-way relationship or process between research and policy, shaped by the contexts of politics, institutions and actors, and by the narratives, evidence and interests (See for example IDS 2006 and Mashindano 2010). This framework of analysis emphasizes the fact that policy process does not only mean the mechanics of decision making and its implementation, and it is not necessarily linear. It is in many cases a non linear process and as mentioned earlier, it is better described as complex and messy process, involving actors with diversified preferences (tastes) and many times with competing goals and interests.

### 3.3 Policy Process in Tanzania

As noted earlier, in Tanzania the complex policy processes have tended to dominate where institutions, actors' interests, power dynamics (politics), networks, narratives etc, have been the important drivers of policy process in all the major stages of policy cycle. Researchers need to use the three lenses of the conceptual framework sufficiently in influencing the policy process in Tanzania. For many times, the approaches or communication strategies used by members of the research industry are lacking an in-depth analysis and understanding of the policy process. Analysis of the policy process using the three lenses is paramount to researchers because of the dominant influence of networks, actors' interests, politics (power dynamics), institutions, narratives and evidence. The recent demand by the public through CSOs to change the approach of the constitutional debate is one of the testimonies.

There are a chain of influential actors and institutions which are associated with the Tanzanian policy process. They range from government such as the Vice President's Office, and Ministry of Finance (MoF); Government Departments (or Organizations) such as the National Institute for Medical Research (NIMR), COSTECH, TIRDO, MARI, and Tanzania Meteorological Authority (TMA). In addition, there are politicians and individuals who are also champions within the policy landscape. The Parliament; Both local and international CSOs; Research Institutions such as the Economic and Social Research Foundation (ESRF), Research on Poverty Alleviation (REPOA) and Economic Research Bureau (ERB); Academia such University of Dar-es-Salaam (UDSM), Sokoine University of Agriculture (SUA) and Mzumbe University; Media; International Organizations such as WHO, IDRC, and DfID; Charity Organizations; etc also play a significant role in determining direction and course of relevant policy processes in the country. Actors and institutions tend to possess converging or diverging (or conflicting) interests, preferences, and tastes which subsequently affect their influences on policy. Opportunities to link with policy makers in Tanzania are available, but researchers' engagement with policy makers requires strategic approach.

On the other hand, these are decision makers and policy drivers in the country. As noted, they include senior and top government and political executives. They include technical people who are sometimes not easy to contact. There is therefore a great need to understand them in terms of their behaviour, attitude, and preferences. There is a need to know *a priori* where they are likely to support and where they are not likely to support before drawing strategies to impress upon them. This group is generally apprehensive and resistant to change. A formal policy adoption is therefore a slow process. They fear and would rarely trust any change because they can not be sure if the changes are meant to target the existing regime (power) and therefore endanger their positions or not.

They can easily support recommendations which take in to account their interests including the interest of their voters, than otherwise. These are the interests which navigators such as the PAR researchers need to understand and/or be aware of to enable them make strategic communication approach. Parliamentarians are members of the parliament or legislature which is the highest law making body in the country. This is the final body to pass all proposed bills which are tabled during the National Assembly. Members of Parliament are basically politicians with strong policy influence. They have the tendency to protect their interest, the interest of their political parties as well as interests of their voters in their respective constituencies. The strategies by researchers to make use of this category of policy actors (decision makers) need to consider their interests and preferences.

### **3.4 Conclusion**

The co-existence between research and policy making in Tanzania must continue, since research is key in economic growth and national development. The pressure has been great on research and policy analysis institutions to treat their outputs as direct inputs to the policy process. In this perspective, the input-output relationship is considered deterministic and hence measurable at any point in time. In this scenario, it is the persistence of the generation of policy inputs that are directed to specific policy concerns that would be important in assessing whether or not research is influencing policy.

The different types of research and different aspects of the policy-making process to which they are aimed leads to research products of varying quality, style and policy relevance. Research brokers and policy entrepreneurs are essential to the communication of research into policy domains. The policy impact of research continues to be constrained by many factors (including political factors such as censorship, political disinterest, an intolerant political culture, or a lack of public support for research). Different strategies for communication/research dissemination are required to meet the needs of different research consumers in government, (including politicians, senior bureaucrats and implementers). Researchers must analyze the policy process and understand policy actors, actors' interests, power dynamics, institutions, narratives and policy spaces, as well as pay attention to research demand from policy-makers, and research needs to be presented in an easily digestible format. Policy-makers need research to help make decisions but also to support policy positions. Internal incentive structures are needed for politicians, bureaucrats and organizations to effectively absorb and utilize research or interact with researchers.

## 4 Discussion of the Research Findings

This chapter presents findings of the study based on the interviews done with surveyed Ministries and the research organizations mentioned earlier. Discussion of the study findings is mainly focusing on the four main themes namely; the instituted mandates, objectives and roles of the interviewed ministries and research institutions; research – policy linkages under which the nature and level of interaction between policy makers and researchers is presented. In addition policy /research capacity where issues of resource capacity, the quality of research outputs that can effectively inform policies and the relevancy of research in policy decisions are presented. The last theme presented is the prevailing challenges and opportunities within the research-policy framework in Tanzania.

### 4.1 Mandates of the Surveyed Institutions:

The interviewed ministries indicated that they are mandated to formulate, review and implement policies and legislations, and make other key decisions on behalf of the government. The MoITM for instance, which is mandated to facilitate the development of sustainable industry and trade sector through creation of enabling environment and provision of improved services, is responsible for formulating, reviewing and analyzing policies related to Trade, Industries and Marketing; the MoAFC for agricultural development and that of MoCST is to formulate, review and analyze policy related to communication, science and technology in Tanzania. In addition, these ministries are involved in formulating development strategies and coordinate the Monitoring and Evaluation (M&E) tools. They are also expected to foresee the overall development of the country in their respective areas such as agriculture for the MoAFC; industrial and trade development for the MoITM and the science and technology for the MoCST. Conventionally, after every three years policies are subjected to reviews following changes taking place within the country and at global level. The results from M&E has always been the criteria used to review policies. Other reasons for policy review are said to include new challenges, achievement of the set goals and targets, and when there is implementation failure.

On the other hand, the interviewed R&D organizations i.e. MARI, SIDO, CAMARTEC, TEMDO, TIRDO and COSTECH are also mandated to formulate corporate policies and strategic plans at institutional level. They also make key decisions at corporate level. For example MARI, which is one of the governmental research organizations under the MoAFC is mandated to facilitate the development of sustainable industry and trade sectors through creation of enabling environment and provision of improved services to invent new seed breeds and improve varieties of coconuts national wide. It is also mandated to improve the farming systems of coconuts along the country's Coastal Belt. MARI is also involved in introduction and development of biotechnology in Tanzania.



CAMARTEC, TEMDO and TIRDO which works under the MoITM are mandated to support the government in improving its economy through provision of rural and industrial technologies necessary for agricultural mechanization and industrial development. CAMARTEC established under the Parliament Act No.19 of 1981, is mandated to support the country's industrial and agricultural development through conducting technology-related applied research with the intention of improving both agricultural and rural technologies. It also deals with designing technologies that are suitable to Tanzanian contextual environment. Finally while TEMDO which was established through Parliament Act No.23 of 1980, is mandated to design, develop and promote commercial manufacturing and use of machinery and equipments for agro-processing industries in Tanzania; TIRDO was developed to promote industrial development through applied research heading to the evolution and development of local materials to be used in industrial process within the country. Its focus is to conduct research into local and foreign industrial techniques and technologies for adoption and use in industrial production.

#### **4.2 Research - Policy Linkage**

According to the surveyed Ministries and research organizations, the policy process in Tanzania is participatory. It involves the government departments and agencies, private sector, Civil Society Organizations (CSOs), and other Non State Actor (NSAs) including academics and researchers. The policy process in Tanzania has strategically gone through changes to allow for NSAs participation in all aspects of creating conducive environment for macroeconomic stability and therefore development policies in the country. These aspects include policy formulation, implementation, monitoring and evaluation. For example, the initial steps to involve CSOs in policy dialogues began in the mid-1980s when the government started to relax the suppression of civil society. However, major changes began in mid 1990s when the civil society including research and academic institutions, was for the first time recognized as the major stakeholders in policy process in Tanzania. Since then CSOs has actively participated in different national policy frameworks and/or processes such as the National Vision 2025; the Zanzibar Vision 2020; the National Strategy for Growth and Reduction of Poverty (NSGRP/MKUKUTA - both I and II). This is one form of collaboration between research organizations and ministries (policy makers) in Tanzania, where research outputs have been informing the policy process.

The three surveyed Ministries work closely with different research organizations in the country. The extent of interaction differs from one organization to another depending on the needs of the policy making bodies and strength of the respective research organizations, among other factors. For example, it was reported during the FDG at the MoITM that most of the policy formulation and policy review are informed by background research reports and stakeholders' consultation before it is taken further for approval and become a policy. The recent 2008 Agricultural Marketing Policy (AMP)

and Agricultural Marketing Strategy were mentioned as examples of the policy frameworks which have not only been informed by the background research reports (See URT 2004 - Agricultural Marketing Policy: Sector Position Paper), but also have gone through an intensive stakeholders' consultation process. Likewise, the Private Sector Development Strategy (PSDS) was developed after a comprehensive research work (See URT 2006 - Private Sector Development Strategy (PSDS): A Diagnostic Study). Also important to mention is the formulation of 2010 National Biotechnology Policy and 2010 National Research and Development Policy which were also informed by a commissioned background research reports before submitting it to higher authorities for final approval. Thus, to a larger extent key decision making and policy process are informed by research evidence. This is done through commissioning research institutions to work on the research problem identified by Ministries (a demand driven research).

Evidence also shows that the Ministries work with many major R and D organizations namely, CARMATEC, TEMDO and TIRDO who link with SIDO for commercialization of their new products or technologies. Other research organizations working closely with especially MoCST are Tanzania Atomic Energy Commission, Dar es Salaam Institute of Technology (DIT), and Higher Learning Universities such as University of Dar-es-Salaam (UDSM), Sokoine University of Agriculture (SUA), Mzumbe University and Ardhi University. Other coordinating agents for the Ministry are Tanzania Communication Regulatory Authority (TCRA) and the commission on ICT (which is in the process of being created).

As far as the level of interaction is concerned, all the surveyed ministries and research institutions admitted to interact very often. These institutions interact through the Ministry's funding process i.e. the research organizations do receive funds from their respective Ministries for example CAMARTEC, TEMDO and TIRDO gets their funding from the MoITM. Furthermore the research organizations are monitored and evaluated by their respective ministries where they are obliged to report to. Through this the ministries are expected to know what is going on with the research organizations and therefore support them in marketing and disseminating research products. SIDO for example has signed Memorandum of Understand (MoU) with the MoITM which requires SIDO to work on product commercialization for all the research organizations.

COSTECH advise the government on the use of research in policy decision making under its directorate of Research, Co-ordination and Promotion. Policies and all decisions have to be done based on scientific research. This directorate appraises R&D activities undertaken by R&D Institutions. It also works as a national research registry and also does documentation of research and development activities by affiliated institutions. This is another form of collaboration between the Ministry (policy makers) and a research organization. Therefore, most of the researches are done by the R&D

Institutions but funded and coordinated by COSTECH through its directorate of research.

The above interaction takes place through various modes including sharing research findings via publishable reports, dissemination workshops and meetings where research findings are finally shared with the Ministries. The interaction is further extended in monitoring aspects where representatives from both levels are involved in different boards and committees in both the Ministries and research organizations. However, there is still lack of proper communication of research findings to decision makers at the Ministry because the funds available does not allow for preparation of dissemination tools.

### **4.3 Policy research capacity and research relevance:**

#### **4.3.1 Diversity of research personnel,**

The surveyed ministries mainly play a coordination role rather than undertaking their own research programmes. The Ministries have research departments which are supposed to develop research concepts and implement them. However these Units have failed to do so due to various challenges including lack of capacity for the in-house staff to undertake research. Most of research done within these Ministries is therefore commissioned to external consultants including the research parastatals while little is done by research units/departments within the Ministries. Both, the Ministries and research organizations are facing a challenge of retaining good research staff.

Unlike the surveyed ministries, the six research Parastatals consulted by the researchers reported to have a good number of research personnel capable of conducting evidence-based research that can be used to influence various decisions as well as policy making processes to their line ministries. Research personnel in these organizations have various professions depending on the nature of their Institutions. From the data obtained from them the number of research professionals within various areas is adequate compared to those found in the research units/departments within the ministries. For instance CAMARTEC, TEMDO, TIRDO to mention the few reported to have adequate qualified researchers who are very competent and experienced in the field.

As far as gender diversity is concerned, in all the visited organizations there is a gender imbalance in terms of researchers. There are very few female compared to male researchers. In some other Institutions, females are concentrated in support services only like clerical, secretarial and none in research. This was a case for TEMDO which currently has currently 14 research staff but all of them are males with masters and bachelor degrees in mechanical engineering, chemical engineering, chemical and process and electromechanical professions. At the CAMARTEC, where there are 16

researchers with 1 PhD holder, 5 Masters Holders and the remaining 10 bachelor degree holders. Of the total research staff, only 2 are females. The researchers have backgrounds in mechanical and agricultural engineering, renewable energy, information technology, education and social sciences.

In COSTECH, there is a mixture of both males and female researchers but of course the number of males dominate since out of the total 28 researchers, only 5 are females with one female PhD holder out of ten PhD holders at the commission. The diversity of research personnel varies from PhD, Masters and bachelor degrees with various disciplines while majority have background in hard sciences. However unlike the other research organizations, the gender composition of researchers at MARI consists of a good number of female researchers. Out of the total 33 researchers, 13 are females researchers with different level of education from PhD, Masters, bachelor and diploma holders. Due to the nature of research undertaken by MARI, nearly 30% of its researchers have background in biotechnology. Others have background in agronomy, socio-economics, breeding, entomology, pathology, extension, food technology and weed science.

#### **4.3.2 Financial resources**

In all the six surveyed research Parastatals, funding for research comes from their line ministries. Unfortunately the amount is minimal to the extent that it is not adequate for their research undertaking. As a result, research personnel are underutilized because not much research is being done. It all depends on the sharpness of these research Parastatals to attract consultancies and to apply for both o local and international competitive research grants in order to actively conduct comprehensive research that can yield relevant impacts in the national development. The government in 2008 promised to provide 1% of GDP to R&D but to date, only 0.04% has been disbursed through COSTECH where these research organizations are supposed to apply.

According to most of the research parastatals visited, government funding allocated by their respective ministries is not being provided on time and sometimes not getting anything at all. This situation tend to affect their performance in terms of implementing their annual workplans and research projects planned for the year. This situation therefore causes these organizations to use the funding to cover administrative expenses such as salary expenses, stationery and other running costs instead of financing research activities as intended. Therefore institutions like TEMDO, CARMATEC and TIRDO admitted to face this problem and therefore depend on collaboration with private sector/industries for research funding. For instance CARMATEC get some research funding from importers of international technology who can not apply their technology without testing and approval from CARMATEC.

### 4.3.3 The Quality of Research outputs:

It is expected that research organization or institution should have the capacity to produce research output that can be useful to the government and other research users such as industries, academia, media and NGOs, especially in informing decisions. According to the surveyed research institutions, their research output includes prototypes, technical research reports, chapters in a book, and publications from the referred journals. However, the trend in production of these research output in many research organization is not promising since they are not able to produce many research reports or publications due to limited financial and human resources. The analysis of the sampled six research Parastatals also show that very few number of prototypes are produced and no patents and few publications are done as seen from the table below.

**Table 4.1: Output for some research parastatals**

Number Outputs	2009/10 (MARI)	2010/2011 (TEMDO)	2010/2011 (CARMATEC)
Prototypes	0	3	2
Patents	0	-	-
Publications in referred journals	8	-	-
Books	1	-	1
Chapters of Books	1	-	-
Articles in proceedings	11	1	3
Research reports	0	-	-
Other Publications (proceedings etc)	0	1	-
Technical reports (annual)	1	2	4
Types of services to the community of economic importance	0	1	1
Type(s) of infrastructure and numbers - GE lab	0	-	-
New breeds/varieties	0	-	-
Others (please specify) - Development of RNAi Constructs	0	-	-

*Source: Data collected from MARI, TEMDO and CAMARTEC; 2011.*

### 4.3.4 Relevance of research in policy decisions:

The importance and relevance of research in policy decisions is fundamental. All the three science related ministries acknowledge the importance of research in making policy decisions. The same was pin pointed by the surveyed research parastatals which admitted that information derived from conducted researches is very important in informing and influencing policies that can be effective for the national development and therefore recommend the government of Tanzania through its various ministries responsible for policy making to use research evidence when formulating policies. However, evidence shows that though many researches are done still a lot of good

research results are not well communicated to policy makers instead they remain kept in shelves therefore not reaching or used by the policy makers for influencing policies and that is why a number of policies in the country do not yield the expected results. This suggests poor interaction that researchers have with policy makers. In some cases however, research agenda is not aligning to the policy need and therefore even if the research results are good, still policy makers don't find them relevant in decision making.

#### **4.4 Opportunities and Challenge**

##### **4.4.1 Opportunities for research and policy interface**

In Tanzania, still there are many opportunities that can be tapped to improve on research and policy interface. Currently we have the National Research and Development Policy (NRDP) of 2010 which recognize the importance of research in policy decisions. The policy insists on R&D institutions to provide input to the government in policy processes. It also provide room for the R&D institutions to have strong network that can link them together to have a voice in research. It also highlights that the government should provide enough funding for R&D.

On the other hand, the government pledged to raise public investment in Research & Development from the current 0.3% to 1% of its GDP during the 2009/2010 financial year. This is an opportunity for R&D institutions to utilize this funding for undertaking more research that can be relevant to policy makers in making developmental decisions and policy reviews.

Despite the shortfall in the Tanzanian government funding for R&D, the government's recognition of the need for an increased R&D budget is indeed an important step sustainable R&D activities in the country. If the 1% of the GDP target is achieved it will certainly decrease the level of dependency on (limited) international funds and subsequently promote ownership of R&D at national level.

##### **4.4.2 Challenges facing Research - Policy Interface:**

Despite the fact that research - policy linkage has been recognized as important in the development of any nation, its realization has been difficult in many of developing countries including Tanzania. The surveyed ministries and research organizations recognizes that effective policies are the ones informed by research-based information hence desires to strengthen that linkage in order to bring development in the country. However as it has been revealed in the findings, currently such linkage is missing in Tanzania as there is a very little use of research in policy processes. This situation has been contributed by a number of challenges that hinders the ability of both ministries (as policy makers) and their respective research organizations to be linked so that the

latter informs the former and vice versa. Among the challenges threatening the research-policy linkage include;

*(a) Poor Quality of research findings that are capable of informing policies:*

This has been contributed by the inability of research directorates/parastatals established under ministries to conduct big and viable research relating to the country's development. As it is known that ministries are mandated to coordinate and research through their respective research departments/directorates so as to be able to link the two. The assumption was that these research units will be able to conduct research projects and inform the ministries with their research findings for the policy processes. However, for a long time, the role of these ministries have remained to be that of coordination rather than combination of coordination and conduct their own research programmes and hence commissioning most of their researches to external consultants. This is because the research departments have been unable to develop and implement research concepts due to a number of challenges including lack of resources.

Majority of research parastatals are faced with resources shortage of resources such as funds and qualified research personnel. Majority of government research parastatals in Tanzania has been faced with limited funds and qualified research personnel to allow the conduct of many and big researches to influence sectoral or national development. The small amount allocated to them from the ministerial budget share and few research experts hinders them from concentrating on big and long term research projects instead of the small and short term ones. This jeopardizes both the quality and relevance of research outputs hence poor utilization of research in Tanzania.

Most existing policies in Tanzania are too old (more than 10 years without review), mainly due to limited resources for both implementation of the policy as well as financing the review process. For example the National Trade Policy which was approved in 2003, despite a number of changes at the national, regional and global levels which challenges the effectiveness of the current policy, the MoITM has not been able to review it in order to accommodate these challenges. For example, when the policy was formulated in 2003, the revamped East African Community (EAC) was still at infancy stage and since then a number of trade protocols such as the Customs Union and Free Trade Area (FTA) have been formulated and approved and therefore there are subsequently many areas in trade policy which needs to be adjusted. This has not been done due to resource limitation. Again many research findings in Tanzania have many times been very appealing. This is particularly true for scientific research (hard science). However, the findings are not disseminated and used to bring impact to the society because of limited resources.

(b) *Political interference and Lack of the National Research Reference Bureau*

Political interference is another challenge facing the research industry in Tanzania. In most cases political interests override economic and social interests, and therefore research findings which seems to contradict political interest do not be considered when formulating particular policy even if they are been channeled to reach the policy makers. Note that political interference is a serious problem in Tanzania which happens frequently according to most of the respondents at the MoITM; CAMARTEC and MARI. For example, according to the MoITM, Tanzania has just launched the Custom Union and intends to do more along lines of EAC integration. However, research findings show that it is not feasible to commence EAC Common Market or EAC Monetary Union – but the government has not given this voice the attention it deserves.

(c) *Lack of Good Governance:*

Good governance has been earmarked as one of the important ingredient towards national development. It is among the factors influencing policy formulation process as well as implementation in Tanzania. However, corruption which falls under good governance is said to be one of the major factors for the delay in policy review, changes as well as implementation. For a long time now, it has been one of the reasons why people work towards serving their private interests rather than the public interests hence one of the factors hindering uptake of research findings and recommendations by policy makers.

(c) *Demand Versus Supply Driven Research:*

Findings from this study reveals that most of the research projects done by the surveyed research organizations are not demand driven. This is the reflection of majority of researches conducted within the country and many of them are not necessarily relevant. This situation result into a big chunk of research findings being shelved and not accessed by the users possibly because they don't address the pertinent and priority problems of the people of Tanzania.

(d) *International Conventions*

Tanzania has ratified too many International Conventions which are mainly formulated and better known by the Developed World. Tanzania becomes rather poorly informed because it doesn't make a thorough analysis before making the decision. The government needs to look at the conventions and customize them before ratification. This is said to be among the key decisions which are not based on research evidence.



*(f) Other Challenges*

Researches done in Tanzania mostly depend on donors and therefore donor driven which sometimes does not link to the relevant national development agenda. This has been the case to the most research done in the country hence they just serve the short term purpose which have very little impact to the national development. In addition, Tanzania still lacks researchers in hard science. This is important bearing in mind the fact that the country is now moving towards nuclear technology.

Also important to mention is the fact that Tanzania does not have a Research Reference Bureau where one can visit and access all the research information. This constraint makes it difficult to improve research-policy linkage. Lack of an umbrella organization that brings together scientists or researchers makes it difficult to link policy makers and researchers in the country. This shortcoming is also highlighted in the current National Research and Development Policy of 2010. As compared to other developed countries, we still lack strong R&D in various disciplines such as “the army”, tourism sector, roads, international/foreign relations.

## **5 Conclusions and Recommendations**

The analysis and discussions in the preceding chapters have demonstrated the need to promote co-existence between research and policy making process in Tanzania, because research is key to policy making process, economic growth and subsequently the national development. To a larger extent this framework does not work appropriately in the country for various reasons and/or challenges facing the research industry and the country at large. These challenges include underfunding of research industry, political interference, domination of supply driven to demand driven researches, too many International Conventions most of which are irrelevant, poor quality and irrelevance of most research outputs.

The interactions between Ministries and research organizations show clearly that, Ministries acknowledge the role and importance of research organizations in the country. However, while the Ministries’ demand for research services is high, the research services rendered by research organizations do not meet the prevailing demands. This is particularly because research institutions as well as the Ministries do not have the desired capacity in terms of resources and expertise. There is therefore a need to scale up the capacity of these institutions namely Ministries as well as research organizations in Tanzania if research-policy linkage is to make a tangible impact. Though not adequate, a one percent of GDP pledged by the government recently is a big step forward. However, more funds need to be sourced to finance research institutions in the country. This will ensure that research institutions in Tanzania is well facilitated to contribute in developing big and long term competitive research projects to ensure sustainable social and economic development in the country. Capacity

building of the research institutions and Ministries should include training and sensitization of existing staff especially within the decision making bodies to enable top government executives appreciate efforts by research institutions.

The KNOT analytical framework presented earlier is clear and informative. It has been effective in some areas around the world such as Kenya and Malawi. Researchers need to adopt the KNOT analysis which helps to make the necessary analysis of the policy process and understand the three lenses namely, actors and institutions; politics and interests; narratives and evidence which enables identification of the policy spaces to be used by researchers as entry points in informing the policy process. Researchers must therefore analyze the policy process and understand policy actors, actors' interests, power dynamics, institutions, narratives and policy spaces, as well as pay attention to research demand from policy-makers, and research needs to be presented in an easily digestible format. Policy-makers need research to help make decisions but also to support policy positions. Internal incentive structures are needed for politicians, bureaucrats and organizations to effectively absorb and utilize research or interact with researchers.

Key policy actors are key decision makers and policy drivers in the country. Another guiding principle of a policy engagement plan will therefore be mapping and understanding of the policy landscape where all key policy actors and institutions are identified and their tastes, preferences are well understood. Among others, understanding the policy process will make it possible to know the complexity, of the process, while mapping of key policy actors and institutions will make it possible to know who is supportive to the research agenda and who is not.

Other pre-requisites for improving research-policy linkage is to ensure fulfilment of the following:

(a) *Packaging of Research Results*

Research products are sometimes not accessible to policy-makers due to wrong packaging of the findings. There is a need of using simplified approaches to disseminate the research findings in order to facilitate the understanding of the messages.

(b) *Evidence and Practicability of Research Results*

Policy makers prefer to be led by ideology and pragmatism (practicality, common sense, facts, evidence etc).

(c) *Problem Oriented Research*

Research is a purposive action by authorities which is meant to address existing problems. A problem must exist for research initiatives to be appreciated. Since there exist variation of problems in the society, prioritization becomes necessary and critical. Thus, it is important that the research agenda addresses priorities in the society. Timing

of research delivery does also matter to attract the attention of the senior and top policy driving executives.

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## ANNEXES

### ANNEX 1: Survey Instruments

#### RESEARCH-POLICY LINKAGES OF SCIENCE-RELATED MINISTRIES AND THEIR RESEARCH PARASTATALS

#### INTERVIEW GUIDE FOR MINISTRIES

#### INTRODUCTION

The Economic and Social Research Foundation (ESRF) in partnership with the United Nations Educational, Scientific and Cultural Organization (UNESCO) are doing a research study on the Policy and Research interface titled *Research-policy linkages of Science-related Ministries and their research parastatals*". This project falls within Joint Programme One, 'Wealth Creation, Employment and Economic Empowerment' specifically the component dealing with, "Policy Dialogues and Advice with Stakeholders including Women Associations and Professional Groups'.

The major objective of this project is to draw some research based evidence on the interaction between policy makers (through Ministries related to science) and their research parastatals including but not limited to research design and policy processes. The assignment is expected to draw some evidence from the three science-oriented Ministries and their research Parastatals namely the Tanzania Ministry of Communication, Science & Technology and COSTECH, the Ministry of Industry, Trade and Marketing and SIDO, and the Ministry of Agriculture and Food Security and Mikochei Agricultural Research Institute (MARI). You are kindly requested to provide support to our researchers (see table below) during their visit for an interview.

We wish to assure that the data you will provide will be treated with very high standard of confidentiality. Should you have any queries, please do not hesitate to contact the persons mentioned below.

Name	Phone number	Institution	E-Mail
Dr. Oswald Mashindano	Office number 022 2760751	Economic and Social Research Foundation	omashindano@esrf.or.tz
Ms. Vivian Kazi	Office number 022 2760751 / 0784 900908	Economic and Social Research Foundation	vkazi@esrf.or.tz

Ms. Dora Semkwiji	Office number 022 2760751 / 0787 123123	Economic and Social Research Foundation	dsemkwiji@esrf.or.tz
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### Official Contact Information

Full Name of the Ministry:	
P.O Box:	Tel:
Fax:	

### Details of the person completing this survey

Name		Tel:	
Designation			
Signature		Mobile:	
Date:		Email	

### Interview Guide

#### **A. GENERAL QUESTIONS ON POLICY AND RESEARCH LINKAGE**

1. What is Ministry's objective, mandate, and roles ?
2. Does the Ministry have a research department/unit? If yes, what is the diversity of research personnel in-terms of their profession and number?
3. How do you conduct your research i.e. stages involved in research undertaking
4. How do you set your research agenda? Who do you involve?
5. In the last 10 years, have you reviewed or formulate any policy in the Ministry? If yes, please mention the reviewed/formulated policy.
6. Do you work with other institutions when reviewing/formulating policies? If yes, please mention them.
7. If No, please explain.....
8. Is there any interactions between your Ministry and research parastatals under this Ministry? If yes explain how
9. What is the mode of your interaction? The mechanisms used to interact.
10. In your view, what roles do the policy-makers have in research initiation, implementation, monitoring and dissemination in Tanzania?
11. How do you see the relationship between researchers and policy makers
12. How do you see the capacity of researchers in undertaking research ?

13. How do you see the capacity of researchers in communicating research results to policy makers?
14. How do you see the capacity of policy makers in using research results?
15. Do you see any relevance of research in policy decisions? Please explain
16. What do you think are the challenges for research-policy linkages in Tanzania?
17. Is there any opportunity for research-policy linkages in Tanzania? Please explain
18. What do you think are the possible contributions of research to national competitiveness and national economic growth?
19. Please suggest ways of strengthening the influence of research in the policy making process in Tanzania.

**Any other relevant information**

This instrument might have not captured all the relevant information. Please feel free to provide any other information that may be useful in this study.

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**Thank you very much for the time and effort you committed in completing this survey.**

# **RESEARCH–POLICY LINKAGES OF SCIENCE-RELATED MINISTRIES AND THEIR RESEARCH PARASTATALS**

## **INTERVIEW GUIDE FOR RESEARCH PARASTATALS**

### **INTRODUCTION**

The Economic and Social Research Foundation (ESRF) in partnership with the United Nations Educational, Scientific and Cultural Organization (UNESCO) are doing a research study on the Policy and Research interface titled *Research–policy linkages of Science-related Ministries and their research parastatals*”. This project falls within Joint Programme One, ‘Wealth Creation, Employment and Economic Empowerment’ specifically the component dealing with, *“Policy Dialogues and Advice with Stakeholders including Women Associations and Professional Groups’*.

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Ms. Dora Semkwiji	Office number 022 2760751 / 0787 123123	Economic and Social Research Foundation	dsemkwiji@esrf.or.tz



### Official Contact Information

Full Name of the Ministry:	
P.O Box:	Tel:
Fax:	

### Details of the person completing this survey

Name		Tel:	
Designation			
Signature		Mobile:	
Date:		Email	

## INTERVIEW GUIDE

### Official Contact Information

Full Name of the Research Institution/organisation:	
P.O Box:	Tel:
Fax:	Year of establishment

### Details of the person (s) completing this survey

Name	Date	Designation	Mobile Number	Email

## **Interview Guide**

### **A: GENERAL QUESTIONS ON RESEARCH, AND POLICY-RESEARCH LINKAGE**

1. What is the mandate/objective or focus of your Institution?
2. What are the key areas of research that you are doing this year?
3. What do you think are the objectives for undertaking research?
4. In undertaking a research, what research processes do you consider (stages in undertaking a research)
5. As a research Institution, how do you set the research agenda?
6. Whom do you involve in developing a research agenda and to what extent?
7. Do you work with your Ministry when undertaking research? If yes, kindly mention at what stage of research process do you involve your Ministry
8. What other activities do you involve your Ministry?
9. What mechanisms do you use to interact with your Ministry? Through workshops, taskforce groups or?
10. In your view, what roles do the policy-makers and users play in research initiation, implementation, monitoring and dissemination?
11. How do you see the relationship between researchers and policy makers
12. What are the impacts of research that you are doing in policy processes?
13. Do you see any relevance of research in policy decisions? Please explain

### **B: INSTITUTIONAL/ORGANIZATIONAL RESEARCH CAPACITY:**

1. How many requests do you get for undertaking a research? Do you accept all? If yes please mention the number and if no please explain
2. How many of your research results have been used by policy makers?
3. Do you get any complains with regards to your research output?
4. Do you have enough resources for undertaking research?
5. Do you think you have enough capacity given the demand of your research?
6. Do you have any mechanism of quality control?
7. Do you have any regular research evaluation system to learn on your strengths or weaknesses and opportunities? Please explain
8. How do you communicate research results to policy makers?
9. What do you think are the opportunities for research and policy linkage?
10. What do you think are the challenges for research-policy linkages?

11. What do you think are the possible contributions of research to national competitiveness and economic growth?
12. What do you think need to be done to improve research and policy linkage?
13. Please suggest ways of strengthening the influence of research in the policy making processes of science-related Ministries in Tanzania

**C: Any other relevant information**

This instrument might have not captured all the relevant information. Please feel free to provide any other information that may be useful in this study.

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**Thank you very much for the time and effort you committed in completing this survey.**

**RESEARCH-POLICY LINKAGES OF SCIENCE-RELATED MINISTRIES AND  
THEIR RESEARCH PARASTATALS**

**QUANTITATIVE DATA QUESTIONNAIRE FOR R&D**

**INTRODUCTION**

As part of this interview, the study would like to know the capacity of your research department/organization. Please fill this questionnaire which intends to collect quantitative information for evaluating the capacity in your organization/department.

**Table 1. Number of researchers and their professions**

Researchers		Gender	M	F	M	F	M	F
		Year	2009		2010		2011	
Profession								
PhD holders								
Masters holders								
Bachelors degree holders								
Other qualifications (Specify)								

**Table 2. Professions by gender**

Profession	Area of Specialization	
	Males	Females
PhD Holders		
Masters Holders		
Bachelor Digree Holder		
Other Qualifications (Specify)		

**Table 3: Please provide information on the following R&D output items from your institutions**

<b>Number Outputs</b>	<b>2008/9</b>	<b>2009/10</b>	<b>2010/11</b>
Prototypes			
Patents			
Publications in referred journals			
Books			
Chapters of Books			
Articles in proceedings			
Research reports			
Other Publications (proceedings etc)			
Technical reports			
Types of services to the community of economic importance			
Technical human resources			
Type(s) of infrastructure and numbers			
New breeds/varieties			
Others (please specify)			