

**THE UTILIZATION OF SCIENTIFIC OUTPUTS IN POLICY  
FORMULATION IN THE MINISTRY OF NATURAL RESOURCES  
AND TOURISM, TANZANIA**

**THE UTILIZATION OF SCIENTIFIC OUTPUTS IN POLICY  
FORMULATION IN THE MINISTRY OF NATURAL RESOURCES  
AND TOURISM, TANZANIA**

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**The Thesis Submitted to the School of Public Administration and Management in  
Partial/Fulfillment of the Requirements for the Award of Master of Research and  
Public Policy of Mzumbe University**

**2018**

## **CERTIFICATION**

We, the undersigned, certify that we have read and hereby recommended for acceptance by the Mzumbe University, a Thesis entitled “ **The Utilization of Scientific Outputs in Policy Formulation in the Ministry of Natural Resources and Tourism, Tanzania**” for partial/fulfillment of the requirements for the award of Master of Research and Public Policy of Mzumbe University, Tanzania.

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## DECLARATION

I, Uledi Khamis Hamad, declare that this Thesis is my own original work and that it has not been presented and will not be presented to any other university for a similar or any other award.

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## **DEDICATION**

I dedicate this Thesis to my parents; Harusi Mussa Ali and Khamis Hamad Ali, as they are my first teachers.

## **ABSTRACT**

The goal of this study was to find out the utilization of scientific outputs made by Research and Development institutes especially, Tanzania Forestry Research Institute (TAFORI) and Tanzania Wildlife Research Institute (TAWIRI) in the Ministry's policy formulation, these research institutes operate autonomously under the umbrella in the Ministry of Natural Resources and Tourism (MNRT). Along this, the case study design was employed whereby, 40 respondents were selected as sample size from four departments; the Department of Administration and Human Resources, Policy and Planning, Forest Services and Beekeeping, and Wildlife Development, all were staffs working in the MNRT headquarter. Moreover, purposive and simple random sampling techniques were used; semi-structure interview guides, semi closed-ended questionnaires and documentary reviews were the selected methods of gathering information. Additionally, the computer software (Atlas.ti and MS-Excel) used to assist the researcher in data entry, data management and presentation of the findings.

Frankly the findings of this study demonstrated that, the public research institutes conducted researches and disseminated their findings to the Ministry, the research reports were delivered in the form of technical reports, research summaries, and annual reports. In most case the scientific reports were presented in the conference and Ministry Board Meeting. However, the fact was that scientific outputs generated by TAFORI and TAWIRI were not fully integrated in the Ministry. The study found that the external factors that made policy makers failed to incorporate research results for policy development was the pressure from politicians; as the politicians enforced policy agenda, and inadequate fiscal resources. While internal organization sources of failure was inability of human resource in propose the policy issues to be researched for, and inability of understand, analysis and uptake of the research results as potential inputs in public policy development. Hence, to address this problem, the study recommends for the provision of refresher course to human resources as well as the public organizations should involve researchers as important stakeholders in the wholly process of developing public policy; from problem identification to the policy evaluation.

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## **LIST OF ABBREVIATIONS**

CAMARTEC:	Centre for Agriculture Mechanization and Rural Technology
COSTECH:	Commission for Science and Technology
EBP:	Evidenced Based Policy
ESRF:	Economic and Social Research Foundation
IHI:	Ifakara Health Institute
IPR:	Intellectual Properties Rights
M&E:	Monitoring and Evaluation
MARI:	Mikocheni Agricultural Research Institute
MDAs:	Ministries, Departments and Agencies
MNRT:	Ministry of Natural Resources and Tourism
MoAFC:	Ministry of Agriculture, Food Security and Cooperatives
MoCST:	Ministry of Communication, Science and Technology
MoITM:	Ministry of Industry, Trade and Marketing
MS-Excel:	Microsoft Excel
NIMR:	National Institute of Medical Research
P&P:	Policy and Planning
R&D:	Research and Development
REPOA:	Research for Poverty Alleviation
SIDO:	Small Scale Industry Development Organization

SPRC:	Social Policies Research Centre
SUA:	Sokoine University of Agriculture
TAFIRI:	Tanzania Fisheries Research Institute
TAFORI:	Tanzania Forestry Research Institute
TaTEDO:	Tanzania Technology Development Organization
TAWIRI:	Tanzania Wildlife Research Institute
TEMDO:	Tanzania Engineering and Manufacturing Development Organization
TFSA:	Tanzania Forest Service Agency
TGNP:	Tanzania Gender Networking Programme
TIRDO:	Tanzania Industry Research Development Organization
UNDEP:	United Nations Development Programmes
UNESCO:	United Nations Education Science and Cultural Organization
URT:	United Republic of Tanzania
USA:	United States of America

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.0 Introduction**

This is introduction chapter that has the following sections: Background to the study, Description of the problem, Research objectives, Research questions, Significance of the study, Scope of the study, Delimitations of the study, Definition of key terms, Conceptual framework and Structure of the Thesis.

#### **1.1 Background of the study**

The process of developing, approving and implementing public policies differ from one country to another despite of some similarities. Over the years, the public policy making framework in Tanzania has been changing depending on the nature of policy and the specific period in history. Policy evaluation and policy process in Tanzania can be presented into two main phases (Montez, 2010). The first phase covers the period prior to the adoption of liberalization policies. During this phase 1961 to 1980's Tanzania experienced fundamental shifts in social policies: 1961 to 1967 policies focused on correcting problems created by the colonial regime. The Arusha Declaration of 1967 marked the establishment of the general parameters and machinery for social policy making thus, Ujamaa and self-reliance formed the ideological framework for all social policies' decision (Hardiman & Midgley, 1982).

The second phase covered the post liberalization policy period. Prior to the economic and political reforms which were adopted from early 1980's and introduction of multiparty system in 1990's, decision making process were dictated from the centre with limited participation of stakeholders. Dynamics of the policy process changed significantly after liberalization, unlike during the first phase where drivers of changes were used to be influenced largely by the political elites under a single part system. Today public policy formulation and implementation is to a large extent guided by the election manifesto of the ruling party which is assumed to reflect people's interest (Nzuki, M. et al, 2011).

Hence, politicians dominate the policy process; this is because social and economic policies in developing countries particularly Tanzania is extremely concerning with political ideology (Hirasuna et al, 2010).

In Tanzania, most researches are conducted by public research institutes, higher learning institutions and private research institutes. For example the public research and development institutes which are administratively organized under umbrella bodies, and enjoy a level of autonomy from their parent Ministries: Such institutes included the Tanzania Forestry Research Institute (TAFORI), the Tanzania Wildlife Research Institute (TAWIRI), the Tanzania Fisheries Research Institute (TAFIRI), and the National Institute for Medical Research (NIMR), also higher learning institutions such as Mzumbe University, Sokoine University of Agriculture, and University of Dar-es-salaam. Likewise, private research institutes that have started to engage in research, largely in the social sciences (Nzuki, M. et al, 2011); These institutes include the Economic and Social Research Foundation, the Research for Poverty Alleviation (REPOA); the Tanzania Gender Networking Programme (TGNP).

Therefore, pace type of partnership between research institutes and policy making process in Tanzania is generally timid. Yet research is pre-requisite to the policy agenda setting. 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 good policy making securely and rationally based on the relevant research findings (Nzuki, M. et al, 2011). Currently, the linkage between research and policy making process has changed significantly due to the social-economic and political environment demand at both national and international levels (Mwakapugi, 2010).

## **1.2 Description of the problem**

The United Republic of Tanzania (URT) like other countries in the world focuses on improving human welfare and social security through provision of social-economic services in the entire country, based on formulation and implementation of public policies. The full integration of research into policy by the national development vision ensures that the scientific findings generated by R&D institutes are responsive to the socio-economic needs of the country. Thus, it might therefore be thought that, the establishment of research and development institutes' gains momentum in formulating evidenced based policies decision in public organizations.

Despite of the fact that, Tanzania's R&D undertaking have produced convincing scientific results, only few have been converted into tangible products, processes and services to date. In most cases the failure to utilize scientific outputs can be attributed the inability of the policy scientists in formulating and implementing comprehensive research based policies on one hand, and their inability to use scientific outputs for improving livelihood on the other hand. Continuing with this current situation prevents the government vision of establishing R&D institutes. Therefore, this study seeks to investigate how the MNRT utilizes scientific findings made by the R&D institutes that operating under their respective ministerial administration as the basic inputs to the policy decision-making.

## **1.3 Research objectives**

### **1.3.1 General objective**

The general objective of the research was to find out the utilization of scientific outputs made by Research and Development institutes, specifically TAFORI and TAWIRI in formulating public policies within the Ministry of Natural Resources and Tourism.

### **1.3.2 Specific objectives**

Specifically, this study intends to find out the following research objectives:

- a) To identify the utilization of scientific outputs from TAFORI and TAWIRI for policy formulation in the Ministry of Natural Resources and Tourism.
- b) To identify the challenges that policy makers from MNRT encounter as result scientific outputs generated by TAFORI and TAWIRI are not used as inputs for policy formulation.

### **1.4 Research questions**

- a) How policy makers from Ministry of Natural Resources and Tourism of the government of Tanzania utilize scientific results produced by TAFORI and TAWIRI for policy formulation?
- b) Why is it difficult for policy decision makers from MNRT to utilize the research findings generated by TAFORI and TAWIRI as inputs for policy formulation?

The research questions were derived from the statement of the problem, and they have correlated since the questions intended to answer “how” and “why”. Therefore, the posed questions of investment were the framework that enabled researcher to discover the fact on how policy decision makers utilize scientific outputs for policy formulation.

### **1.5 Significance of the study**

The findings of this study are expected to have cross-cutting significant in both public sectors which include Ministries, Departments and Agencies (MDAs), and private sectors: Non State Actors and Community Based Organizations because the sectors perform their routine works based from organizations’ policy. Specifically, the study would be useful to the improvement of public policies as it will provide evidence to the policy scientists in the MNRT on the demand of utilizing scientific outputs for pleasurable policy making decision. Moreover, the research findings would create awareness to the policy practitioners from both public and private institutions on the utilization of research findings as basic inputs not only for policy formulation, but also for supporting social programmes and economic projects in the country.

Additionally, the businessmen also rely on scientific evidence to determine the supply and demand flow of services and/or goods. Likewise, the study is significant to the research organizations, since it seeks to determine the co-relationship existing between scientific findings versus policy formulation; hence it contributes to the body of knowledge in literature. Lastly, the study is essential for partial fulfillment of the requirements for the award of Master of Research and Public Policy of Mzumbe University in 2018.

### **1.6 Scope of the study**

The scope of this study merely focused on the utilization of scientific results made by TAFORI and TAWIRI from 2011 to 2016 in policy formulation within the Ministry of Natural Resources and Tourism. Thus the study looks the interaction that assumed to exist between policy makers working in the four departments: Administration and Human Resources, Policy and Planning, Forest Services and Beekeeping, and Wildlife Development, with research results disseminated from their R&D Institutes.

### **1.7 Delimitations of the study**

The researcher understands the scope of research. This provides the opportunity for the researcher to undertake the study in specific selected areas with resources consideration. The research methods enforced the researcher to be very specific in a particular area, thus the result obtained only based as evidenced from that area. Moreover, the current study occupies the primary and secondary sources of data gathering with case study design, since we believe that focusing on single case gives a clear picture on how the scientific outputs are equipped by the policy makers during policy making process in the MNRT.

### **1.8 Definition of key terms**

Scientific outputs are the results that provide information to those policy makers and other influential people who can use to make better policies. Indeed one of the missions of the research institutes is to provide such political and social relevant research to units of the government. They are often good sources of information and ideas for researching on important public policy issues (Birkland, T. A., 2016). In relation to this study,

scientific outputs also interpreted as research findings/results that be disseminated by R&D institutes whether public research institutes, academic institutes or private research institutes.

Policy refers as statement of the government of what is intending to do such a law, regulations, ruling, decisions, orderly or a combination of these. The lack of such statement may also be an implicitly statement of a policy (Birkland, T. A., 2016). Thus in relation with this study, the policy included the written guidance or declaration of the Ministry of Natural Resources and Tourism.

Dror (1968), as cited by Warioba and Gibai (2003) defined public policy as a very complex, dynamic process, whose components make different contributions to it, it decides on going guidelines for action directed on major guidelines for action directed at future, mainly by government organs. These guidelines formally aim at achieving what is in a public interest by the best possible means. Public policy also is deliberate and binding action given in terms of declarations, laws, act of the parliament etc, by authoritative organs of the state with the aim of influencing the behavior of the society (Baguma, 1982). While Warioba, L and Gibai, E (2003), defined public policy as a proposed course of action, be it for a group of people or government, within a given environment providing obstacles and opportunities when the policy has proposed to utilize and overcome in an effort to reach goal. Moreover, it consists of patterns of action of not separate discreet decisions by governmental officials. Hence, a policy involves not only decisions for instance, to enact a law on a particular issue but also the subsequent decisions relating to the implementation and enforcement.

Public policy formulation is the second stage in the policy cycle, this stage involving the process of drafting change to existing legislation or drafting new legislation to enact measures of solving policy problems. Thus before policy formulation to take place, situation analysis is done of which it includes reviewing all possible alternatives and solution identified during policy analysis.

Policy makers refer as authorized personnel who makes or influences decision following the evidenced brought to him. The policy makers are involving politicians like cabinet members, members of the parliament and councillors, regional and district commissioners, also it involves senior administrative officers like permanent secretors, directors, managers, and head of the departments.

Evidenced Based Policy (EBP) is a discourse or set of methods which informs the policy process, rather than aiming to directly affect the eventual goals of the policy, it advocates a more rational, rigorous and systematic approach. The pursuit of EBP is based on the premise that policy decision should be better informed by available evidence and shall include rational analysis (Sophic & Julius, 2005).

## **1.9 Conceptual framework**

Research and Development institutes (TAFORI and TAWIRI) are legal established institutes which have mandate to carry out research into various aspects of forestry and wildlife respectively for the purpose of establishing, improving modern methods, and publication of their findings. Therefore, the scientific outputs utilization are guiding conceptual framework of this phenomenon that is presented into five aspects:

One: Scientific outputs utilization ensures that the scientific knowledge generated by research institutes is responsive to the socio-economic needs of the country. Hence, the research institutes convey their scientific findings to the decision makers. The common communication products used by Research and Development institutes: (a) Technical research report: The reports communicate information which has been compiled as a result of research and analysis of data. They transmit information with a clear purpose, to the specific policy audiences. (b) Research summary: The focused summary of a long research report, it gives the readers the key messages and information from the report, while also encouraging them to read the full report and or read further into the subject area. (c) Scientific journal publication: The research institutes prepare scientific journals with the purpose of giving researchers a venue to impact their knowledge to one another, and contribute what they can to the grand design of improving natural knowledge.

Two: Communicating research findings in public policy implies the process of conveying information from the researchers to the policy decision makers. The R&D institutes share their outputs with decision makers from the Ministry via the following dissemination devices: (a) Scientific Conference proceeding: The institutes' projects involve an extensive process of reporting and disseminating of the findings. Each project requires a discussion and final report to be published and made available in the institute's website. The R&D institutes organize conference for consultation, exchange of information and discussion of experts who confer about a particular topic. For example TAWIRI organizes conference after every two years; the meeting lets together both local and international researchers, policy makers and wildlife stakeholders. (b) Work-in-progress seminars. An extensive series of work-in-progress seminars is held by research institutes designed to provide opportunities for dialogue between researchers and policy stakeholders during research progress. (c) Scientific newsletter: The institute like TAFORI shares out its research activities twice a year to all members. It uses newsletters as a means of disseminate a summary of its findings.

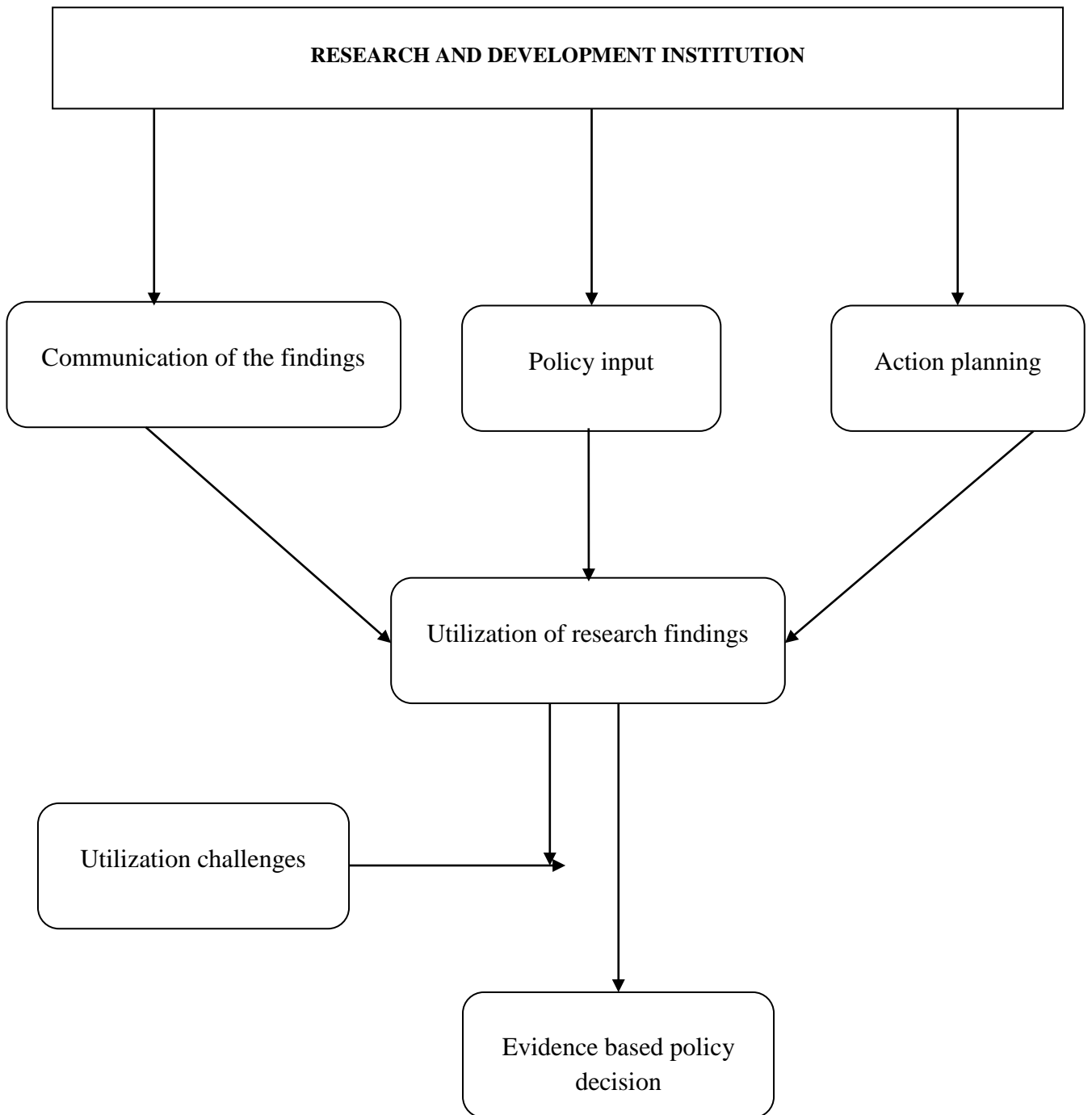
Three: Policy makers are committed to developing and implementing policies that are consistent with research evidenced. Hence, the scientific findings have the following inputs to the policy makers: Negotiated formal research agenda: The research institutes develop a research agenda on annual basis depending on fund around. The research agenda is developed by a research panel after extensive consultation with senior policy makers, and research stakeholders. They identify both broad areas for research and specific project instruments; Research dissemination: The institutes maintain a system of communication and co-operation with stakeholders for the purposes of facilitating, and assisting in the practical application of the results of researches carried out by or on behalf of the Institutes.

Four: The social science researchers are strongly attracted to the idea that their work should be useful to policy-makers. But their experience of engagement with policy-makers can be one of frustration as they encounter the complexities and compromises inherent in policy processes, and what they sometimes perceive as lack of understanding of the nature and role of research. In a similar way, policy-makers are attracted to the idea

that their work should be underpinned by research findings. However, many research studies are flawed by unclear objectives, methodological substandard, inadequate analysis, and conclusions that are not supported by the data provided.

Five: It is evident that in order to bridge the research-policy gap, the following should be taken into account: Ensuring strong ownership of the research agenda by Tanzanians and hence avoid donor driven research, improvement in government capacity to recognize and absorb research, ensuring timeliness in carrying out researches that, their findings are intended to influence policy, ensuring that both researchers and policy makers have a connection with the society for which the research findings and subsequent policies are intended, and Improving techniques for communication and dissemination of research results; Research centres from time to time make commentary on policy issues, and all efforts are made to ensure the research findings are reported in the media.

**Figure 1.1 Utilization of scientific findings framework**



Source: Researcher construction, 2018

## **1.10 Structure of the Thesis**

This Thesis has six chapters which are arranged sequentially. The first chapter is introduction which described the Background of study, Descriptive of the problem, Study objectives, Research questions, Significance of the study, Scope of the study, also Delimitations of the study, Definition of the terms, Conceptual framework, and Structure of the Thesis. The second chapter is literature review which deal with Philosophical review of literature, Operational review of literature, Methodology review of literature, literature review from earlier studies, and Literature synthesis. The third chapter is Research Methodology which involves Research design, Research area, Population of the study, Sample, sampling techniques and sample size, Data collection methods, and Data processing and analysis. The fourth chapter is the Findings that involved: Respondents' profile, Findings from research objectives and General findings. The discussions of the findings are presented in the chapter five. Finally, chapter six contains summary of the study, conclusion and recommendations derived from research findings as well as recommendations for further study. Furthermore, Bibliography and Appendices are attached in this chapter.

## **CHAPTER TWO**

### **LITRATURE REVIEW**

#### **1.0 Introduction**

This chapter involves Philosophical review of literature, Operational review of literature, Methodological review of literature, Literature review from earlier studies, and literature synthesis.

#### **2.1 Philosophical review of literature**

There are various theories which tried to explain the reasons that motivate policy makers to rely on scientific findings often when the demand risen to make policy. On another side, the theories identify some factors that make policy analysts unable to formulate evidence based policy.

The increased uses of scientific evidence in the development and evaluation of public policies has the potential to increase delivery of services outcomes and improve resources allocation (Banks, 2009).

Evidence can impact public policies at several points in the development process, from the outset when an issue or problem is identified for policy attention, to the development of the most appropriate response, and to subsequent evaluation of its effectiveness (Banks, 2009; Ogilvie et al., 2009). In this study two theories were adapted; the two community's theory and the Evidence-based decision making theory.

##### **2.1.1 The two communities' theory**

The perspective of two communities has been a recurring motif in knowledge utilization studies (Caplan, 1979). The theory argues that scientists and policy makers are separated by their languages, values, norms, social and professional affiliation. The primary goal of scientists is the systematic search for a reliable and accurate understanding of the world, while the primary goal of policy makers is a practical response to a particular policy issues.

Differences between the two communities are associated with a contrasting list of supply-side and demand-side problems (Bogenschneider & Corbett, 2010; Furhman, 1994; Nutley et al., 2007; Rosenblatt & Tseng, 2010). On the supply side, researchers who fail to focus on policy relevant issues and problems, cannot deliver research in the time frame generally necessary for effective policy making, do not relate findings from specific studies to the broad context of a policy issue, ineffectively communicate their findings, depend on technical arguments that are inaccessible to policy makers, and lack credibility because of perceived career interests or even partisan biases. On the demand side policy makers who fail to spell out policy objectives in researchable terms, have few incentives to use science, and do not take time to understand research findings that relevant to pending policy choices.

### **2.1.2 Evidence-based decision making theory**

The theory sees evidence-based decision-making as a highly interactive process involving four key groups of actors: decision-makers; research funders; researchers; and knowledge purveyors (public relations, media, etc). Lamas, (2003) in this theory outlined least six areas where mechanisms can be used to enhance the conduct and use of research in decision-making: priority-setting structures (to help decision-makers get the research they need); funding and training (to help researchers deliver the needed research); research synthesis and influence (to facilitate the sharing of research evidence and its use in advocacy); critical evaluation (to help determine the relevance and usefulness of research); receptor capacity (the ability of decision-makers to understand and use research); and linkage and exchange (to facilitate dialogue and partnership between decision-makers and researchers).

Therefore, both theories (two-community theory and Evidence-based decision making theory) seem to match well with the study objectives since they put enclosure the reasons as why policy makers sometimes fail to motivate research findings when they come to the decision making and what are the rationales that seemed to be achieved when decision-makers rely on scientific evidence.

## **2.2 Operational review of literature**

Scientific works conducted by different researchers were composed by explanatory and outcome variables which were used to operationalize their studies. The independent variables in most cases are the one which influenced the dependent variable.

The study by Magoyo (2016) used resource allocation, health programme designing, and scientific communication platform as the variables in the utilization of scientific research in health related decision making.

Other studies were conducted by (Nzuki, M. et al, 2011) whereby the researchers used the variables such as diversity of research personnel and conduct of research, mechanisms for interacting with policymakers and users, and role of policy-makers in research initiation, implementation, monitoring and dissemination.

## **2.3 Methodological review of literature**

The case study on transforming researches into policy networks in Austral. The study employed two cases: the Social Policy Research Centre (SPRC) at the University of New South Wales, and the HC Coombs Policy Forum (Coombs). Moreover, the tools used were in-depth interview, open-ended questions, participant observation and document analysis. The study stated that, utilization of research results was not integrated because of bureaucracy of policy officials, and ability to comprehend with scientific findings. The study recommended on having the research scientists in decision making such as academicians, also involvement of interest groups and community members in developing public policy. Vas (2012)

The study organized by (Nzuki, M. et al, 2011) in Tanzania used multiple case study design which involved three key science oriented Ministries and their respective research organizations: 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). While the research institutes were: Commission for Science and Technology (COSTECH), the Small-scale Industries Development Organization (SIDO), Mikocheni 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). Instruments of data compilation were interview, questionnaire and focus group discussion in purposive sampling technique. The study described that, street level bureaucrats perceived that research as not being useful to the real politic of life hood, policy makers were biased against using it; research itself was often not of good quality or was not accessible to policy makers and prefer to be led by ideology and pragmatism. Therefore, the study proposed on the need to promote co-existence between researches and policy making process as the way towards successful economy and subsequently lived hoods of the people in Tanzania.

The study conducted by McColskey and Lewis (2007) in United Kingdom, found out that the contact between researchers and decision makers was not adequately empowered in public sectors. Thus to increase the uptake of scientific findings; platforms like symposiums, seminars, workshops and conferences should pave the way as major means of interface on sharing the scientific findings between researchers decision makers and public in general.

#### **2.4 Literature review from the earlier studies**

Magoyo (2016) found that, communication platform for research findings were inadequate, technical language also play role in this scenario, too much statistical embedded in scientific reports, and timeline were the factors that contributing to the little utilization of scientific findings in health related decisions. Apart from those factors, the study identified some negative effect of make decisions without being supported by research findings as improper allocation of resources, failure of projects and programmes. However, it noted in the study that, the district council officials and research scientists have great opportunity to make improvement by increasing the uptake of scientific findings consequently health system and delivery of health services would improve.

Hardee et al, (2015) outlined the perception of decision makers on the use of research evidence: views of what constitutes evidence need to be more aligned, with researchers understanding that evidence-based policy does not only mean “research evidence-based” to decision makers and with decision-makers understanding the value of robust research evidence among other evidence they consider when making decisions. Hence, it was found that decision makers appreciated research findings but it was only one factor they took into consideration, and may not be the most influential factor in their policy decision-making process.

Vas (2012) found out the limitations of involving research in policy making: (1) Public servants who were tasked with the analysis of policy problems operated with complex bureaucratic structures, which were often geared toward impressing their political matters. (2) Decision-makers have also to wait up the application of research evidence to a policy problem that involve a diverse range of stakeholders who might or might not be receipts of new policy initiatives. (3) Policy makers were generally working under time pressure and often require quick results to address issues and to respond to pressures from various stakeholders within and outside bureaucracies. (4) Ability to comprehend research evidence and technical issues with emerge as outcomes from the research. Generally, the study demonstrated the value of a policy community approach through the creation of a policy hub which is responsible for integrating and creating research policy interaction between ranges of policy actors. It should have cross-governmental representatives, academicians, interest groups and community members.

Nzuki, M et al, (2011) demonstrated that linkage between research and public policy process in Tanzania was limited, as street level bureaucrats perceived that research was not being useful to the real politic of life hood, policy makers were biased against using it, research itself was often not of good quality or was not accessible to policy, thus the policy makers prefer to be led by ideology and pragmatism. Nevertheless, the study suggested to the necessity of promotes co-existence between researches and policy makers, so as to attain economic growth in Tanzania.

Campbell and Fulford (2009) came up with six key components which can increase the uptake of research in decision making processes: attention to the nature and content of research itself as well as to a range of knowledge mobilization, capacity building, communication, collaboration and networking approaches to extend research connections, interaction and application. Thus researches can be concluded and presented in the workshops, seminars and conferences. These training devices were regarded as critical for influencing the uptake of scientific research among the decision makers.

McCloskey and Lewis (2007) emphasized on idea of making evidenced decision on public sectors, as the study revealed that limited use of health information for decision making was partly due to a communication gap between researchers and decision makers. It was observed that the contact between researchers and decision makers was not adequately empowered. Thus in order to increase the uptake of scientific research findings; platforms like symposiums, seminars, workshops and conferences should pave the way as major means of interface on sharing the scientific findings between researchers and decision makers.

Almeidd & Báscolo (2006) identified some of the barriers that hinder or prevent research from being used in the decision making process: (1) Ideological problems that constrain political rhetoric and the formation of reform agendas. In addition lack of political will or inability to formulate more integrated interactive policy. (2) Uncertainty caused by research divergence among researchers on any given problem (conceptual confusion and methodological substandard). (3) Media interference, which can cause confusion of the issue by publicizing results inappropriate and exploit divergence rather than clarifying the research findings.

Stone et al (2001) recognized the role of research evidence in their article that, the relationship between research and policy specifically about how research impacts on policy and about how policy draws on research was straightforward. The study added that by contrast to the resources at the disposal of Western governments and international development agencies, many developing countries lacked both in house research capacity and administrative personnel whose skills to utilize research findings. The capacity of bureaucracies to absorb, interpret and synthesize research was perceived to be low.

## **2.5 Literature review synthesis**

Most of the domestic and international studies done concerning the use of research outputs by the Ministries many in developing countries documented that, the interface between research scientist, policy makers and public yet was not straightforward. The countries lacked both in research scientists and administrative personnel whose skills to utilize research findings. Thus there is need to promote co-existence between researchers and policy stakeholders.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.0 Introduction**

This chapter presents the methodological part of the research, which includes the Study design. Study area, Study population, Sample, sample size and sampling technique, Instrument of data collection, Method of data processing and analysis.

#### **3.1 Study design**

The design of this study was a case study research design; the researcher selected this design in order to explore in depth information on how public policies should be formulated based on research findings as the one of the fundamental point that leads to the formulation and implementation of successful public policies. Likewise the researcher wanted to understand why some organizations fail to rely on scientific outputs whenever they make decision. Hence, the case study design was seen to be the best design to be applied in this research for the reason that, it was the only design structured to answer “how” and “why” questions. Therefore, the design had made it possible to the researcher to understand the existing interaction between scientific results and policy decision-making in the Ministry of Natural Resources and Tourism.

#### **3.2 Area of study**

The research was conducted in the Ministry of Natural Resources and Tourism; Dar-es-salaam and Dodoma. Therefore, the MNRT was selected as areas of this study on the ground that the office was structured with R&D institutes in its core departments thus the composition helped researcher to see how the scientific results made by those R&D institutes influenced in the policy formulation process within the Ministry. The MNRT organogram is attached in Appendix I.

### 3.3 Study population

The population of the study was the Ministry of Natural Resources and Tourism (MNRT). The Ministry is responsible for management of natural, cultural and tourism resources, thus the target population comprised four departments namely: the Administration and Human Resources, the Policy and Planning, Forest Services and Beekeeping, and Wildlife Development. Indeed, the Department of Forest Services and Beekeeping worked closely with TAFORI, while the Department of Wildlife Development with TAWIRI, the Department of Policy and Planning had authority to overall policies and plans of the Ministry and its research institutes, above all the Department of Administration Human Resources had supreme all activities of the Ministry including its research institutes. Consequently, the researcher collected information as long as the targeted population was familiar with the functions of the R&D institutes (TAFORI and TAWIRI). The summary of the targeted population used in this study is presented in the Table 3.1

Table 3.1 Units of inquiry

S/N	Department/division	No. of staff	% of the total
1	Department of Administration and Human Resources	49	23
2	Finance and Accounts Division	17	8
3	Department of Policy and Planning	19	9
4	Communication and Education Division	4	2
5	Internal Audit Division	7	3
6	Procurement Management Division	7	3
7	Legal Unit	9	4
8	ICT Unit	5	2
9	Department of Wildlife Development	28	13
10	Department of Forestry and Beekeeping	19	9
11	Tourism Department	40	18
12	Antiquities Department	13	6
Total		217	100

Source: MNRT records headquarter, 2018

### 3.4 Sample size

This part relates to the number of respondents selected as the sample size from the population; out of 115 total numbers of staffs from the selected departments, the researcher selected 40 respondents equivalent to 35% of the total population. The sample size was classified into four sample frames based on their departments. The number of representatives from each department is shown in Table 3.2

Table 3.2 Sample size

S/N	Unit	No. of staff	Sample size	% of the total
1	Department of Administration and Human Resources	49	4	10
2	Department of Policy and Planning	19	14	35
3	Department of Forestry and Beekeeping	19	12	30
4	Department of Wildlife Department	28	10	25
Total		115	40	100

Source: Researcher, 2018

### 3.5 Sample and sampling procedures

The study used both probability and non-probability sampling techniques: the simple random sampling technique and purposive technique were selected sample techniques in this study.

#### 3.5.1 Purposive sampling technique

Since the respondents play a crucial role during data collection process, the research demanded to assemble information from respondents who possessed adequacy experience, skills and knowledge on how researches were carried, disseminated, as well as how decision-makers bound with scientific findings when they came for decision point. Therefore the researcher selected 15 respondents by using purposive method. The summary of the targeted respondents is presented in the Table 3.3

Table 3.3 Purposive sampling

S/N	Position	Sample size	% of the total
1	Deputy Director Administration	1	6.6
2	Director Policy and Planning	1	6.6
3	Deputy Director Wildlife Development	1	6.6
4	Deputy Director Forest Services	1	6.6
5	Head Policy (M&E)	1	6.6
6	Head Policy analysis	1	6.6
7	Head planning and Budget	1	6.6
8	Head Wildlife Conservation	1	6.6
9	Head Forest services	1	6.6
10	Head Beekeeping	1	6.6
11	Beekeeping research officer	1	6.6
12	Forest research officer	1	6.6
13	Wildlife research officer	1	6.6
14	Wildlife officer	1	6.6
15	Human resource officer	1	6.6
Total		15	100

Source: Researcher constructed, 2018

### 3.5.2 Simple random technique

The researcher employed simple random technique whereby unbiased individual employees from MNRT were selected as respondents in the study. In addition the technique had measurable precision as it does not depend upon the existing information for selecting the population. Hence, a totally of 25 respondents working in the MNRT were selected. The summary of the targeted respondents selected by using simple random technique is presented in the Table 3.4

Table 3.4 Simple random sampling technique

S/N	position	Sample size	% of the total
1	Department of Administration	2	8
2	Department of Policy and Planning	10	40
3	Department of Forest and Beekeeping	7	28
4	Department of Wildlife Development	6	24
Total		25	100

Source: Researcher constructed, 2018

### 3.6 Data collection

For the sake of answered research questions and meet the study objectives, the researcher used both primary data sources and secondary data. Here were elaborated specifically.

#### 3.6.1 Primary data collection methods

In relation to this study primary data were collected through interview and questionnaire as instruments for data collection that carried out from field during data collection process.

##### 3.6.1.1 Interview method

The face-to-face semi-structure interview guideline was used during data collection, where interviewer engaged physically in questions with answers interaction. This means, the researcher interviewed 15 respondents. Hence, the interview tool of data collection helped the researcher to collect comprehensively information as interviewees were much experience with how scientific outputs utilized in their working environment. Moreover, interview method gave the researcher ability to control by make sure that questions were asked and answered to satisfactory manner. Along with, the researcher had opportunity to observe expression techniques from interviewees; this situation assisted the researcher to understand necessity of the respondents' messages. The interview guide which indicates the questions asked during interview is attached in Appendix II.

### **3.6.1.2 Questionnaire method**

The series of logical semi-closed-ended questionnaire that composed by using Summated Rating Scale (Likert Scale) structure was administered to 25 respondents. This instrument was useful to this study as it helped the researcher to collect plenty information from many respondents at once. Additionally, it minimized tendency of biasness, and it ensured the respondents' confidentiality. The questionnaire used during the field of data collection is attached in Appendix III.

### **3.6.2 Documentary review**

The researcher also used official documents based on the utilization of scientific results so as to supplement the primary data. The review included: (i) published literature in peer-reviewed journals, and (ii) targeted searching of websites of key government departments and other government agencies. Therefore, the secondary review helped researcher to assemble the necessary information in order to shape the conceptualization of the research problem, and deepen knowledge in the application of scientific output.

### **3.7 Data-Analysis procedures**

The information of this study gathered from interview, questionnaire and documentary review. After that, data from field interview were recorded, transcribed, summarized and categorized into themes. The computer software Atlas.ti package was used to assist the researcher since the software was useful for analysis the content and quotations from the respondents. Apart from that, the data from questionnaire were sequentially arranged and classified based on their themes as per the research objectives, than numeric codes were retrieve data for computerized analysis. The computer software Microsoft Excel was used for drawing tables, finally the report was written.

## CHAPTER FOUR

### THE FINDINGS

#### 4.0 Introduction

This chapter presents the findings obtained from the MNRT as the case area of investigation. The researcher presented the findings based on the research objectives, thus the data are presenting in a descriptive way. The chapter has three sections: the respondents' profile, the findings from the research objectives and general finding.

#### 4.1 Respondents' profile

The researcher collected data from a totally of 40 respondents; all were staffs from the MNRT in four departments: the Department of Administration and Human Resources, Policy and Planning, Forest Services and Beekeeping, and Department of Wildlife Development. The respondents' profile showed overall picture of the respondents including; sex orientation, levels of education and professional.

##### 4.1.2 Gender of the respondents

The study involved both male and female respondents in order to avoid biasness. The result showed that, out of 40 respondents, 23 of them were male and 17 respondents were female. Therefore, in this study male respondents were well represented compare to female as illustrated in the Table 4.1

Table 4.1 Gender of the respondents

Gender	Frequency	Percentage (%)
Female	17	42.5
Male	23	57.5
Total	40	100

Source: Field data, 2018

#### 4.1.2 Education levels of the respondents

The findings revealed that; there were 6 respondents equal to 15% had diploma, bachelors' degree were 20 equal to 50%. Master degree holders were 13 respondents equal to 32.5%, and one respondent equal to 2.5% had PhD. The table 4.2 illustrates the findings in a wider opportunity to see how the respondents spread out in term of their sex orientation, levels of education and professional qualifications.

Table 4.2 Profile of respondents by level of education and profession

Profession	Diploma		Bachelors		Master		PhD		TOTAL
	Males	Females	Males	Females	Males	Females	Males	Females	
Human Resources	1	1		1	1				4
Economist			1	2	1				4
Planning officer			1	2	1				4
Policy scientist			3	1		1		1	6
Researcher					2				2
Forest expert		1	2		2	1			6
Beekeeping		1	2		1	1			5
Wildlife expert	1	1	2	3	2				9
<b>TOTAL</b>	6		20		13		1		40

Source: Field data, 2018

#### 4.2 Utilization of research findings produced by TAFORI and TAWIRI

In order to understand how the MNRT utilizes research findings produced by TAFORI and TAWIRI as policy inputs to the Ministry, it is perhaps necessary to clarify the availability of scientific reports in the Ministry. The study findings from documentary reviews showed that, the research institutes disseminated their scientific reports to the Ministry; the most forms of research delivery were research technical reports, research summaries, scientific newsletters and scientific journals.

The institute like TAFORI presented scientific newsletters biannual, moreover, the institute organized the six scientific conferences on forest research this year 2018; members of the public who have relevant information about forestry research and development were invited. In similar way the TAWIRI prepared scientific conference on wildlife after every two years. The conference was attended by different wildlife stakeholders who could share skills and experience of wildlife conservation and development. Some of the documents showed that:

*“The Board shall cause to be established, maintained and utilized a system of communication and co-operation with local authorities and other departments and organs of the Government for the purposes of facilitating; and assisting in the practical application, in relation to forestry and soil conservation, of the results of researches carried out by or on behalf of the Institute, subject to such directions as may be given by the Minister, after consultation with the Minister for the time being responsible for local government affairs.”(URT, 1980)*

*“TAWIRI Scientific Conferences are Biennial events that aim at bringing together prominent and up-coming wildlife scientists and conservationists from all over the world to disseminate research findings through presentations and talks and by exchanging information about research and experience on research for wildlife conservation. In this conference there were a total of 125 presentations out of which, 90 were oral presentations, 20 poster presentations and 15 seminar presentations.” (TAWIRI, 2015)*

In addition to the availability of scientific findings to the Ministry, some data from interviewees showed that, those research activities sponsored by the government were submitted to the Ministry via technical reports and research summaries mainly. There was no exactly number of research reports that the Ministry received annually. The research centres conducted research depends upon the Ministry’s demand and access of budget. Although, the government placed 1% of its GDP for research projects, thus the demand of having scientific investigation has increased in public sectors compare to the previous years back (URT, 1986). Some of the documents showed that:

*“The Institute shall cause to be prepared and submitted to the Minister within six months after the close of each financial year an annual report dealing with the activities and operations of the Institute during that year.” (URT, 1980)*

Furthermore, one of the interviewees emphasized on the current situation on how the researches were used in the Ministry:

*“Normally we receive annual reports from TAWIRI and TAFORI, sometimes we receive research reports and summaries...but not all research findings were disseminated in the Ministry, some researches were donors’ sponsored... So if we need to know scientifically we tell TAFORI to search for, than they submit to us the findings through the Ministry board meeting...” (Interview transcript, 2018)*

Despite of the accessibility of scientific outputs to the Ministry, some data from field interviews showed that decision makers were not sharing the scientific reports throughout the office. Thus others officials remained unaware to the findings due to the fact that they failed to access the research reports. Consequently, the scientific findings remain unutilized. The data from field interview showed that, some policy decision makers were unable to make their decisions based on scientific results, for the reason that they were not aware of the findings presented in the research reports and/or they just take the idea that business as usually. One of the interviewees complained that:

*“...after the research institutes conducting their researches, they submit their findings to us (MNRT) for further process but the research reports are placed on the shelves this is because of unwillingness of some decision makers as result the document won’t be disseminated through the officials. Director from the department received the technical reports from the TAWIRI in most cases, but they don’t distribute the findings to us wildlife department! So where can we access the findings!?” (Interview transcript, 2018)*

Likewise, the data from questionnaire in the Likert Scale structure presented that, 8% of the respondents selected Strongly Agree whereas 19% selected Agree. Thus it implies that policy makers in the MNRT used scientific findings produce by TAFORI and TAWIRI during policy making process. However, 10% of the respondents selected Neutral. While 42% of the respondents selected Disagree, and 21% selected Strongly Disagree; this implies that policy makers didn’t use the research results as inputs for policy making process. In the side of utilization of research results for policy developments, data from field interviews demonstrated that there was little utilization of scientific findings by the policy makers, as most of the public policies were settled from political sphere than scientific evidenced. One of the respondents said:

*“...ahh...I can’t assure you on the application of these scientific outputs as you asked...but...Somehow we use...we use. You know public policies in developing countries particular our country Tanzania have some sort of political will, so we are not strictly relying on the scientific findings...”(Interview transcript, 2018)*

Similarly, the findings from questionnaire in Likert Scale structure showed that: 5% of the respondents selected Strongly Agreed while 34% selected Agree; this implies that policy makers used scientific findings for policy development. However, 20% of the respondents selected Neutral; they didn’t believe whether the policy makers utilized the research results or they didn’t use the research results obtained from these institutions. Additionally, 26% of the respondents chose Disagree, and 15% of the respondents selected Strongly Disagree; this means that, the research reports presented in the Ministry were not used by the policy decision makers.

### **4.3 Challenges in the utilization of research results**

In responding to the challenges in the utilization of scientific findings, both questionnaire and interview methods of data collection were placed in the field. The findings from questionnaire illustrated that there was inadequate utilization of research results for policy formulation. Thus the reasons that made policy makers failed to assimilate research results were laid into the side of both policy makers themselves and to the side of researchers. The frequent reasons written by the respondents as the source of failure: limited time between research scientists and policy experts; the reason was that conducting research has long process while policy makers needed quick results, budget was not friendly to finance a research that would be used to influence policy decision, methodological substandard, inadequate of the research findings, and uncoordinating between policy makers, research scientists and stakeholders.

In the same way, the results from the interviews were much related with those presented in the questionnaire. Failure of utilizing scientific results as input for policy formulation had its root from political argument. The politicians were not interested with scientific research since the resources they allocated for conducting scientific investigation as well

as dissemination of the findings by Research and Development institutes were not sufficient. One of the respondents said:

*“Though Tanzania is not well developed economically, and we are somehow politically settled, thus we aren’t serious utilizing these research findings because of so many challenges like financial problem.... Shortage of fund and political readiness is the one of the potential obstacles that slow down scientists’ efforts on conduct researches which would support policy formulation in public sector” (Interview transcript, 2018)*

Moreover, the study revealed that, inadequate sharing of research findings between the research institutes and the Ministry, and/or among the staffs in the Ministry contributed to the little utilization of scientific outputs for policy making process.

One of the respondents said:

*“...conducting a research that could determine the need to reform or formulate a new policy has bureaucratic process. Likewise, we fail to adhere with research findings because the outputs are not freely shared. The research institutes conducted research based on their areas of jurisdiction but not all findings were disseminated to the Ministry, some researches were donors’ sponsored...” (Interview transcript, 2018)*

#### **4.4 General research findings**

The Research and Development institutes conducted scientific investigation and disseminated the respective findings to the Ministry, the research reports were delivered in the form of technical reports, annual scientific reports and scientific newsletters. The scientific reports were presented during Conference and Internal Board Meeting. Tables 4.3, 4.4 and 4.5 illustrate these findings by presenting the scientific publications produced by TAFORI and TAWIRI.

Table 4.3 Problem area whose outputs were submitted to the Ministry

Year	Scientific problem	R&D Institute	Mode of submission
2013	Wildlife census	TAWIRI	Scientific report
2014	Annual Burned Area Report	TAFORI	Technical report
2013	Wildlife census	TAWIRI	Technical report

Source: Field data, 2018

Table 4.4 Scientific reports presented in the Ministry Board Meeting

Year	Meeting agenda	Product output	Remarks
2013	Discussion on the research findings from Wildlife census conducted 2013	Decline of numbers of elephants in Selous game reserve	Elephants Management Action Plan
2015	Conserve Hill tops	Hill top is an area for thick forest, source of down streams, irrigation	Including of bamboo forest as part of new forest policy of 2018

Source: Field data, 2018

Table 4.5 Scientific conferences held by TAWIRI

Year	Conference theme	Product output	Remarks
2011	Climate change: Challenges and Opportunities towards sustainable Wildlife Conservation and Development	Climate change and direct human impacts are predicted to lead to increasing conflict for water in Tanzania. This threatens not just wildlife in the National Parks and other protected areas; other it affects the very survival of entire ecosystems at the scale of whole watersheds	Built up its human capacity in ecohydrology and water resources management with several well-trained and enthusiastic MSc graduates
2015	The future of Wildlife Conservation in the face of Increasing Anthropogenic Demands	Social-Socio-economic demands such as loss of wildlife habitats due to land use change driven by expanding human population also affect wildlife populations. Elephant poaching has become one of the leading wildlife crime in the world	Preparing future conservation plans and regulations for our wildlife resources under scientific results

Source: Field data, 2018

Moreover, the findings from documentary reviews showed that, some scientific reports were disseminated to the Ministry, and their outputs were utilized by policy makers in the formulation of the Ministry’s action plans. Table 4.6 presented the development plans implemented by the MNRT as the product from scientific results done by TAWIRI.

Table 4.6 The Ministry’s development plans associated with scientific reports

Five Year Action Plan	Scientific sources	Development issues in the Ministry
2009/2014	Wildlife census reports	Carnivores Management Action Plan
2010/2015		Elephants management Action Plan
2010/2015		Introduction of Good quarter setting system, and Non-determentary findings

Source: Field data, 2018

Apart from utilization of scientific outputs in the MNRT, the findings from questionnaire argued that, the utilization of scientific outputs generated by TAFORI and TAWIRI as potential inputs for policy formulation were not fully integrated in the Ministry. The factors that made policy makers from the MNRT fail to incorporate research results for policy development were identified in both; institutional capacity and human resources capacity. Inadequate fiscal resources; that could finance research activities, shortage of experts and timeframe were the common sources of failure. Thus the demand for formulating new policy or review the current policy went inverse proportion with the availability of scientific findings. Table 4.7 presents the challenges that policy makers from Ministry of Natural Resources and Tourism encounter towards EBP.

Table 4.7 General challenges

Institutional challenges	Human resources capacity
Budget to finance research projects	Shortage of experts in area like amphibiology, reptilian
Most of wildlife researches were allocated in Northern zone in Tanzania, thus the Institute fails to determine status of wildlife in southern zone	Sharing of scientific findings among the staffs, setting of policy priorities by policy personnel was ongoing challenge
Most of wildlife researches were donor's drive	Proper time frame

Source: Field data, 2018

## **CHAPTER FIVE**

### **DISCUSSION**

#### **5.0 Introduction**

This chapter presents the discussion of the findings that were obtained through interviews, questionnaires and documentary reviews. The discussion was done basing on the study objectives, research questions, and review of earlier studies. The purpose was to find out how the policy makers utilized scientific outputs produced by TAFORI and TAWIRI, and why sometimes they failed to integrate the research results as potential inputs for policy making process.

#### **5.1 Respondents' profile**

In the MNRT headquarter, the total numbers of staffs were 217 out of 42% were male and 58% were female approximately. However, in this study 57.5% of representatives were male, while female occupied 42.5%. Thus male representatives were well equipped compare to female representatives. Along this, the representatives of staff affiliations seemed to be balanced in some professions such as Human Resources, there were 2 male and 2 female participants; Policy experts there were 3 male and 3 female involved. While in the affiliation like Forest expert, Beekeeping and Wildlife number of male was a little bit higher than female. Moreover, majority of representatives had bachelor degree, other master degree. Generally, the respondents possessed qualities that could help researcher to achieve the study objectives.

#### **5.2 Utilization of scientific findings for policy formulation**

Based on the findings, it was evident that the Research and Development institutes conducted scientific research upon the availability of budget, this means that if the budgeted funds were not received on time, the research institutions won't be able to finance research project by themselves. Moreover, not all scientific findings produced by research institutes were disseminated to the MNRT; the research institutes submitted the research report(s) to funder of the research, so it depends who financed the research

activities. Furthermore, the common forms of submitting scientific findings to the Ministry were main research reports and research briefs; on the other hand, the institutes didn't produce policy briefs, the policy brief are highly regarded by policy-makers who see them as a key input to decision-making processes. Frankly, the interface of disseminating research findings was two ways interface (research institute and government); the public has been excluded as it is rare to see R&D institutes presented their scientific findings in the media.

Despite of research reports presented to the policy makers, the utilization of those findings for policy decision was not adequate. The reason was that, the policy agenda in the country was the product of party manifesto, rather than scientific investigation.

The findings of this study differ from those presented by McCaskey and Lewis (2007), and Carlos M. (2016), who found that: little utilization of scientific findings was caused by communication gap between researchers and health decision makers. Communication platform for research findings was inadequate, technical language which embedded too much statistical in scientific reports. While Stone et al (2001) saw that, little utilization of scientific findings caused by manpower capacity; developing countries in Tanzania lacked both in house research capacity and administrative personnel whose skills to utilize research findings. The capacity of bureaucracies to absorb, interpret and synthesize research findings was perceived to be low.

### **5.3 Challenges in the utilization of scientific results**

From the findings, it has seen that policy makers and research scientists were working interdependently; that means that the policy makers depend on scientific findings in order to come up with relevant policy that address social-economic and/or political problems. Meanwhile, the research scientists depend on policy issues to be researched for. Therefore, the institutes had better coordinated in terms of financial support, working facilities, and scientific results dissemination.

Despite of interdepartmental co-operation between policy makers and researchers, the policy makers were unable to uptake research findings when they comes for decision making, specifically about how research findings have impact on policy, and about how policies are incorporated from scientific ideas and reports. Additionally, there were internal and external forces that made policy makers fail to utilize scientific findings for policy formulation. Not only public policy were made based on the political will whereby politicians dominated the wholly process of policy life cycle, but also unfair distribution of research findings within the Ministry was seen as another factor that contributed to the little utilization of research findings among the policy makers. For this reason, we sometimes cannot expect to have a policy which was driven from scientific outputs, as policy makers themselves were reluctantly to share the scientific finding.

On another hand, the findings of this study were closely related to the findings demonstrated by Vas (2015) who found out that, factors contributed to the little utilization of scientific outputs were associated with ineffective human resources plan. He revealed: Civil servants who were tasked with the analysis of policy problems operated with complex bureaucratic structures, and often geared toward impressing their political matters; policy makers were generally working under time pressure and often require quick results to address policy issues; thus they become unable to comprehend research evidence and technical issues which emerge as outputs from the research.

Whereas, the findings from the current study hold opposing views from the research findings presented by Campbell and Fulford (2009) and Almeidd and Báscolo (2006), their studies found out that, the reasons of failure to integrate scientific findings between researcher and policy decision makers were ineffective communication, hence the knowledge produced by research institutes were not properly dissemination. Therefore, in order to uptake scientific results; the platforms like symposiums, seminars, workshops and conferences should pave the way as major means of interface, and sharing of the findings among the policy stakeholders.

#### **5.4 General discussion of the findings**

The study identified that, scientific outputs disseminated in the MNRT were not fully utilized, although there were some action plans implemented by the Ministry as the fruits from scientific results. For example wildlife management plans which involved wild animals like elephants, rhinos and chimpanzees. Thus, utilization of scientific results by policy makers motivates the formulation of effective policies and plans for survival of both fauna and flora. The little utilization of scientific findings, which were associated with inequitable sharing of scientific products throughout the office, competence of public officials to take up, and synthesize research results, as well as pressure from politicians, and time limited were outlined as factors that made policy makers failed to incorporate research results for public policy development.

Furthermore, the findings presented in this study conform with the theories employed in this study; the two community's theory for stance; viewed that differences between the two affiliations (scientist and policy-makers) were associated with a contrasting list of supply-side and demand-side problems; Hence, it was seen that researchers achieved to conduct research and communicate their findings to policy makers. But the policy makers failed to distribute the findings across the offices, and the policy issues were powered by politicians. Therefore, policy makers have few incentives to use scientific evidence.

In addition, the findings went parallel with the Evidence-based decision making theory which state that EBP involved four groups of actors: decision-makers; research funders; researchers; and knowledge purveyors. Hence the research institutes conducted research depends upon the access of research funds, and they supply the findings to the policy makers. But the problem was that, the policy decision makers failed to incorporate those findings as inputs for policy formulation in the Ministry. Therefore, this study acknowledged that evidenced based policy was not yet embraced in the Ministry, although the attracted affairs to the policy makers was to reach a point whereby governments' decisions would be initiated, implemented and evaluated through scientific investigation.

## **CHAPTER SIX**

### **SUMMARY, CONCLUSION, RECOMMENDATIONS AND POLICY IMPLICATIONS**

#### **6.0 Introduction**

This is the last chapter that presents the summary of the findings, draws conclusion and makes recommendations on the findings, proposes area for further study, as well as policy implications.

#### **6.1 Summary of the study**

It was found out that, the Research and Development institutes (TAFORI and TAWIRI) produced scientific findings, the reports of the findings were presented to the MNRT through technical reports, research summaries, annually report, other form like scientific newsletters, journals were placed in the institute's website in most cases. The dissemination techniques used by research institutes to deliver their findings were internal-board meeting, conferences proceeding and seminars.

On the other hand, the study revealed that utilization of scientific findings were not given priorities as the reliable source in the policy making process. This circumstance was contributed by: politicians from ruling party who enforced policy agenda without having scientific evidence that would support their desire. Sometimes the decision makers didn't share the scientific reports to other member of staffs, and knowledge gap among the bureaucratic on understanding, interpreting and up taking scientific findings into policy formulation process.

## **6.2 Conclusion of the study**

The policy decision makers in the MNRT accepted the notion that researches are the reliable source which could help the government officials or decision makers to come up with sound policies that address public problems. Despite of the research institutes (TAFORI and TAWIRI) submitted their research reports to the MNRT, yet application of scientific findings in policy formulation remains doubtful in the policy arena. Most of scientific findings were not used as result the objectives of conducting scientific investigation was unrealistic. The policy makers in the Ministry seemed that, they are unable to assimilate research results for policy formulation. Thus why, now we have reached a point that, policy makers fail to uses scientific evidence. The fact was that, the knowledge gap on how policy personnel should incorporate research findings into policy formulation is where the problem risen. The reasons of failure were included: scientific finding were not sharing across the offices, influence from politicians, time limited, and human resources capacity in interpret the findings and utilize as importance inputs in the policy formulation within the Ministry.

## **6.3 Recommendations of the study**

From the study findings, discussions and conclusions the researcher proposes the following recommendations of the study as per research objectives.

### **6.3.1 Utilization of scientific outputs**

The findings suggested that the government via MNRT should make sure adequate funds are allocated to research activities including research projects, and dissemination of the findings through workshops, conferences, congresses and media. Along this, the government should make and implement a human resource development programme focusing on short, medium and long-term; the programme would increase policy personnel capacity and assist them on incorporate scientific findings for policy development process in public sectors.

### **6.3.2 Challenges in reaching evidenced based policy**

In order to accomplish the need of having evidence based policies in public organizations. The Ministry should build knowledge competence to the policy personnel, so that they could identify the policy priorities setting which needed to be addressed basing on scientific research findings. Likewise, the politicians should change their philosophy and see that its scientific results that could assist them and the government to make pleasurable policies, that will address social-economic problems in the country. Therefore, the Ministry should encourage triangle interface, loyalty and network between research scientist, policy makers and public in general.

### **6.4 Area for further study**

This study was focused on utilization of scientific outputs in policy formulation within the Ministry of Natural Resources and Tourism in Tanzania, thus the findings of this study were limited under the scope of the study. Hence, the same study can be carried in other public or private organizations in Tanzania and the rest part, so that we shall understand and compare how the public sectors or private sectors utilize the scientific outputs whenever they come up for policies making decision.

### **6.5 Policy Implications**

The government should address and develop the rational strategies and action plans on developing human resources capacity, there should be provision of refresher course and executive development to civil servants and bureaucratic so that they could wider understand the necessity of applying scientific findings for better public policy formulation in the country.

The government should formulate inclusive policy whereby all policy stakeholders will participate in developing the policy. Hence, to attain this goal, the government through its MDAs should involve research scientists in the board of decision making, as well as policy experts should consult with researchers as important stakeholders in wholly process of developing public policy; from problem identification to the policy evaluation

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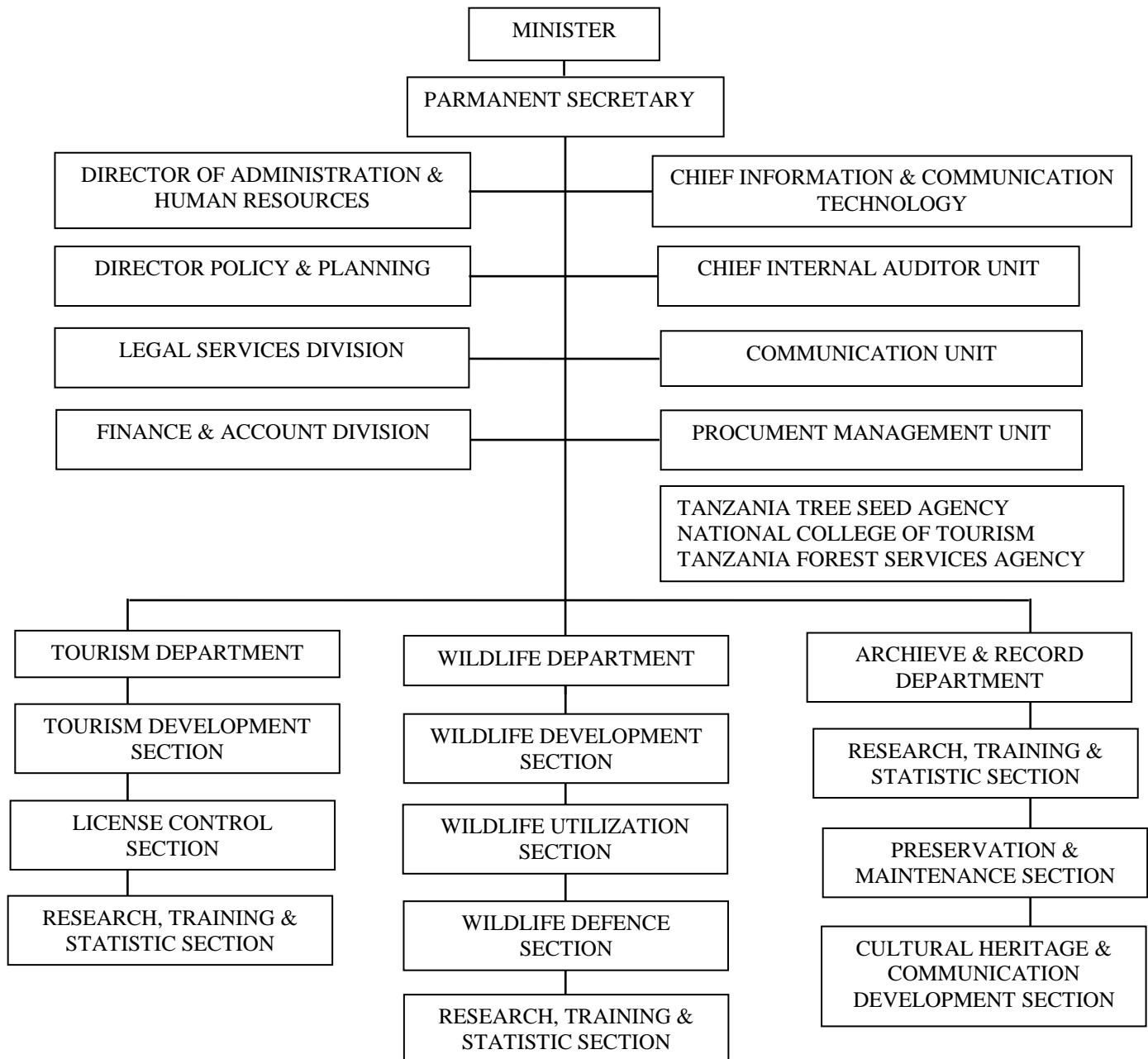
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# **APPENDICES**

**APPENDIX I**

**ORGANOGRAM OF THE MINISTRY OF NATURAL RESOURCES AND  
TOURISM**



AN INTERVIEW GUIDE

Section (A) Personal details

S/N	INFORMATION	ANSWER
1	Gender	
2	Educational level	
3	Area of specialization (Profession)	
4	Working position	
5	Length of service (year)	

Section (B) Interview main questions

- 1) In the last 10 years, have you reviewed or formulate any policy in the Ministry? If yes, please mention the reviewed/formulated policy.
- 2) What are your key stakeholders involving when review or formulate the policies?
- 3) Is there any interaction between the Ministry and the research institutions under this Ministry? If yes explain how
- 4) In your view, what roles do the policy-makers have in research initiation, implementation, and dissemination of the findings
- 5) How do you see the capacity of the research institutions (TAFORI and TAWIRI) in undertaking research?
- 6) How do you see the capacity of the research institutions in communicating their research results to the policy makers?
- 7) Do you see any relevance of the research in policy decisions? Please explain
- 8) How do you see the capacity of the policy makers in utilize the scientific findings?
- 9) In your experience what do you think are the challenges that make some police makers fail to use research results as an input in public policy formulation?
- 10) In your view what do you think are the possible contributions of formulating evidenced based policies in a country like Tanzania
- 11) Please suggest ways of strengthening the influence of research in the policy making process in Tanzania.

## APPENDIX III

### A SAMPLE QUESTIONNAIRE

Dear respondent, my name is Uledi Khamis Hamad a student from Mzumbe University (Main campus) Morogoro, Tanzania pursue Master of Research and Public Policy (MRPP). Currently, I am conducting an academic research as part of requirement for the fulfillment of master programme, with the title *“The Utilization of Scientific outputs in the policy formulation in the Ministry of Natural Resources and Tourism, Tanzania”*.

Since you are working in Ministry of Natural Resources and Tourism (MNRT), I have identified you as one of the key respondent in this study. Therefore, we kindly request you to respond all questions posed in this questionnaire as much transparent as possible. Moreover, we assured that, your information will be treated strictly confidential and for academic purpose only. Please take it in mind, when this process is over and my Thesis comes out I will come to share my findings with you. Thus, we have much expectation that the research findings will be useful in providing information and fill the gap of knowledge on how the MNRT utilizes previous scientific findings made by Tanzania Forestry Research Institute (TAFORI) and Tanzania Wildlife Research Institute (TAWIRI) as the basic input in the Ministry policy formulation.

Thank you



Uledi KH. Hamad

Mobile No. +255 675 883 104

E-mail: uledihamadi@gmail.com

Section (A) Please fills your personal details to the answer Columns

S/N	INFORMATION	ANSWER
1	Gender	
2	Educational level	
3	Area of specialization (Profession)	
4	Working position	
5	Length of service (year)	

Section (B) Please use the scale below to evaluate the following statements

**SURVEY SCALE:**

1= Strongly Disagree: 2 = Disagree: 3 = Neutral: 4 = Agree: 5 = Strongly Agree

S/N	Information	Answer
1	Research is relevant input in policy decisions	
2	The MNRT relies on scientific evidence when make its policy decisions	
3	Policy makers in the MNRT are competent in using scientific results to inform policy decision	
4	The policies made or reviewed by MNRT are well supported by scientific researches	
5	The MNRT is interacting with TAFORI when its formulate or review the policies related to forest	
6	The TAFORI is competent to undertaking research that will be used as input for developing policy by the MNRT	
7	The TAFORI is disseminating its research results to policy makers in the MNRT	
8	The MNRT is interacting with TAWIRI when its formulate or review the policies related to wildlife development	
9	The TAWIRI is competent to undertaking research that will be used as input for developing policy by the MNRT	
10	The TAWIRI is disseminating its research results to policy makers in the MNRT	

### Section (C) Scientific Findings Publication

Research reports produced by TAWIRI/TAFORI and submitted to the Ministry (2010 - 2015)

Year	Scientific problem	TAWIRI	TAFORI
2010			
2011			
2012			
2013			
2014			
2015			

Conference held by TAWIRI/TAFORI and the report of the conference submitted to MNRT (2010 - 2015)

Year	Conference theme	Product output	Remarks
2010			
2011			
2012			
2013			
2014			
2015			

Scientific report produced by TAWIRI and presented in the Ministry Technical Committee (2010 - 2015)

Year	Year Meeting agenda	Product output	Remarks
2010			
2011			
2012			
2013			
2014			
2015			

Organization development issues associated from scientific reports produced by TAWIRI (2010 - 2015)

Year	Scientific findings/report	Development issue/change in the Ministry
2010		
2011		
2012		
2013		
2014		
2015		

Possible challenges that policy official from the MNRT encounter, as result inability to use scientific results produced by TAWIRI as inputs for policy making process

Institutional challenges in the Ministry	Human resource capacity in terms of quality

In your view what do you think are the opportunities (merits) of formulate evidenced policies in a country like Tanzania

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**Thank you for your cooperation**