



# STIPRO'S

## Five Year (2014/15 – 2018/19) Strategic Plan



**Pushing the Boundaries of Knowledge for Evidence Based Decisions**

**March, 2015**



## **STIPRO's Five Year (2014/15 – 2018/19) Strategic Plan**

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## **LIST OF ABBREVIATIONS**

ACBF	-	African Capacity Building Foundation
ACODE	-	Advocate Coalition for Development and Environment
ACTS	-	African Center for Technology Studies
ATPS	-	African Technology Policy Studies
CoET	-	College of Engineering and Technology
CSOs	-	Civil Society Organizations
COSTECH	-	Commission for Science and Technology
DANIDA	-	Danish International Development Agency
DfID	-	Department for International Development
EAC	-	East African Community
ESRF	-	Economic and Social Research Foundation
FDI	-	Foreign Direct Investment
FINNIDA	-	Finnish International Development Agency
GDP	-	Growth Domestic Product
IDRC	-	International Development Research Centre
IDS	-	Institute of Development Studies
ILO	-	International Labour Organization
KIPPRA	-	Kenya Institute for Public Policy Research and Analysis
MDAs	-	Ministries, Departments and Agencies
MDGs	-	Millennium Development Goals
NORAD	-	Norwegian Agency for Development Cooperation
R&D	-	Research and Development
REPOA	-	Research on Poverty Alleviation
SAGCOT	-	Southern Agricultural Growth Corridor of Tanzania
SIDA	-	Swedish International Development Agency
SP	-	Strategic Plan
ST&I	-	Science, Technology and Innovation
STIPRO	-	Science, Technology and Innovation Policy Research Organization

TASJA	-	Tanzania Science Journalists Association
TCCIA	-	Tanzania Chamber of Commerce, Industry and Agriculture
CTI	-	Confederation of Tanzanian Industries
TPSF	-	Tanzania Private Sector Foundation
TTI	-	Think Tank Initiative
UNCTAD	-	United Nations Conference on Trade and Development
UNESCO	-	United Nations Educational, Scientific and Cultural Organization
UNIDO	-	United Nation Industrial Development Organization
URT	-	United Republic of Tanzania
USAID	-	United States Agency for International Development

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## FROM THE BOARD

On behalf of the Board of Directors and Management, it is my honour to present to you the STIPRO's Strategic Plan 2015-2019, a blue print that will guide the activities of the organization in the next five years. This plan builds on the achievements of the past five years and is designed to take STIPRO, as an organization devoted to science, technology and innovation policy research, to the next level of performance. In this connection, may I take the opportunity to convey special thanks to STIPRO's management, staff members, members of the Board of Directors, development partners-Think Tank Initiative in particular, for their efforts in ensuring that the vision and mission of the organization are accomplished. Together they are instrumental in whatever achievements recorded so far and the expectations envisaged under the current plan.

However, it must be pointed out that the past five years have not been so easy for STIPRO as an organization specializing in policy-oriented research in the field of science, technology and innovation. This is a relatively new field of research, and as such, STIPRO has been operating at a certain level of obscurity from the general public. However, we have witnessed sustained efforts by STIPRO to raise public awareness on the role of science, technology and innovation for development and the importance of policy research in the process; and have achieved impressive milestones in informing STI policies in just five years. This has been possible through support received from key stakeholders in the public and private sectors, nongovernmental organizations, think tanks and development partners. STIPRO's Board, management and staff very much value and appreciate their support.

The above achievements notwithstanding, STIPRO is faced with a number of challenges in performing its core functions of research and policy engagement as we will note in this document. These have tended to affect its efficiency and effectiveness in contributing to evidence-based policy decisions. On the one hand, STIPRO is faced with acute shortage of financial resources to undertake researches and disseminate research findings. Dependency on few available sources, especially the Think Tank Initiative, is a major threat that STIPRO is yet to successfully deal with. On the other hand, underdeveloped human resource base in this area in the country is a serious constraint STIPRO has to deal with. Therefore, concerted efforts will be needed under the plan to address these challenges. As we strive to make STIPRO a centre of excellence and reference point on ST&I issues, building human resource base is central to its sustainability. **The message from the Board: It can be done, let us play our part!**

A handwritten signature in black ink, appearing to read 'A. A. Komba'.

Dr. A. A. Komba  
Board Chairman

Dar es Salaam

March 2015



## MESSAGE FROM THE EXECUTIVE DIRECTOR

*“He who fails to adopt new remedies must expect new evils, for time is the greatest innovator” – Francis Bacon*

Africa, Tanzania inclusive, is following far behind the rest of the world in terms of innovation capabilities which is a prime mover of social and economic development. This is evidenced by a number of evils that we witness every day – on top of the list being poverty. Africa, specifically Tanzania, therefore needs a new remedy to redress the situation. The major source of persistent poverty is poor capability in technology and innovation. According to Lee and Mathews (2013), the difference in income levels across countries comes basically from differences in capabilities in many aspects, including the capability to produce and sell internationally competitive products for a prolonged period of time; which means technology and innovation capabilities are at the centre of wellbeing of nations.

Fortunately, Tanzania has recognized the central role of science, technology and innovation in development - at least in blue print. This recognition can be discerned from development plans and strategies. What needs to be done now is to take this recognition to another level by crafting evidence based policies with implementation strategies. However, this cannot be made possible if we do not have at hand context based evidence. For instance, we cannot put in place a policy that can improve innovativeness of firms and farms if we do not know what the companies are struggling with and/or succeeding at; we cannot put in place strategies to improve knowledge and technology transfer - either to the farmers or industrial firms, if we do not know what is happening in practice in the very context in terms of best practices and challenges. And we cannot know all these without in-depth and high quality research because innovation related issues are complex, multi-dimensional and dynamic, requiring constant follow up.

Unfortunately for most African countries, Tanzania inclusive, expertise in this kind of research is very scarce, and this forms the background to the initiation of the Science, Technology and Innovation Policy Research Organization (STIPRO), which is an attempt to put in place yet another important *new remedy* in the Tanzanian ST&I system that attempts to produce local evidence and statistics –through systematic research – to inform the ST&I policies and strategies as well as to support capacity building of human resources in the area.

More information on the rationale for the existence of STIPRO and for this Strategic Plan is explained in the introductory part. Get convinced and then follow us through the rest of the document.

Dr. Bitrina Diyamett

Executive Director

Dar es Salaam

February 2015

## **1.0 Introduction and background**

The major objective of this introductory section is to put in black and white why an organization like STIPRO is crucial if Tanzania is to achieve the development vision and goals that she has put in place. To be able to do this, the section briefly reviews the Tanzania social and economic environment, development plans, strategies and policies put in place to reduce poverty and achieve vision 2025, where the role to be played by science, technology and innovation have been emphasized. Against this background, the crucial role of STIPRO as an organization for policy research in science, technology and innovation has been clearly stated. The section also includes statements on STIPRO's vision and mission.

### **1.1 Socio-economic Environment**

Tanzania like many other developing countries - Sub-Saharan African countries in particular - is faced with numerous developmental challenges. During the early years of independence the political leadership identified poverty, ignorance and diseases as the key national enemies. Fifty years of independence have witnessed concerted efforts to address these challenges with some mixed results: Tanzania continues to belong to a group of least developed countries having per capita income of less than 1,000 USD (World Bank, 2011). Following the economic crises of the late 1970s and the 1980s, the struggle against worst forms of poverty has continued to dominate national development plans, strategies and policies. The economic and political reforms during the second half of the 1980s and the 1990s paved the way for radical transformations of Tanzania's socio-economic environment – moving away from central planning to privatization and market led economy. This, to some extent, has helped to stem the tide of social and economic decline.

The recent development statistics show that Tanzania has achieved impressive economic annual growth rates averaging 6-7 percent over the past ten years or so (URT, 2011a). However, the major problem is that this is not reflected in sustained poverty reduction. Tanzania has witnessed only marginal reduction in poverty; for instance poverty fell only by 2.1%, from 35.7% in 2000/2001 to 33.6% in 2007, with further slight reduction to 28.2% in 2012 (World Bank 2009; AfDB, OECD, UNDP 2015)). In addition the purchasing power and household expenditure as percentage of GDP has been in decline over the whole period of sustained growth (URT, 2011b; 2012). There is no doubt that something is a miss, and the situation calls for more focus on inclusive and sustainable growth. While reasons for discrepancy between growth and sustainable poverty alleviation are numerous, experiences elsewhere have shown that this, to a large extent, depends on a number of national capabilities; and on top and most basic, is technology and innovation capabilities. Fortunately, the Government of Tanzania has realized the importance of these capabilities as indicated in its numerous development plans and strategies briefly revisited here.

### **1.2 Development plans and policy context**

As mentioned earlier, the failure of the socialist policies that Tanzania has been following since independence led to the restructuring process that paved the way for more private investments and free market economy. Currently Tanzania is implementing a number of plans, strategies and policies under such environment; few are worth mentioning:

The Development Vision 2025, which was put in place in the year 2000 envisages building a strong dynamic, resilient and competitive national economy for Tanzania to become a middle-income country and eradicating poverty (URT, 2000). It emphasizes, among other things, development of competitive and sustainable knowledge-based economy; an economy which is *skill-based, knowledge and innovation driven*, competitive and sustainable, and thus capable of generating and sustaining dynamic development (emphasis added).

The National Strategy for Growth and Reduction of Poverty (NSGRP), on the other hand – as the name suggests – focuses at the achievement of sustained economic growth that is inclusive and contributes to poverty reduction (URT, 2005). Besides those two documents, there are the Five Year Development Plans, which are short term measures/actions to operationalize the Vision 2025. It is important to note that Tanzania recognizes the importance of ST&I in all these strategies. For instance, in Vision 2025 it is explicitly stated that the said transformation will only be possible if it is buttressed by a strong national science, technology and innovation system.

However, it must be borne in mind that such recognition of the role of ST&I in development is not recent, but dates back to the immediate post independence period. Having inherited a weak science and technology base from the colonial masters - and as part of capacity building in this area - investment in training and R&D institutions became the first order of business during early years of independence. The first national science and technology policy was put in place in 1986. The policy was revised in 1996 in order to accommodate the fast changing socio-economic environment, including the enhanced role of the private sector. As evidenced by persistent poverty levels, such policies have had minimal impact in national development. In addition, looking at the state of science, technology and innovation in the country, one realizes that the situation is not encouraging: Numerous studies have shown that in most productive sectors the levels of technological capabilities are still quite low (see for instance, Diyamett et al., 2011). In addition, the Global Competitiveness Report, 2012-2013 ranks Tanzania very low in terms of technology readiness and innovation factors (Schwab, 2013). Recently, there have been efforts to yet review the policy with the “innovation” component added, to read ‘national science, technology and innovation policy’. However, these efforts notwithstanding, two major problems still linger: ST&I policies remain in blue prints, with little effort towards implementation; and most policy objectives are not informed by underlying locally context based problems and possible solutions, but rather copying of what worked in other contexts, especially in the developed countries.

### **1.3 Rationale for existence of STIPRO**

First and foremost, it is important to reiterate here the importance of policies for science, technology and innovation. For poor countries of the South, Sub-Saharan Africa in particular, there is pervasive market failures for innovation, and therefore the need for facilitating and guiding innovation through policy is deemed crucial. Effective policies that promote technological progress and innovation in turn require a good understanding of how technological change occurs in different sectors of national economies. This is a subject matter of policy research in ST&I. Country specific analyses are important for innovation as innovation is often context specific. Again, this is especially important for least developed countries because existing theories and practices have been developed using empirical observations exclusively made in developed countries. The wholesale use of these theories and best practices in poor

countries will only lead to faulty policy prescriptions – and this is already happening as shown in ST&I policies of most African countries: for most of these countries science, technology and innovation policies mean Research and Development Policies in line with the linear model of innovation where science is considered an endless frontier. For this reason African countries, Tanzania inclusive, require organizations that can competently carry out policy research in science, technology and innovation so as to continuously inform policies.

Some of the fundamental questions that can be raised and answered by this kind of policy research include how the nation’s scientific and technological resources can be optimally harnessed in solving development problems that include poverty eradication. Specific examples include how the foreign direct investments (FDI) and trade can be optimally harnessed for building technological capabilities of local firms. Policy research in science and technology also directs the activities of research and development (R&D) organizations – those in natural and engineering sciences - that to a large extent carry out research to produce new and improved products and processes, both tangible and intangible. Research policy - including issues relating to knowledge and technology transfer - is the responsibility of policy research organizations; others call this kind of research “science of science policy”. Given the pervasive market and systems failures in knowledge transfer in most poor countries, such kind of researches that guide knowledge transfer policies and strategies - both at the macro (national) and meso (institutional) levels, are indispensable for successful knowledge transfer. In general, ST&I policy research provides policy options for better performance of the national systems of innovation for inclusive development.

Unfortunately, generating the right kind of information and/or knowledge on the proper functioning of the national systems of innovation is a daunting task facing many developing countries, African countries in particular. For most of these countries, capacities for ST&I policy research are extremely scarce, and hence the need for capacity building. It is against this background that the Science, Technology and Innovation Policy Research Organization (STIPRO) was established as an independent, not for profit Think Tank with the major goal of carrying out policy-oriented research and contributing to building capacity in this crucial area of research for Tanzania.

#### **1.4 Vision**

A world class *centres of excellence and a reference point* for science, technology and innovation policy research for evidence based decisions in development in Tanzania and beyond.

#### **1.5 Mission**

Guided by its vision, STIPRO’s mission entails the following:

- ❖ To carryout policy research that inform ST&I policies and decisions
- ❖ To undertake capacity building for conducting ST&I policy research
- ❖ To raise public awareness on the role of ST&I for socio-economic development, and of ST&I policy research for evidence-based decisions

## 1.6 Core Values

In walking our mission and realizing our vision, we are guided by the following core values:

- ❖ Continuous learning, creativity and innovation
- ❖ Professionalism
- ❖ Transparency and honesty
- ❖ Inclusiveness
- ❖ Timeliness

The rest of the document consists of the following sections: *Section Two* presents a brief overview of the STIPRO past activities and achievements, and objectives of this strategic plan; *Section Three* presents a STIPRO Results Framework, while *Section Four* is on STIPRO Environmental Scan, *Section Five* is on Stakeholders Analysis; *Section Six* describes major STIPRO Programs of Activities, and finally *Section Seven* is on major Activities and Outputs.

## 2.0 Objectives for the 2014-2019 Strategic Plan

The main objective of this section is to present the objectives of the 2014-2019 Strategic Plan, but before that it will be quite in order to highlight some of achievements of 2009-2014 Strategic Plan upon which the current plan builds on.

### 2.1 Building on record of past achievements

The current Strategic Plan is built on the successes of the previous plan, 2009 – 20014, which has produced remarkable achievements. Few are worth mentioning here. First, there has been an increase in human resource capacity from 1 to 6 in-house researchers. Most of these researchers are the work of STIPRO itself in collaboration with faculties at universities in Tanzania. STIPRO has been supporting Master's degree dissertations focusing on ST&I issues and those who performed above average were employed by STIPRO.



*Executive Director with masters degrees graduates that were supported by STIPRO*

Secondly, the organization was able to carry out a number of research projects in the areas of agriculture, manufacturing and health. Some of these research projects have been carried out in collaboration with Universities and Think Tanks within and outside Tanzania. True to its spirit of enhancing evidence-based policy, the research outputs have been basis for sustained policy advocacy and subsequent involvement of the organization in a number of national task forces related to ST&I policy, including the review of the national systems of innovation. Some outcomes from STIPRO research projects were found to be very useful in the review process whose outputs are currently being used to design the new national ST&I policy. Other contributions include the preparation of the Tanzanian industrial competitiveness report, which also used some STIPRO research outputs; and participation in national task force on the Global Smart Partnership Dialogue2013, which was hosted by the President of United Republic under the theme: “Leveraging Technology for Africa’s Social and Economic Transformation”.

In its effort to make sure that research outcomes are widely distributed and discussed, STIPRO has forged a very close relationship with the Tanzania Science Journalist Association (TASJA). The two organizations have just concluded a joint research project with the main objective of looking for reasons for under-reporting of ST&I issues by the Tanzanian media houses. The outcome of the research has formed the basis for some of the STIPRO’s activities in policy linkage and communication for the next five years. Activities of STIPRO have also gone beyond the national borders. One remarkable contribution in this regard is its involvement in the post-2015 development agenda through the “Southern Voice” where two working papers and one blog on the role of technology and innovation in sustainable development were contributed and hopefully contributed to the mainstreaming of ST&I issues in the post-2015 development agenda.

Thirdly, STIPRO facilitated the initiation of the African Research Network on the Economics of Learning, Innovation and Competence Building Systems (*Africalics*) that was launched during the International Workshop on Innovation and Economic Development held in Dar es Salaam in 2012 and hosted by STIPRO. As part of capacity building efforts, STIPRO has been collaborating with the Institute of Development Studies (IDS) and College of Engineering and Technology (CoET), both at University of Dar es Salaam. Collaboration involved supporting research and writing of Master of Arts dissertations and in the development of course on Innovation and Development. All these have been helpful in raising STIPRO’s profile and making inroads into policy arena and academia in Tanzania and beyond. STIPRO, in collaboration with Africalics and the universities in Tanzania and Kenya is currently involved in crafting a module on innovation and development to be included in existing Master’s degrees at these universities. The long term plan is to develop full Masters and PhD courses on innovation and development.



To further strengthen its research quality, STIPRO has put in place a “STIPRO Fellows Program” that involves a number of well-known scholars on Innovation and Development worldwide. The major objective of the program is to mentor STIPRO’s young researchers and enhance strong linkages with experts in the field elsewhere in the world.



*"International Scholars who are STIPRO fellows with some of the STIPRO staff"*

## **2.2 Objectives for 2014-2019 Strategic Plan**

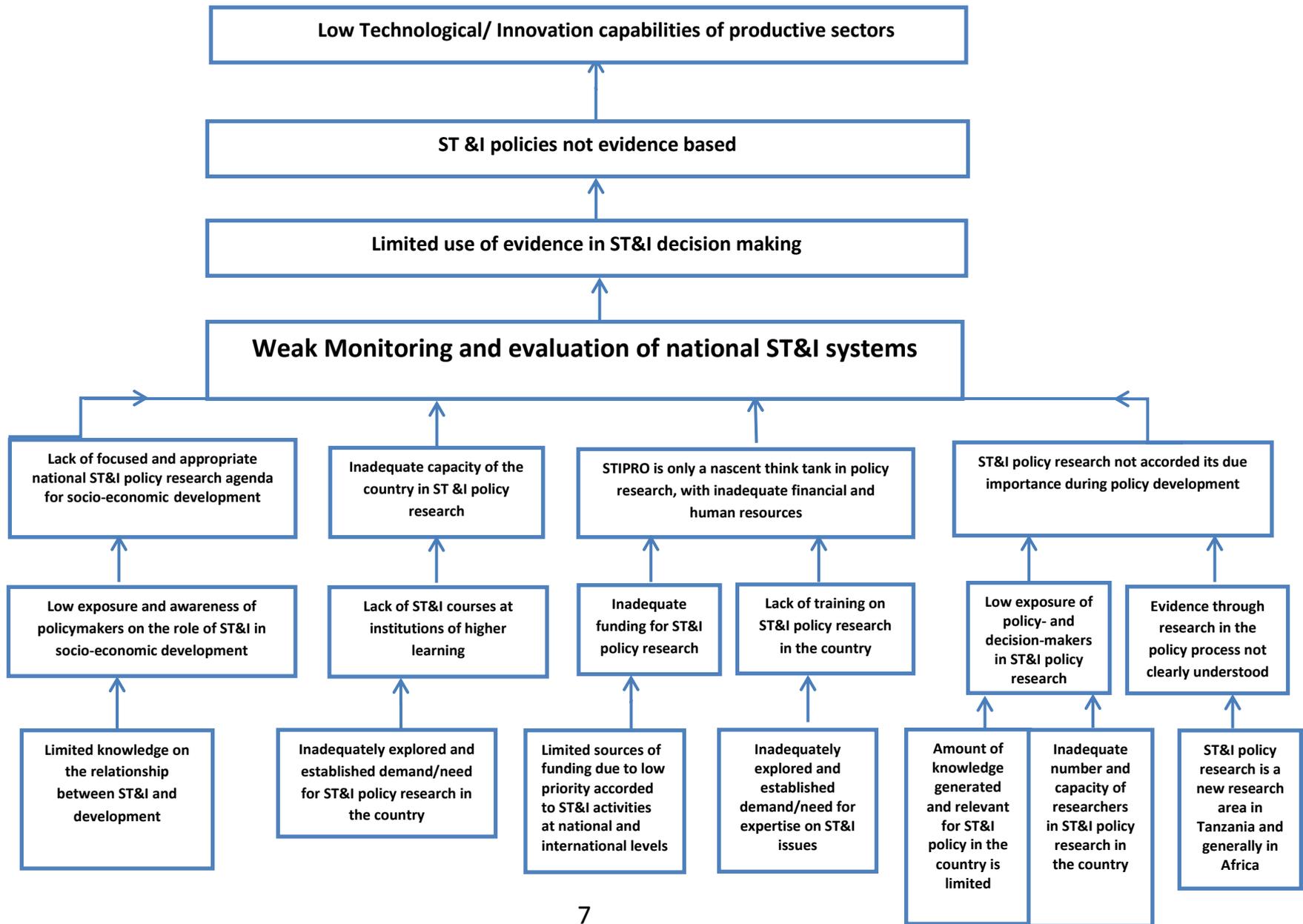
Based on the achievements of the previous plan the overall goal for this plan is to continue carrying out policy research in the field of science, technology and innovation in Tanzania, with strong link to policy. Given the scarce human resources in the area, embedded in policy research and policy linkage, is need for capacity building in these areas. The capacity building aspect of this objective is to have a critical mass of ST&I policy researchers in Tanzania that will assist in designing, implementing, monitoring and evaluating evidence-based ST&I decisions, including

policies. Enhanced capacity to continuously monitor and evaluate the national systems of innovation will ensure sustained production, dissemination and use of knowledge for competitive national economy, as well as for equitable and sustainable development. Under the plan the focus will be on the following broad objectives:

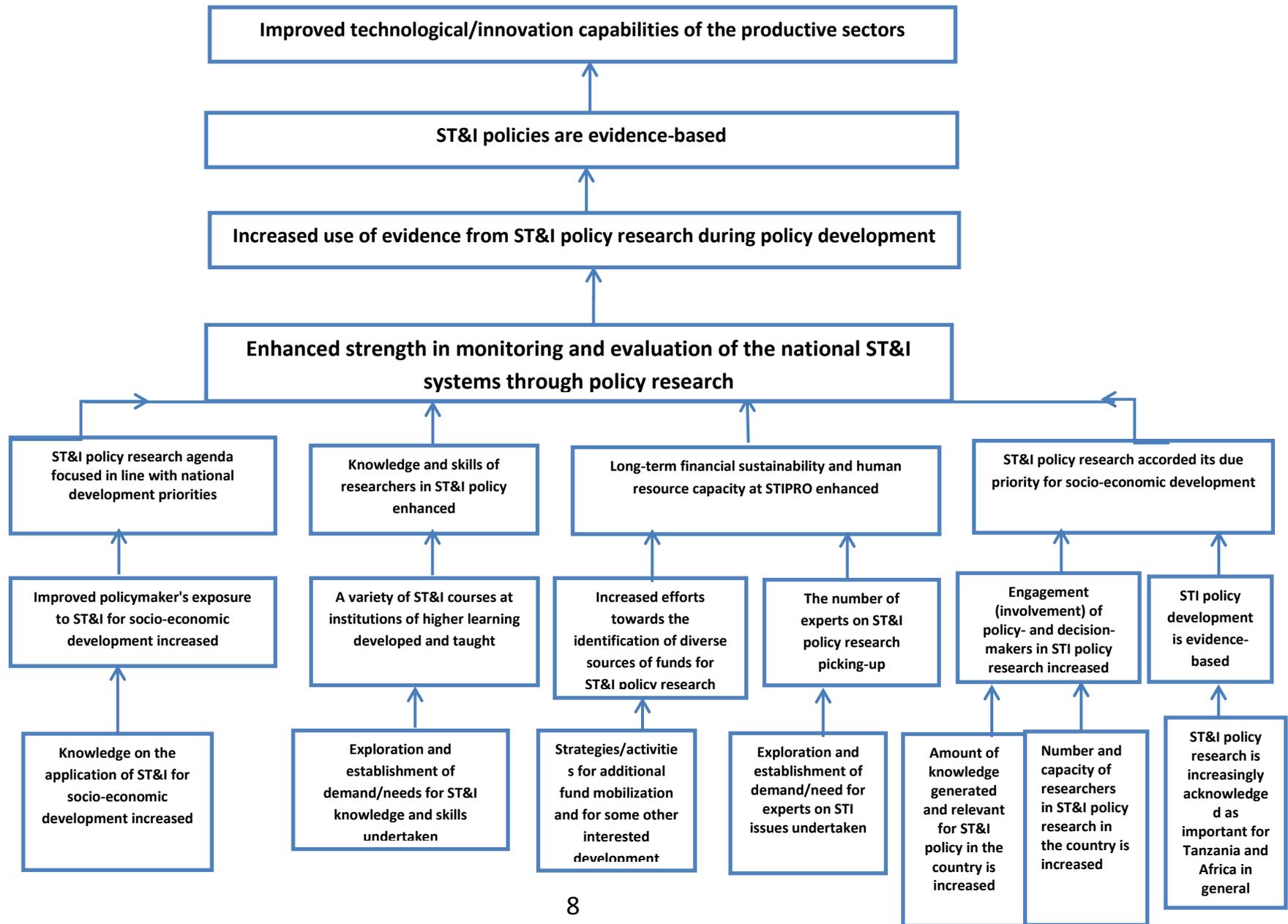
- ❖ To increase the quantity and quality of human resources at STIPRO;
- ❖ To increase the volume and quality of knowledge created by STIPRO that will support policy process and other decisions;
- ❖ To achieve a wider dissemination of knowledge created by STIPRO through effective engagement with stakeholders;
- ❖ To improve the organizational performance of STIPRO through mobilization and efficient use of resources.

The above objectives are operationalised in a problem and objective tree as shown in Figures 1 and 2 below, respectively.

**Figure 1: ST&I Problem Tree**



**Figure 2: ST&I Objective Tree**



### 3.0 STIPRO Results Framework

From the desirable future condition depicted in Fig. 2 above, as well as the stakeholder analysis as portrayed in Table 1, the results framework has been generated, which provides a summary of the impact of STIPRO to be realized at the end of the intervention period. The results framework in Table 1 provides three levels of STIPRO objectives, namely;

**The Goal**, which is the highest level objective towards which STIPRO will reasonably contribute to;

**The Purpose** defines the objective to be attained by STIPRO at the end of the intervention period; and

**The Outcomes**, which provide the goods and services that will have to be delivered by STIPRO in the course of implementing the intervention process. Five outcomes were identified, and a combination of all of them will be sufficient to attain the purpose.

In addition, **Objectively Verifiable Indicators**, signify the evidence or proof as to what extent the purpose and outcomes have been attained and therefore, a reflection of the impact of STIPRO's intervention. **The Means of Verification** specify the sources of information from which the impact of STIPRO can be tracked.

The results framework does not require the provision of verifiable indicators for the Goal because the attainment of the Goal is not the sole responsibility of STIPRO as other contributors share the responsibility. In order that the stated indicators qualify to verify the impact of STIPRO at the end of the intervention period, the initial / current status, the so-called benchmark information has to be known. Verifiable indicators with benchmark gaps are clearly marked in the results framework in Table 1 below

Table 1: STIPRO Results Framework

OBJECTIVE	OBJECTIVELY VERIFIABLE INDICATOR	MEANS OF VERIFICATION
<b>GOAL:</b> Social and economic development enhanced as a result of improved use of ST&I	<ul style="list-style-type: none"> <li>▪ Other actors also contribute, and therefore difficult to capture STIPRO's contribution</li> </ul>	
<b>PURPOSE:</b> Evidence-based ST&I policy development effectively facilitated	<ul style="list-style-type: none"> <li>▪ By 2018/2019 a total number of 4 research projects completed by STIPRO annually and communicated to policy makers as compared to current 2</li> </ul>	<ul style="list-style-type: none"> <li>▪ STIPRO annual progress report</li> </ul>
<b>OUTCOME1:</b> Quality research	<ul style="list-style-type: none"> <li>▪ Effective from 2015/2016 at least 2 papers published</li> </ul>	<ul style="list-style-type: none"> <li>▪ STIPRO website, and journals</li> </ul>

OBJECTIVE	OBJECTIVELY VERIFIABLE INDICATOR	MEANS OF VERIFICATION
<b>undertaken</b>	annually by STIPRO researchers in peer reviewed journals in and outside Tanzania as compared to the current publication of 1 paper in 2 years	<ul style="list-style-type: none"> <li>▪ STIPRO annual progress report</li> </ul>
<b>OUTCOME2: Capacity of Researchers enhanced</b>	<ul style="list-style-type: none"> <li>▪ Number of publications in journals within and outside Tanzania from STIPRO increased from 2 on average in 2014/2015 to 5 in 2018/2019</li> <li>▪ Number of competitive ST&amp;I research proposals submitted by STIPRO researchers and funded from within and outside Tanzania increased from 1 in 2014/2015 to 5 in 2018/2019</li> <li>▪ Resource centre at STIPRO premises established</li> <li>▪ Number of enrolment in PhD training 1 in 2014/15 to 2 in 2018/19</li> <li>▪ Masters' dissertations supported per year from 3 in 2014/15 to 6 in 2018/19</li> </ul>	<ul style="list-style-type: none"> <li>▪ STIPRO website, and journals</li> <li>▪ STIPRO annual progress report</li> <li>▪ Presence of a resource centre at STIPRO</li> <li>▪ STIPRO/University report</li> <li>▪ STIPRO annual progress report</li> </ul>
<b>OUTCOME 3: Operational capacity of STIPRO sustainably enhanced</b>	<ul style="list-style-type: none"> <li>▪ By 2018/2019, the level of funding generated from own sources through consultancies and commissioned works by researchers at STIPRO increased from 10% to 30% annually by 2018/19</li> <li>▪ By 2018/2019, 90% of strategic plan activities accomplished successfully by STIPRO staff as scheduled in the AWP&amp;B in all the project sites as compared to 70% in 2014/2015</li> <li>▪ Level and sources of funding increased from one major</li> </ul>	<ul style="list-style-type: none"> <li>▪ STIPRO website/Funders</li> <li>▪ STIPRO annual progress report</li> <li>▪ STIPRO annual financial report</li> </ul>

OBJECTIVE	OBJECTIVELY VERIFIABLE INDICATOR	MEANS OF VERIFICATION
	<p>donor to at least three major donors by 2018/2019</p> <ul style="list-style-type: none"> <li>▪ New staff recruited from 6 researchers and 5 staff in 2014/15 to 10 researchers and 6 administrative staff in 2018/19</li> <li>▪ By 2018/19, attractive and competitive environment to STIPRO staff provided</li> </ul>	<ul style="list-style-type: none"> <li>▪ STIPRO annual technical and financial reports</li> <li>▪ STIRO annual financial report</li> <li>▪ STIPRO technical report</li> </ul>
<p><b>OUTCOME 4: Government perception on the role of ST&amp;I in development enhanced</b></p>	<ul style="list-style-type: none"> <li>▪ Number of ST&amp;I policy consultancies/commissioned work to STIPRO from various stakeholders in and outside Tanzania increased from the current average rate of 1 annually to 3 in 2018/2019</li> <li>▪ Annual financial support to STIPRO from government realized from 0% currently to 10% of all other financial support in 2018/2019</li> <li>▪ Sources of policy briefs increased from 5 research projects in 2014/15 to 10 in 2018/19</li> </ul>	<ul style="list-style-type: none"> <li>▪ STIPRO annual progress report</li> <li>▪ STIPRO annual financial report</li> </ul>
<p><b>OUTCOME 5: Linkage and engagement with stakeholders increased</b></p>	<ul style="list-style-type: none"> <li>▪ Invitation to STIPRO as a resource on local and international ST&amp;I forums increased annually from the current level of 40% to 80% in 2018/2019</li> <li>▪ Demand for STIPRO services by policy makers increased from the current level of 30% to at least 70% in 2018/2019</li> <li>▪ Number and profile of participants to STIPRO events maintained at the current level of 90% or increased by 2018/2019</li> </ul>	<ul style="list-style-type: none"> <li>▪ STIPRO annual progress report</li> <li>▪ STIPRO annual progress report</li> </ul>

## ***Highlights from the Results Framework***

**THE GOAL: Social and economic development enhanced as a result of enhanced ST&I capabilities at different levels.** It indicates STIPRO's contribution from amongst a number of stakeholders in Tanzania; specifically producing evidence through ST&I policy research and informing and influencing ST&I policies.

### **THE PURPOSE: Evidence-based ST&I policy development effectively facilitated**

The formulation of the purpose reflects that STIPRO has the obligation and responsibility to provide adequate and relevant stock of knowledge and statistical data and figures that are required for meaningful decisions on the national ST&I systems.

### **OUTCOME 1: Quality research undertaken**

STIPRO envisages undertaking 3 kinds of research activities:

- **Calls:** Proposals will be submitted as a response to advertised competitive research calls and the awarded ones will be carried out;
- **Commissioned:** Upon request from stakeholders STIPRO will respond by submitting research proposals and carry them out upon mutual agreement; and
- **Core grant researches:** These will be research projects initiated and funded by STIPRO through its own resources, including core grants, and solicitation of funds through proactively writing project proposals to relevant donors.

All the above research projects will equally be rigorously undertaken, and must be, policy relevant and of high quality.

### **OUTCOME 2: Capacity of the researchers enhanced**

The environmental scan clearly identifies a need for improved capacity of STIPRO in various areas, including research and policy linkages. Included in capacity building and very important is learning by doing through research and policy linkage activities. Others are short courses in various capacity needs, formal training such as PhDs, networking and collaboration with like minded organizations.

### **OUTCOME 3: Operational capacity of STIPRO sustainably enhanced**

This outcome includes governance tasks of continuously monitoring the strategic plan activities through periodic management meetings and holding Board meetings which ensure that the organization remain operating within the framework of its mandate. Important in this is also resources mobilization that will ensure smooth running of the activities.

### **OUTCOME 4: Government perception on the role of ST&I in development enhanced**

The environmental scan clearly revealed that the critical role of ST&I in socio-economic development – especially policy research - is not adequately understood among policy makers. This outcome will entice STIPRO to inculcate relevant ST&I message to government officials so as to gain the necessary support needed to undertake ST&I policy research.

### **OUTCOME 5: Linkage and engagement with stakeholders increased**

Realizing that STIPRO will not act in isolation to implement this strategic plan, but with the engagement of relevant stakeholders, this outcome will make the engagement with stakeholders a practical reality.

### **Implementation strategies**

One of the major activities in this plan is fundraising, and therefore the implementation strategies are crafted annually, depending on the amount of resources mobilized during that year, with the ultimate goal to achieve by 2018/19 the stated levels for different outcomes as indicated in Table 1 above

## **4.0 Environmental Scan**

STIPRO and its predecessor ATPS-Tanzania has been in the business of ST&I policy research for some time now and during this period not only socio-economic environment has changed but also policy context. STIPRO activities are built on a number of strengths that have been developed over time. Of course, like any other organization, its share of weaknesses is affecting organizational performance. There have been a number of opportunities that were successfully exploited but at the same time there has never been shortage of challenges standing in the way that have tended to slow its progress. A summary of SWOT analysis is presented in Table 2.

Table 2: STIPRO SWOT Analysis, 2014-2019

<p style="text-align: center;"><b>Strengths</b></p> <ul style="list-style-type: none"> <li>❖ Well trained leadership in ST&amp;I policy issues</li> <li>❖ Young, dynamic and motivated staff</li> <li>❖ Highly networked organization – both nationally and internationally</li> <li>❖ Well developed grant management skill</li> </ul>	<p style="text-align: center;"><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>❖ Increased awareness of the central role of ST&amp;I in development– e.g. the post 2015 development agenda, and the African Common Position on (ACP) SDGs</li> <li>❖ Changing socioeconomic context towards more knowledge-based development globally. STIPRO is the only organization in ST&amp;I policy research in the country; and very few in Africa, and therefore very limited competition.</li> <li>❖ ST&amp;I policy research cuts across many sectors with unlimited opportunities</li> </ul>
<p style="text-align: center;"><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>❖ Large part of STIPRO’s workforce is made up of young people; while this is an opportunity, it can also be a weakness when it comes to experience.</li> <li>❖ Still dependent on funding from development partners</li> <li>❖ Inadequate capacity towards own funds generation through consultancies, training services etc.</li> </ul>	<p style="text-align: center;"><b>Threats</b></p> <ul style="list-style-type: none"> <li>❖ Low public perception on the role of ST&amp;I policy research in the development of the STI system</li> <li>❖ Inadequate number of development partners interested in ST&amp;I policy research.</li> </ul>

## **4.1 Strengths**

STIPRO's top leadership is well grounded – academically and policy wise – in ST&I policy issues, providing bountiful mentorship, not only to STIPRO's young researchers, but also to those who are aspiring for further education in ST&I policy issues. Being young and dynamic organization, it also has its strength in equally young, energetic, highly motivated and committed research staff with high morale and eager to learn. The most recent recruitment of a Communication and Policy Advocacy Officer is intended to maximize policy impact.

STIPRO also draws its strength from being a highly connected organization. It has established close professional and working relationships with policymakers, academia, think tanks, media as well as national and international development agencies. This has allowed STIPRO to put in place effective programmes for mentorship and for grooming of young researchers through holding internal seminars and providing opportunities to participate in high profile fora at national and international levels. STIPRO has also put in place a well motivated group of internationally renowned scholars on innovation and development as STIPRO Fellows with the purpose of mentoring young researchers. As far as financial discipline is concerned, in addition to having well managed bank account, it has installed proper procedures to guide financial matters, including disclosure of annual audited financial report.

## **4.2 Weaknesses**

While being young and dynamic organization can be a source of strength, it has also some inherent weaknesses; and STIPRO is no exception. So far, a number of weaknesses have been identified, some more and others less important. First and foremost, STIPRO is faced with scarcity of resources, both in human and financial aspects. The junior researchers, however motivated and committed they may be, short of skills and experience in project design, development and management. Even though capacity building efforts during the past five years have been helpful in bridging skill and knowledge gap, the situation is far from being addressed once and for all. More capacity building is needed in the areas of research, communication, policy engagement and advocacy, which are critical to enhance organizational performance. In view of the fact that STIPRO is still a young policy research organization, better communication strategies including communication skills for researchers are, in addition, needed.

In terms of funding, STIPRO is yet to achieve the level of financial sustainability needed for it to play the role of informing ST&I policy more effectively. Indeed, like many other organizations of this type, donor dependency is still a very serious problem. For STIPRO, it is a serious weakness that needs to be addressed as part of medium and long term development strategy as it proposed in the current plan. Recruiting and retaining highly trained, competent and motivated researchers is possible only with stable financial resource base. While donor support will always be required, STIPRO needs to diversify its sources of funding for it to emerge as centre of excellence and key player in ST&I issues in the country.

## **4.3 Opportunities**

Given the centrality of science, technology and innovation for sustainable socio-economic growth and inclusive development, opportunities for organizations such as STIPRO are boundless. Indeed, its crosscutting status can be exploited to its advantage. One great opportunity for STIPRO lies on the fact that there are very few organizations – both government and non-government – that deal with science, technology and innovation policy research as their core

businesses. On the one hand, while the need for ST&I policy research output in public and private sectors (agriculture, industry, energy, social services, etc.) is high, available opportunities are not fully exploited. STIPRO is better positioned to bridge the knowledge gap. On the other hand, successful implementation of ST&I policies demands evidence from well designed policy-oriented research. In view of the fact that investment in ST&I, including R&D, is resource intensive in terms of both human and finances, policy research is required to generate necessary information for optimum use of scarce resources. With the good will now coming from political and government officials towards more evidence based policies, and changing international environment in favour of ST&I for development, there are increasing funding opportunities in th in this area.

#### **4.4 Challenges**

As earlier on noted, there are very few organizations dealing with ST&I policy research and advocacy, making it difficult for STIPRO to build networks and coalitions with like-minded organizations. In addition, ST&I policy research is relatively a new – though fast growing – field of study, thus the public perception of it is quite low, making difficult to mobilize resources from local sources, both from the public and private sectors.

### **5.0 Stakeholders Analysis**

Science, technology and innovation issues are crosscutting and as such there are no shortages of stakeholders, people interested in the outcomes of investments in science, technology and innovation, including policy research. Stakeholders are spread in many sectors, public and private, governmental and non-governmental, academic and R&D institutions, national and international arenas. STIPRO as policy research organization needs to reach out to as many stakeholders as possible in order to tap on available intellectual, technical and financial resources; above all, it needs to sell its products. Therefore, in this strategic plan, the prime task for STIPRO will be to oversee a transition from the existing unfavorable situation (problem tree) to attainment of the desirable future condition (objective tree). In realizing this transition process, however, STIPRO cannot act in isolation without the involvement of key stakeholders. Eleven key stakeholders have been identified and analyzed in terms of their potential and foreseeable constraints towards realization of STIPRO's strategic objectives.

#### **5.1 The Public Sector**

Government ministries, departments and agencies (MDAs) as well as the political leadership, in general, are key stakeholders in ST&I issues, policy research included. . Together they form a primary target group that uses STIPRO's research products, and provides the framework in which public policies are formulated, implemented, monitored and evaluated. More important, they mobilize and allocate public resources that can be tapped to further STIPRO's vision and mission. Therefore, it is very important to establish and sustain a good working relationship and to continuously engage with them through annual research workshops, seminars, round tables, publication and distribution of research reports and policy briefs. Engagement activities will also include regular face to face meetings with government officials for policy discussions and identification of relevant policy areas in ST&I, which need evidence to support decisions. During the past five years STIPRO has been collaborating with some MDAs, which include Ministries responsible for Communication, Science, and Technology; Industries and Trade; Agriculture,

Food Security and Cooperatives; the Planning Commission and COSTECH. In implementing this plan, STIPRO will further strengthen working relationships with policymakers in ensuring optimal use of STIPRO's research outputs. It is also hoped that – given the good will mobilized during the past five years – more resources can now be mobilized from the public sources.

## **5.2 The Private Sector**

Since the socio-economic and political reforms of the 1980s and 90s the private sector has emerged as a very important player in national development. Those working in the private sector such as in agriculture, energy and manufacturing are the main consumers of products of science, technology and innovation. They are important depositories of knowledge. As such, they are impacted, positively or negatively, by whatever ST&I policies are in place or in their absence. As ST&I policy research organization, STIPRO needs to have strategies to effectively engage stakeholders in the private sector. Therefore, research projects conducted by STIPRO must target to provide required improvement options for the private sector in order to increase production and productivity, thereby generating employment, which will lead to sustained poverty reduction. Towards this end, STIPRO has to work closely with apex organizations, such as the Tanzania Confederation of Industries (TCI), Tanzania Chamber of Commerce, Industry and Agriculture (TCCIA) and the Tanzania Private Sector Foundation (TPSF) in order to reach a wider business community, large and small. During the past five years, STIPRO has made some inroads in cultivating close collaboration with the private sector, efforts that will have to continue under this new strategic plan. STIPRO's researches will provide analyses of the systems of innovation in these sectors and generate evidence of existing weaknesses and linkage capabilities between the private sector and other stakeholders, the government and the academia.

## **5.3 The Think Tanks**

In order to generate and sustain synergy in policy-oriented studies, STIPRO will need to collaborate with other think tanks within and outside Tanzania. On this regard, STIPRO has been active on the Southern Voice Initiative on post-MDG platform with other think tanks from Africa, South Asia and Latin America, advocating for putting ST&I high in post-2015 development agenda. Therefore, coalition and networking with other think tanks will enhance STIPRO's efforts in hosting policy dialogues, advocacy and media roundtables on topical ST&I issues. Locally, the think tanks, with which STIPRO has closely collaborated with, include the Research for Poverty Alleviation (REPOA) on sectoral systems of innovation and the Economic and Social Research Foundation (ESRF). STIPRO collaborates with these organizations through capacity building programs, such as, research methodology training workshops, seminars and conferences.

## **5.4 The Think Tank Initiative**

The Think Tank Initiative is currently the major sponsor of STIPRO, which has generously supported the implementation of the 2009/10-2014/15 Strategic Plan, focusing on research programmes, research capacity building, organizational performance and engagement with policymakers through communication and outreach activities. With ongoing support from TTI, STIPRO is primed for another five years of high policy impact. However, as STIPRO progressively grew and taking up more activities, TTI support is increasingly becoming inadequate, needing to be supplemented by other sources. STIPRO is therefore working hard towards mobilization of financial resources from other development partners, , private sector and the Government of Tanzania.

## **5.5 The Academia**

Academic communities in Tanzania, like in many other places, have the highest concentration of human resources with knowledge and skills of relevance to ST&I policy research, which are often underutilized. Thus, in order to increase the critical mass of qualified ST&I policy researchers, STIPRO will continue to rely on universities offering postgraduate studies for its capacity building efforts. Unfortunately, for most of our local universities ST&I policy research is relatively a new field of study and therefore, STIPRO has to embark on advocating for the establishment of ST&I courses at universities in order to generate the required human resource capacity. So far STIPRO has good linkages with local universities and individual members in these institutions, some of them being long time affiliates of the organization. A typical example is that of STIPRO researchers who were mentored at the University of Dar es Salaam, Sokoine University of Agriculture (SUA) and Mzumbe University during their M.A. degree programs. More recently, STIPRO has worked closely with the College of Engineering and Technology (CoET) and the Institute of Development Studies (IDS), both at the University of Dar es Salaam, to establish a postgraduate module on Innovation and Development.

## **5.6 Research Institutions**

In the establishment of research and development (R&D) organizations during the 1970s and 80s, Tanzania embarked in important policy shift with far reaching consequences to the ST&I sector. These organizations are important stakeholders in ST&I policy research, and STIPRO needs to collaborate with them. Once again, STIPRO has good relationship with most research organizations in the country through joint research projects, participation in STIPRO workshops and seminars. Research areas of interest include public resource allocation for R&D, knowledge dissemination and technology transfer processes as well as in capacity building.

## **5.7 The Civil Society**

STIPRO belongs to and is a member of a fast growing civil society sector in the country trying to influence public policies in their respective areas of expertise. STIPRO is actively involved in activities organized by other CSOs such as policy dialogue events organized by the Policy Forum. The networking process is going on well and STIPRO is working to get other CSOs, including the media, that are interested in ST&I issues, thus generating synergy needed to sustain public awareness.

## **5.8 General Public**

STIPRO is working hard to raise public awareness on ST&I issues because the general public is the major and final beneficiary of the benefits accruing from the development of science, technology and innovation in the country in many ways. Unfortunately, public awareness on the role of science, technology and innovation for socio-economic development is quite low in the country, and thus calling for sustained campaign/efforts to raise the level of awareness. STIPRO, in collaboration with other stakeholders, especially the media organizations, need to pool together their resources for such purpose.

## **5.9 Development Partners**

In recognition of the role of ST&I in the development process, development partners have supported ST&I policy research in Tanzania and the entire Africa region in general, starting in early 1980s, and throughout the 1990s up to early 2000s. These partners include the International Development Research Centre (IDRC) of Canada, Carnegie Corporation of New York and SIDA of Sweden. Most recently, the Think Tank Initiative (TTI), a consortium of development partners led by IDRC, has supported STIPRO's activities through its core funding. In addition, few other partners have recognized the presence of STIPRO and are collaborating with it. For instance, when UNIDO was preparing the Tanzania Industrial Competitiveness Report for the year 2012, STIPRO was requested to be in the advisory board and later shared information relevant in the 'Inter-Organizational Industrial Policy' section. STIPRO also collaborates with other development partners, such as, UNCTAD and UNESCO, by participating in seminars and workshops and through joint research projects. In this Strategic Plan, STIPRO intends to further strengthen existing links with current partners and forge new ones where necessary and feasible.

## **5.10 The media**

The Media, especially the mass media houses, are critical and central partners for any policy research organization, which does research for the purpose of informing and influencing policies and other decisions. Mass media houses help in communicating research outputs with the intention to inform, educate and empower all other stakeholders mentioned above, including the general public, to make informed choices, motivation, and press for change that a piece of research is advocating for. Given the critical role of mass media, STIPRO has forged a very close working relationship with the mass media through collaboration with the Tanzania Science Journalists Association (TASJA).

## **6.0 Programmatic Areas**

Being a policy research organization, STIPRO's mission is focused at two major activities, which are research, and policy linkage and communication. However, given the infancy of ST&I policy research in Tanzania, there is a need for STIPRO to undertake a number of supplementary activities, including research capacity building and resource mobilization. The Strategic Plan 2014/2015 -2018/19 was designed to enhance sustainability of STIPRO as state of the art think tank for ST&I policy research in the country. More important, however, is the fact that the current plan builds on the achievements of the previous plan.

### **6.1 STIPRO Research Agenda**

The STIPRO research agenda for the next five years includes four priority areas that have been carefully and systematically drawn from the national development plans, strategies and policies, largely focusing on existing knowledge gaps. A full document on research agenda that includes this crucial background information is attached as an *Annex*. This section, therefore, only briefly describes selected research sub-themes as follows:

### *Sub-theme 1*

#### **Learning and innovation for poverty alleviation and competitiveness**

This theme addresses the issue of capability building in innovation, where interactive linkage and learning among important actors is central. It basically builds on what is already happening locally, where some forms of innovative activities are already under way. Although the learning process is multifaceted, the theme, to a large extent, has taken a sectoral dimension – focusing largely on agriculture and industry, especially the linkage between the two. We believe the two sectors, including the linkage between them, are central for sustained poverty alleviation, inclusive development, and international competitiveness of the national economy.

Agriculture and industry - for the later manufacturing in particular - have been identified as two top priority sectors for poverty alleviation in Tanzania. Studies have shown that it is difficult to increase productivity in the two sectors independent of each other. Productivity increase in agriculture very much depends on the development of the manufacturing sector, which serves both as market and source of knowledge for innovation. However, we do not have a complete understanding of what factors would enable the optimum performance of this system. For instance, despite the existence of local processing facilities for some agricultural produce and of high demand for such processed products locally and internationally, farmers still find problems in marketing their produce. More specifically, under this sub-theme, the following broad research questions are being raised:

- ❖ What leads to a mismatch between local processors and agricultural producers? Why are the two sectors not developing in tandem? How can the agro-industrial innovation systems be made more inclusive and sustainable?
- ❖ How can the local agro-processors learn from innovate and compete with imported products? What are respective roles of the private sector and the government in the process?
- ❖ How can the local manufacturers learn, innovate and compete in the export markets, especially with products from other developing countries? How can knowledge and technology transfer – horizontally and vertically – be organized in both the industrial and agricultural sectors so as to improve innovativeness?
- ❖ What are the gender and farm/firm size related issues for innovation in both the agricultural and industrial sectors?

### *Sub-theme 2*

#### **Governance of the national systems of innovation**

In the context of ST&I policy research, the term ‘governance’ is used to imply a range of decision making processes that culminate in the existing efficient and effective system of innovation. In the system thinking approach, the efficiency and effectiveness of the system is the function of a number of decisions by a number of actors in their numerous capacities. One of the challenges of poor developing countries is inefficiency of their systems of innovation, largely attributed to poor governance. In Tanzania, this has become evident through the recent review of the national systems of innovation, which has identified issues that seem to be connected with governance of the system to be major bottle necks in the successful implementation of policies. We especially underline effectiveness of ST&I policy in the whole issue of governance. Research on the governance of innovation system can promote effectiveness of the system. For instance, it can tell us something about what roles various actors in the innovation system play; how the rules of the game work and ought to work; how decisions are taken and ought to be

taken, and how changes in the overall innovation system can be made to improve working of the system. Important broad questions include:

- ❖ How are the ST&I policies made, implemented and reviewed? What is the best institutional arrangement for ST&I policy process?
- ❖ Are the science, technology and innovation policies integrated or taken as separate? What are the implications on the efficiency and effectiveness of the system?
- ❖ Are the budgetary allocations for the implementation of ST&I adequate?
- ❖ How are research performers (universities, public research organizations and think tanks) and funding agencies held accountable for their roles and or activities?
- ❖

### *Sub-theme 3*

#### **Energy for Development**

The diffusion of technologies and innovation, especially for the rural areas have largely been hampered by inadequate supply of electricity in villages that are not connected to the national grid. But there exist opportunities for alternative sources of energy, such as mini-hydro, wind, coal, solar and geothermal which have so far been commercially exploited elsewhere. The key concern here is technological capabilities to exploit such sources for rural enterprise development. STIPRO research agenda will focus on the off-grid energy sources, especially providing answers to the following broad questions:

- ❖ What are the knowledge and skill gaps in the production and supply of modern, off-grid energy sources in the rural areas for both domestic and commercial use?
- ❖ Are there proven energy technologies that are both environmentally sustainable and conducive for commercial exploitation? What are the knowledge and systems requirements for their transfer and absorption?
- ❖ How can the process of making energy available to the needy best be governed? What is the role of the government, development partners, private sector and knowledge institution?

### *Topic Area 4*

#### **Natural resources and structural transformation**

One sector where science, technology and innovation have the real potential in making the difference in people's livelihoods is natural resource. Tanzania, being endowed with abundant natural resources, has inbuilt comparative advantage in many ways. Currently, natural resources constitute a significant share of the country's exports. Unfortunately, most of natural resources exports are either raw or semi-processed, indicating limited linkages with the manufacturing, which is the basis for value addition, hence employment generation and poverty alleviation. It is therefore important to focus on manufacturing and technology deepening in order to make available natural resources more profitable and competitive. This is another priority area for ST&I policy research in order to generate knowledge needed for sustained structural transformation.

The natural resource sector is a very broad, encompassing many sub-sectors and related activities. These include minerals, forest products, water bodies, oil and natural gas, and other energy related resources (solar, wind, geothermal, etc.). The recent discovery of natural gas has attracted involvement of both local and foreign investments in the sector, raising important policy and technological issues that need to be addressed. Despite the prospect for natural gas

and other resources to contribute to sustained growth of Tanzanian economy, the sector is prone to uncertainties that only rigorous policy-oriented research can help to reveal. In order for the natural resource sector to contribute effectively to equitable and sustainable development, the following broad research questions need to be raised:

- ❖ What kinds of knowledge, skills and physical infrastructures are required for the efficient exploitation and value addition of the natural resources?
- ❖ What are the knowledge gaps and conditions for building absorptive capacities for Tanzania required in order taking advantage of its abundant natural resources for equitable and sustainable development?
- ❖ What role should be played by the foreign direct investment in deepening local technological capabilities in the natural resource sector?

## **6.2 Policy Engagement and Communication**

The STIPRO's main goal is to contribute to enhanced evidence-based ST&I policy decisions, which in turn can contribute to socio-economic development, which is inclusive and sustainable. Its mandate is to be proactive in informing and influencing ST&I policies; their design, implementation and evaluation. However, to be able to achieve this strategic goal, better policy engagement and communication strategies with key actors are needed. There are a number of ways this can be achieved. These include annual research workshops/seminars, research reports, policy briefs and newspaper articles. Others are more user friendly websites, social media such as face book and twitter; radio and TV programs. STIPRO will thrive to foster strong collaboration with the Tanzania Science Journalists Association (TASJA) and with media houses on reporting ST&I issues by conducting training on ST&I reporting among journalists in Tanzania. STIPRO will embark on building of coalition and networks of like-minded actors for hosting policy dialogues, advocacy and media roundtables on topical ST&I issues. A full policy engagement and communication strategy is attached as *Annex* to this document.

## **6.3 Capacity building**

As a young organization working in a relatively new field of research, continuous internal capacity building is a cornerstone of STIPRO's organizational development strategy in the next five years. In addition to development of human resource base, STIPRO intends to forge strong collaborative links with like-minded organizations, nationally, regionally and globally. Nationally, STIPRO will continue collaborating with Universities and think tanks through joint research projects; with the private sector, including TPSF; and with the government. There are also opportunities for regional collaboration in policy research as part of capacity building. Such like-minded organizations in the region include ACTS and KIPPRA in Kenya and ACODE in Uganda. In the past five years STIPRO had developed mutually beneficial relationships with a number of international collaborators including the African Network on Economics of Learning, Innovation and Competence Building Systems (*AfricaLics*); the Global Network for Economics of Learning, Innovation and Competence Building Systems (*GlobeLics*) and Research Policy Institute at Lund University, Sweden, Aalborg University in Denmark, and Sussex University in the UK. Such collaborations are central to STIPRO's capacity building efforts. The major

approaches to capacity building would include:

- Providing an opportunity to continuously do research – learning by doing
- Training in research methodology
- Attend short courses related to ST&I policy research and analysis
- Attend workshops and seminars, especially those that provide opportunities to present scientific papers
- Enroll for PhD programs on Innovation and Development.

## **6.4 Sustainability of STIPRO**

For a young organization like STIPRO, which is working in an environment where uncertainties are abound, human and financial resources are scarce, ensuring sustainability is indeed a very serious challenge. The long term sustainability of the organization entails a number of measures designed to put in place strategies for resource mobilization, knowledge production and their effective utilization in order to impact on national policies, the ST&I policy in particular. In this connection STIPRO will implement the following resource mobilization strategies:

### **6.4.1 Financial resources**

There is no doubt that the support from TTI during the second phase will constitute a lifeline for STIPRO in the near future. However, additional measures are needed to sustain the implementation tempo of the past five years, 2009-2014. STIPRO needs to continue to engage with the current development partners, especially those who have demonstrated interest and commitment towards fulfilling the STIPRO's vision and mission, especially TTI, since they know the organization and are sympathetic to its cause and are keen to support it. It must be pointed out that diversification of funding sources is central to sustainability of any organization. Therefore, the organization will strive to target new development partners and/or friends to the current partners. Above all, STIPRO needs to raise substantial amount of financial resources through its own means. The following are various modalities that are being/going to be utilized by STIPRO in its efforts to mobilize financial resources that will complement the current support from TTI:

1. **Grants:** STIPRO will continue to seek core and programmatic grants from traditional development partners, especially from those, whose development assistance portfolio focus on science, technology and innovation issues. A thorough background research will be needed to generate adequate knowledge on potential partners in order to determine their priorities and whether they are relevant to STIPRO's core functions. Potential partners will include, but not limited to organizations, such as IDRC, SIDA, FINNIDA, NORAD, DFID, DANNIDA, USAID, the Bill and Melinda Gates Foundation, the Ford Foundation, William and Flora Hewlett Foundation, the Rockefeller Foundation, the Carnegie Corporation of New York and African Capacity Building Foundation.
2. **Commissioned research:** The undertaking of commissioned researches is one way of mobilizing financial resources for STIPRO. Commissioned work from the government, private sector and other organizations can provide STIPRO with some extra financial resources through full cost recovery system. They can be

used to pay for researchers' salaries and office supplies. Consulting for the Government and other organizations, including development partners, can also be used to bolster STIPRO resources. In this context, we are especially looking at COSTECH, whose major mandate is to advise the Government on ST&I issues. COSTECH will need to supplement evidence generated from other sources with research outputs from STIPRO for good advice. With increasing recognition of the link between innovation and development, many African governments and private actors are increasingly seeking consultancies in the area of science, technology and innovation that STIPRO can exploit. Currently, most of the advising is undertaken by organizations from outside the continent, often with limited knowledge of the continent, proving that opportunities exist for organizations, such as STIPRO.

3. **Training services:** Offering short courses and training on ST&I issues is yet another resource mobilization strategy that can be exploited. For a country like Tanzania, which is aspiring to achieve a middle income status and competitive industrial sector by 2025, investment in innovation studies, including training, is indispensable. It is an opportunity waiting to be exploited. Therefore, STIPRO can widen its resource base by developing and implementing training programs that cater for a wider clientele that will include policymakers, industrial and R&D managers. For complex areas, such as science, technology and innovation, effective policy making and innovation management, policymakers and managers need to understand the policy making process and the role of policy-oriented research. On the other hand, for innovation policies to be effective, the private sector needs to be knowledgeable on issues of technology and innovation management at the firm levels.

**Business Community:** Local corporations and the business community are important stakeholders in science, technology and innovation issues. They are main consumers of whatever ideas and/or products come out of the national system of innovation and if properly informed and mobilized, they can be important sources of finance to sustain the system. Also, by teaming up with local think tanks, such as REPOA and ESRF through joint researches and coupled with other local strategic partners, STIPRO can have access to local funds for its activities.

#### **6.4.2 Human resources**

Linked to shortage of financial resources is scarcity of human resources in ST&I policy-oriented research – it is like egg and chicken-. Therefore, mobilization of financial resources, especially through consultancies and offering of training services, requires a very strong human resource base; but we also need financial resources to build such a base. Currently, STIPRO's establishment consists of 11 employees: 6 researchers and 5 supporting/ technical staff, a far cry from optimum. For any organization to survive, it needs a strong financial base in order to recruit, retrain and retain competent people, who in turn can generate steady income for the organization. Thus, for STIPRO to emerge as a centre of excellence in science, technology and innovation policy research in Tanzania and beyond, it must ensure to have a strong human resource base for activities envisioned in the strategic plan. Competence building is, therefore, focused at two major areas of work of the organization: Research and policy linkage. Knowledge

generation through research and policy linkage is envisioned to generate capacity for consultancy and training services. There are two major areas that are especially potential in offering training services. First is training of policy officials, not only for Tanzania, but for the rest of Africa, on innovation policy. Innovation policy is emerging as a major area of concern for most African governments; and since there are extremely few organizations that are endowed with such competence in Africa, STIPRO will be a much sought after organization for such capacity building activities. Second is training on innovation management at the firm level: As companies become more aware of the need for innovation for growth and competitiveness, partly through our advocacy, they will demand for training in technology and innovation management.

In terms of optimum size of the organization, STIPRO needs to develop critical ST&I policy research expertise in identified priority areas: agriculture, manufacturing, energy and natural resource and structural transformation. To allow flexibility, interest of researchers and deepening of expertise, STIPRO will allow, and actually promote some sort of specialization across these areas. The future plan is for STIPRO to have at least 2 researchers specializing in each priority area. Last but not least, in order to broaden its human resource base, STIPRO will seek to get people to work as volunteers or on secondments, to provide research fellowship positions and sabbaticals to relevant technical expert and/or peers in areas of policy research, communication/policy engagement, monitoring and evaluation and resource mobilization. They can be cost-effective ways of developing human resources to enhance performance of the organization. STIPRO is already having a STIPRO fellows program, where scholars from universities abroad, who teach and do research on innovation and development, are mentoring young researchers at STIPRO.

## 7.0 Activities and Outputs

Activities leading to attainment of each outcome have been formulated. STIPRO’s management will oversee the implementation of each of the listed activities to its full accomplishment. Once all these activities have been successfully implemented, the outcomes will be delivered, hence the purpose. Table 3 provides a complete list of the activities to be implemented in the five-year intervention period.

**Table 3: STIPRO Activities**

OUTCOMES	ACTIVITIES
<p><u>OUTCOME 1:</u> Quality research undertaken</p>	<p>1.1 Respond to call/commissioned research proposals and undertake the awarded ones, including unsolicited research proposals funded by interested partners</p> <p>1.2 Conduct research projects using core grant from TTI</p> <p>1.3 Engage peer reviewers</p> <p>1.4 Provide incentives to peer reviewers</p> <p>1.5 Undertake seminars to discuss research proposal/papers</p> <p>1.6 Conduct review of the research agenda</p> <p>1.7 Conduct monitoring and evaluation of the research activities at STIPRO</p>
<p><u>OUTCOME 2:</u></p>	<p>2.1 Establish an inventory of existing/potential researchers in ST&amp;I</p>

OUTCOMES	ACTIVITIES
Capacity of the researchers enhanced	<ul style="list-style-type: none"> <li>for possible recruitment/collaboration</li> <li>2.2 Identify skill gaps and training needs of researchers</li> <li>2.3 Develop and undertake training programme of researchers including PhD studies</li> <li>2.4 Establish a resource centre</li> <li>2.5 Mentor researchers</li> <li>2.6 Establish a sabbatical/fellowship desk at STIPRO for senior researchers</li> <li>2.7 Facilitate researchers for paper presentations at conferences</li> <li>2.8 Continuously monitor adherence of team collaboration spirit</li> <li>2.9 Financially support masters dissertations in the area of ST&amp;I policy</li> <li>2.10 Establish mechanisms for joint researches</li> </ul>
<u>OUTCOME 3:</u> Operational capacity of STIPRO sustainably enhanced	<ul style="list-style-type: none"> <li>3.1. Facilitate training of STIPRO staff including researchers</li> <li>3.2. Develop and implement diversified resource mobilization strategies/activities</li> <li>3.3. Design the provision of attractive competitive packages/environment for staff</li> <li>3.4. Establish demand for ST&amp;I knowledge by undertaking needs assessments/tracer study</li> <li>3.5. Organize audiences with individual development partners to present the STIPRO strategic plan in quest of soliciting financial and material support</li> <li>3.6. Prepare fundable research proposals for submission to potential clients</li> <li>3.7. Explore possibilities of acquiring own office premises</li> <li>3.8. Recruit new researchers</li> <li>3.9. Conduct staff performance review</li> <li>3.10. Review STIPRO organizational structure</li> <li>3.11. Conduct Board meetings</li> <li>3.12. Monitor the implementation of strategic plan</li> <li>3.13. Conduct an annual implementation plan 2014/2015</li> <li>3.14. Conduct annual review and plan for the following year</li> <li>3.15. Conduct review of the overall implementation of the strategic plan 2014/2015 – 2018/2019</li> <li>3.16. Develop strategic plan for 2019/2020 – 2024/2025</li> </ul>
<u>OUTCOME 4:</u> Government perception on the role of ST&I in development enhanced	<ul style="list-style-type: none"> <li>4.1 Identify focal persons at key ministries and engage with them</li> <li>4.2 Organize ST&amp;I policy consultations with strategic parliamentarians</li> <li>4.3 Identify and engage a STIPRO patron</li> <li>4.4 Continuously collect and analyze information in order to identify STIPRO contribution in all ST&amp;I policy statements</li> <li>4.5 Engage policy makers at the formulation of ST&amp;I research projects</li> <li>4.6 Disseminate research policy briefs to government officials</li> </ul>
<u>OUTCOME 5:</u>	5.1 Organize annual research workshops to disseminate research

OUTCOMES	ACTIVITIES
Linkage and engagement with stakeholders widened and strengthened	<p>information</p> <p>5.2 Organize round table discussions on ST&amp;I topical issues</p> <p>5.3 Organize ST&amp;I consultation with TPSF, SAGGOT and other private sector members</p> <p>5.4 Organize seminars to advocate for establishment of ST&amp;I policy courses and programs in higher learning institutions</p> <p>5.5 Participate in events organized by stakeholders at national and international levels for organizational networking</p> <p>5.6 Organize trainings on ST&amp;I reporting among media people in collaboration with TASJA (one day for media + one day for STIPRO researchers)</p> <p>5.7 Train STIPRO researchers on communication skills and policy engagement</p> <p>5.8 Media campaign for STIPRO and ST&amp;I visibility for the general public</p> <p>5.9 Produce and widely disseminate policy briefs</p> <p>5.10 Improve and host STIPRO website</p> <p>5.11 Participate at Sabasaba trade shows</p> <p>5.12 Establish and compile the demand of STIPRO services by policy makers</p> <p>5.13 Compile the number and profile of participants to STIPRO events</p> <p>5.14 Develop effective communication channels to general public</p>

## 8.0 Summary of Financial Resource Requirements

S/N	Outcomes	Budget in TZ Shillings
1	Quality research undertaken (inclusive of researcher's salaries for 12 researchers)	1,799,400,000
2	Capacity of the researchers enhanced	325,600,000
3	Operational capacity of STIPRO sustainably enhanced	183,000,000
4.	Government perception on the role of ST&I in development enhanced	49,440,000
5.	Linkage and engagement with stakeholders increased	539,400,000
	<b>Total</b>	<b>2,896,840,000</b>

## 9.0 Risks and Mitigation measures

Assuming that all other factors will not significantly change, two major risks have been identified.

The first risk for this Strategic Plan not to be successfully implemented is to receive only a lukewarm acceptance by most of the potential stakeholders, especially the government and development partners, given the backdrop that science, technology and innovation have yet to be given top priority in order to spear-head socio-economic development in developing countries.

This is precisely the reason as to why one of the major activities in this Strategic Plan revolves around advocacy. In addition, recently there has been increased awareness and interest on innovation amongst African governments. For instance the first two of the six priority areas of the African Common Position (ACP) on post 2015 development agenda are closely related to ST & I: Whilst the first agenda is on structural transformation, where value-addition to natural resources is key, the second one is directly on S T & I. In addition, ST&I is directly reflected in the SDGs; specifically Goal 9.

In the light of the above, and given the fact that organizations dealing with S T & I policy research are very few in Africa, and STIPRO is the lone one in Tanzania, the probability of the Strategic Plan being supported is medium to high.

The second major risk is inadequate number of qualified human resources at STIPRO, especially those with long term experience in ST&I policy research; something that is unavoidable – at least in the short term – given lack of appropriate courses at Universities in this crucial area of research, which is precisely the reason capacity building is part of the activities in this SP. To mitigate the risks in the short term, STIPRO envisages attracting and engaging qualified researchers from elsewhere as volunteers or on part-time basis whenever opportunities arise. One of the measures that STIPRO has already taken towards this direction is to host PhD students from developed countries’ universities doing fieldwork in Tanzania. We already have a student from the University of Edinburg in the UK and University of Guelph in Canada. In addition, STIPRO has put in place a STIPRO Fellow’s program. These are accomplished scholars in the area of innovation and development, and are teaching at or affiliated to the universities that offer related courses. It is worthwhile to report that currently, there are a total number of eight Fellows who have committed themselves to provide support to STIPRO’s activities from the following institutions: two from the University of Aalborg (Denmark) and one each from UNU-MERIT (Netherlands), University of Dubai (United Arab Emirates), Policy Research International (Canada), UNCTAAD-Geneva (Switzerland), Lund University (Sweden), Mzumbe University (Tanzania) and Nelson Mandela African Institute of Science and Technology, Arusha.

## **10.0 STIPRO Governance**

STIPRO has a strong Board of Directors to ensure that the proposed activities, which are geared towards fulfilling its envisaged Mission and Vision, are successfully undertaken. Currently, the Board consists of the following nine members:

1. Dr. Adalgot Komba: (Chaiman) (Institute of Development Studies, University of Dar es Salaam)
2. Prof. Benedict Mongula: (Institute of Development Studies, University of Dar es Salaam)
3. Mr. Thomas Kimbunga: Confederation of Tanzanian Industries (CTI)
4. Eng. Elli Pallangyo: (Ministry of Industry and Trade)
5. Prof. Banji Oyeyinka: (UN Habitat – Nairobi office, and Visiting Professor, UNU-MERIT, The netherlands)
6. Eng. Happiness Mgalula (Planning Commission)
7. Prof. Lettice Rutashobya ( University of Dar es Salaam Business School (UDBS).
8. Dr. Bitrina Diyamett (Secretary) (Executive Director, STIPRO)

## REFERENCES

Diyamett, B., P. Ngowi and M. Mutambala (2011). *The Role of Foreign Direct Investment (FDI) in Local Technological Capability Building: The Case of Tanzania*

Lee, K. and Mathews, J. (2013). “Science, Technology and Innovation for Sustainable Development”. CDP Background paper No. 16

Schwab, K (2013). *The Global Competitiveness Report 2012–2013*. World Economic Forum, Switzerland.

URT (2012). *National Accounts of Tanzania Mainland 2001 – 2011*. National Bureau of Statistics, Ministry of Finance, Dar Es Salaam.

URT (2011a). *The Tanzania Five Year Development Plan 2011/12 – 2015/16: Unleashing Tanzania’s Latent Growth Potentials*. President’s Office, Planning Commission (POPC), Dar Es Salaam.

World Bank (2009). “Lost in transition: Income Poverty Reduction Since 2001”. Unpublished paper prepared for the Research and analysis Working Group. February 2009.

URT (2011b). *Tanzania Agricultural and Food Security Investment Plan (TAFSIP) 2011 – 12 to 2020-21*. Working Paper No. 2.

URT (2005). *National Strategy for Growth and Reduction of Poverty (NSGRP)*: Vice President’s Office, Dar-es-Salaam.

URT (2000). *National Development Vision: Vision 2025*. Planning Commission, Dar es Salaam.

World Bank (2011). *World Economic Indicators*. <http://databank.worldbank.org/ddp/editReport>. Visited on 23/04/2014

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