

# TEA RESEARCH FOUNDATION OF KENYA



## Strategic Plan 2005-2010

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<b>TABLE OF CONTENTS</b>	
<b>LIST OF FIGURES AND TABLES    1</b>	
<b>CHAPTER ONE    4</b>	
<b>INTRODUCTION .....</b>	<b>6</b>
The Importance of the Tea-sub sector to Kenya’s Economy.....	6
Role of Tea Research Foundation of Kenya (TRFK) in National Development.....	7
Rationale and Process of Strategic Planning .....	10
<b>CHAPTER TWO    13</b>	
<b>GLOBAL OVERVIEW OF THE TEA INDUSTRY    13</b>	
<b>CHAPTER THREE    16</b>	
<b>THE STRATEGIC MODEL .....</b>	<b>16</b>
Mandate of TRFK .....	16
Vision.....	16
Mission .....	16
Core Values.....	16
SWOT and Stakeholder analysis.....	17
Strategic objectives, Strategies and Activities .....	<b>Error! Bookmark not defined.</b>
<b>CHAPTER FOUR 29</b>	
<b>RESOURCE FLOWS AND UTILIZATION .....</b>	<b>29</b>
Financial Resources.....	29
1. Technical support .....	37
2. Development Expenditure .....	37
3. Revenue Plan.....	38
<b>CHAPTER FIVE    40</b>	
<b>CAPACITY DEVELOPMENT AND RISK MANAGEMENT    40</b>	
Introduction.....	40
Capacity Development Strategy for Human Resource.....	40
Organizational structure.....	41
Capacity development Strategy for Physical Resources .....	41
<b>CHAPTER SIX    45</b>	
<b>IMPLEMENTATION, MONITORNG AND EVALUATION .....</b>	<b>45</b>
Introduction.....	45
Implementation Plans (IP) and Annual Work Plans .....	45
Monitoring and Evaluation .....	46

## **LIST OF FIGURES AND TABLES**

Figure 1. Relationships in the Kenyan tea industry

Figure 2. Organizational Structure

Table1. Major World tea production and export figures (thousand tons)

Table 2. A PESTLE analysis for the Foundation

Table 3. Summary of Strengths, Weaknesses, Opportunities and Threats identified for TRFK

Table 4. Summary of Stakeholder analysis for TRFK

Table 5. Results Matrix

Table 6. Resource Flows

Table 7. Risk and risk mitigation

Table 8. Logical Framework

Table 9. Annual Targets

## LIST OF ACRONYMS

ATP	Association of Tea Packers
BoD	Board of Directors
CIM	Crop Improvement and Management
CBK	Coffee Board of Kenya
DFID	Department of Foreign International Development
EATTA	East Africa Tea trade Association
FAM	Finance and Administration Manager
FAS	Field Advisory Services
GDP	Gross Domestic Product
GMO's	Genetically Modified Organisms
GoK	Government of Kenya
HIV	Human Immunodeficiency Virus
HRO	Human Resource Officer
ICT	Information Communications Technology
IFS	International Foundation for Science
IP	Implementation Plan
IPR	Intellectual Property Rights
JICA	Japanese International Corporation Agency
KEFRI	Kenya Forestry Research Institute
KESREF	Kenya Sugar Research Foundation
KFS	Kenya Forest Service
KIRDI	Kenya Industrial Research and Development Institute
KPLC	Kenya Power and Lightening Company
KTDA	Kenya Tea Development Agency
KTGA	Kenya Tea Growers Association
KWS	Kenya Wildlife Service
MDG's	Minimum Development Goals
M & E	Monitoring and Evaluation
MoA	Ministry of Agriculture
MoF	Ministry of Finance
MTP	Medium Term Plan
NARS	National Agricultural Research System
NCST	National Council of Science and Technology
PESTLE	Political Economic Social Technology Legal and Ecological
QPDB	Quality, Product Diversification and Branding
QPR	Quarterly Progress Report
RITS	Research Innovation Technology Sector
RTD	Ready to Drink
SCAC	State Corporations Advisory Committee
SPRCE	Sustainable Production, Resource Conservation and Environment
SRA	Strategy for Revitalization of Agriculture
SP	Strategic Plan
TBK	Tea Board of Kenya
TRFK	Tea Research Foundation of Kenya
TSS	Technical Support Services
TWAS	Third World Academy of Science
UNDP	United Nations Development Program

**List of Acronyms is not exhaustive!!!**

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## FOREWORD

The Tea Research Foundation's Strategic Plan 2005-2010 outlines the Vision and Mission and in line with its mandate as expounded in the Memorandum and Articles. The tea industry in Kenya contributes to Kenya's Gross Domestic Product (GDP) and accounts for 60% of foreign exchange earnings. Tea is the leading cash crop in Kenya contributing directly to the objectives of the Economic Recovery Strategy (ERS) and is expected to contribute significantly towards the economic pillar of Kenya's Vision 2030.

The Foundation is responsible for basic, strategic, applied and adaptive research on tea. Due to the changing global operating environment, TRFK needs to operate efficiently and effectively and with the current government policy of Performance Contracting, the Foundation therefore has found the need to align her activities with the Strategic objectives, Vision and Mission in this Strategic Plan. The SP is therefore central to the development of Medium Term Expenditure Framework budget.

While recognizing that TRFK does not exist on her own, the Foundation has carried out a Political, Economic, Social, technological, Legal and Ecological/Environmental (PESTLE analysis) as well as other internal and external factors, a Strength, Weaknesses, Opportunities and Threats (SWOT) analysis and this has been the driving force for change in TRFK strategic issues, hence the need to implement the SP.

We have been able to develop and review this Strategic Plan through partnership initiatives between the government, collaborative research institutions, donors, farmers, and consumers. It is through these collaborative efforts that our goals will be achieved. This Strategic Plan also outlines the current budget and resource flows as well as capacity development which influences the performance of the organization.

## EXECUTIVE SUMMARY

Kenya's overall economic and social development is highly dependent on the growth and development of the agriculture sector. The contribution of the agriculture sector to the GDP is expected to rise by 7% by 2012. Currently, tea is the leading cash crop in Kenya and makes significant contribution to the economy. In the year 2007, the country produced 369,606 tons of made tea of which 351,125 tons were exported, earning Ksh. 43.4 billion in foreign exchange. This represents about 26% of the total export earnings, and about 4% of the GDP.

Tea contributes directly to objectives of the Economic Recovery Strategy (ERS) as a rural based enterprise. Additionally, tea continues to contribute to the overall growth of agriculture in line with the Strategy for Revitalization of Agriculture (SRA)-2004-2014 as stipulated in the Medium Term Plan (MTP)-2008-2012. An estimated 3 million Kenyans (about 10% of the total population) derive their livelihoods from the tea industry. The crop also contributes significantly to the development of rural infrastructure. It directly contributes to environmental conservation through enhanced water infiltration, reduced surface erosion, and mitigation of global warming through carbon sequestration.

The Foundation's mandate is "to promote research and investigate problems related to tea and such other crops and systems of husbandry as are associated with tea throughout Kenya including the productivity, quality and sustainability of land in relation to tea planting; and matters ancillary thereto". Research is currently conducted in the areas of: Crop Improvement and Management; Quality, Product Diversification and Branding; Sustainable Production, Resource Conservation and Environment; and technology transfer. The research has contributed significantly to increased productivity and quality of tea. Indeed, the Foundation has over the years been recognized as a lead research institution nationally, regionally and internationally. This recognition is strength for the Foundation and provides an opportunity for establishing and/or strengthening partnerships and collaborative linkages at the national, regional and international levels.

This Strategic Plan document is set out in six chapters. Chapter one contains an introduction covering the importance of the Tea-sub sector to Kenya's economy; the role of the Tea Research Foundation of Kenya (TRFK) in National development; the rationale and process of reviewing the strategic plan; and organization of the Strategic plan. While chapter two provides a global overview of the Tea Industry, chapter three presents the strategic model, including the mandate of TRFK, functions, vision, mission, core values, SWOT analysis, stakeholders' analysis, strategic objectives, strategies and activities. Chapter four covers resource flows and utilization, while Chapter Five is on issues of Capacity Development and Risk Management. Chapter Six, which is the last chapter, deals with Implementation, Monitoring and Evaluation

## CHAPTER ONE

### INTRODUCTION

#### The Importance of the Tea-sub sector to Kenya's Economy

- 1.1. Kenya's overall economic and social development is highly dependent on the growth and development of the agriculture sector. The contribution of the agriculture sector to the GDP is expected to rise by 7% by 2012. Presently, the sector contributes 26% of the Gross Domestic Product (GDP) and a further 27% of GDP through linkages with manufacturing, distribution and service related sectors. The sector accounts for over 60% of the foreign exchange earnings and accounts, directly and indirectly, for over 62% of the total employment in the country. It also provides raw materials for agro-industries, which account for 70% of all industries, and provides over 45% of the government revenue.

The small-holder sub-sector dominates the agriculture sector, accounting for over 75% of total agricultural production and over 50% of marketed production. With regard to major commodities, the sub-sector is responsible for production of over 80% of milk, 70% of maize, 70% of beef and other meat products, 65% of coffee and 60% of tea. It is responsible for production of all pyrethrum and most of the food crops. This, therefore, implies that the main vehicle for creating employment and reducing poverty is through development of agriculture sector in the rural areas for both the smallholder and large holder sub-sectors.

- 1.2 Currently, tea is the leading cash crop in Kenya and makes significant contribution to the economy. In the year 2007, the country produced 369,606 tons of made tea of which 351,125 tons were exported, earning Ksh. 43.4 billion in foreign exchange. This represents about 26% of the total export earnings, and about 4% of the GDP.

Tea contributes directly to objectives of the Economic Recovery Strategy (ERS) as a rural based enterprise. Additionally, tea continues to contribute to the overall growth of agriculture in line with the Strategy for Revitalization of Agriculture (SRA)-2004-2014 as stipulated in the Medium Term Plan (MTP)-2008-2012. An estimated 3 million Kenyans (about 10% of the total population) derive their livelihoods from the tea industry. The crop also contributes significantly to the development of rural infrastructure. It directly contributes to environmental conservation through enhanced water infiltration, reduced surface erosion, and mitigation of global warming through carbon sequestration.

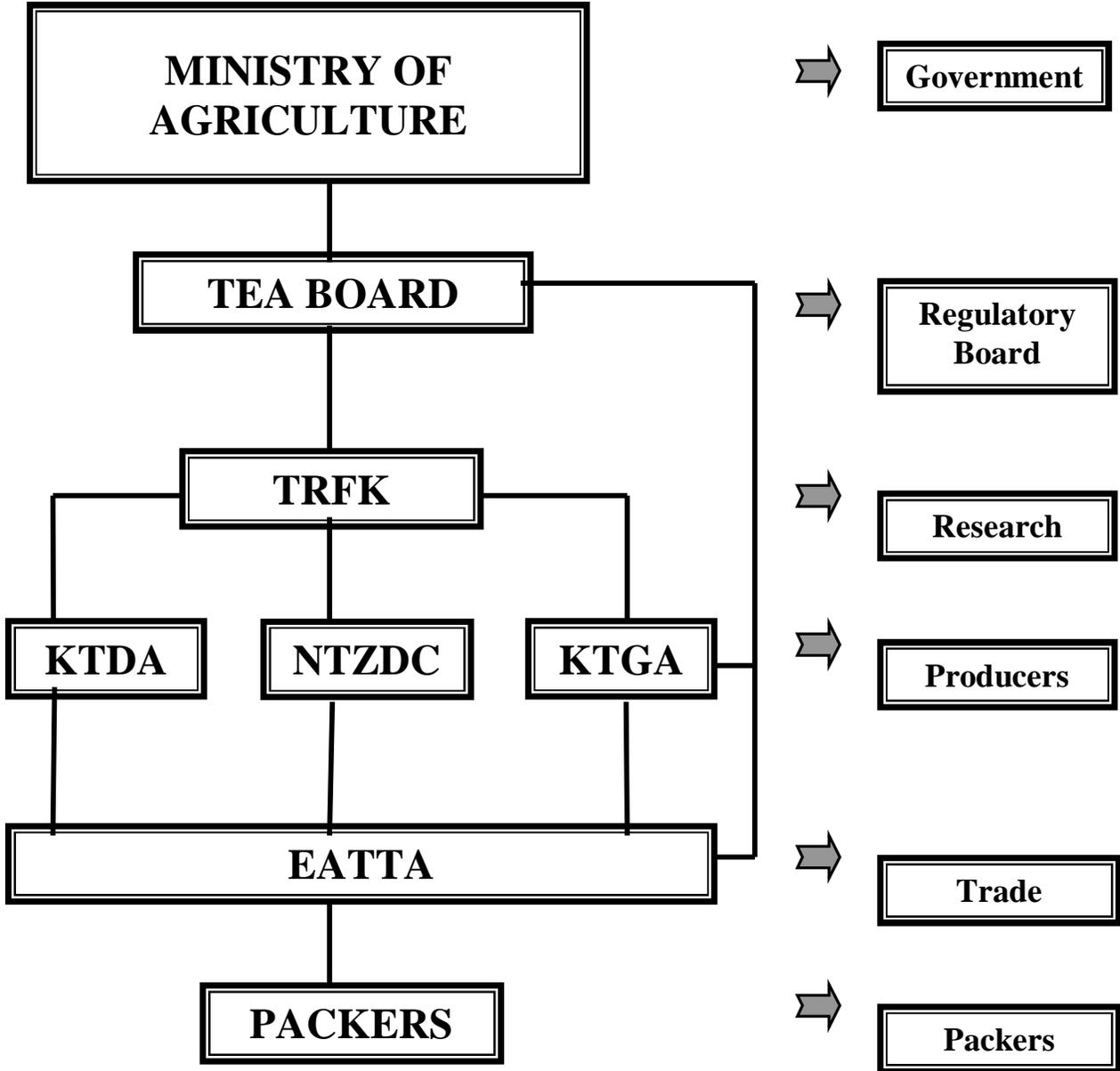
- 1.3 Tea in Kenya is grown in high altitude areas between 1800 and 2700 metres above the sea level, where annual rainfall ranges from 1800 mm to 2500 mm. The tea growing areas are spread throughout the country, but mainly west and east of the Rift valley. The industry is structured into two major sub-sectors: the large estate and small holder sub-sectors. The latter sub-sector, with average holdings ranging from less than one hectare to twenty hectares, accounts for about 66% of the total area under the crop and 60% of the total production.

Since tea was introduced in Kenya in 1903, cultivation of the crop has expanded rapidly in terms of area planted and volume of tea produced. The expansion of tea growing in different agro-ecological zones (including areas considered marginal for tea) and under different socio-economic conditions calls for concerted efforts in tea research and development, technology and information transfer.

### **Role of Tea Research Foundation of Kenya (TRFK) in National Development**

- 1.4 Research on tea was initiated in Kenya by Brooke Bond Limited in 1949 as department within its local company, the African Tea Holdings Limited. With the expansion of the tea industry in East Africa, the department became the Tea Research Institute of East Africa, and served Kenya, Uganda and Tanzania. With the breakup of the East African Community in 1977, the Government of Kenya (GoK), through the Tea Board of Kenya (TBK), established the Tea Research Foundation of Kenya (TRFK) in 1980 as a semi-autonomous research organization with headquarters in Timbilil Estate in Kericho, west of the Rift Valley. In 1998, the Foundation established a sub-station at Kangaita in Kirinyaga District, east of the Rift Valley. The Foundation has 423 ha and 8 ha of prime land at Timbilil and Kangaita, respectively. The structural relationship of the Kenyan Tea Industry showing the relationships and linkages between the Government and regulatory board on one hand and the producers, packers and traders as major stakeholders on the other hand is shown in Figure 1.

Figure 1: Relationships in the Kenyan tea industry



- 1.5 The Foundation is responsible for all types (basic, strategic, applied and adaptive) research on tea, as well as technology packaging and transfer. Over the years, the Foundation has been recognized as a lead research institution nationally, regionally and internationally. This recognition is strength for the Foundation and provides an opportunity for establishing and/or strengthening partnerships and collaborative linkages at the national, regional and international levels.
- 1.6 The demand for technologies and knowledge is changing, because society in general and the agriculture sector in particular are changing. Factors such as sky rocketing cost of inputs and dwindling incomes, urbanization, uneconomical land fragmentation, environmental degradation, and market liberalization have stimulated the demand for better stewardship of natural resources and for increased access to growing consumer markets. The kind of production technology needed by farmers is also changing, as new inputs and new approaches become available. The quality standards that new technologies must meet are increasingly defined at the global level and farmers' products must compete in this level and with imports in the domestic markets.
- 1.7 Research on tea has contributed significantly to increased productivity and quality of tea. The simple, practical and cost-effective method of vegetative propagation developed and made available to farmers in the early 1960s resulted in rapid expansion of tea cultivation and increased production in the country, particularly in the 1970s. The total production area for the smallholder sub-sector rose from 56 hectares owned by less than 500 farmers in 1955 to 149,196 hectares owned by over 500,000 farmers in 2007, accounting for 66% of the total area under tea production in the country.
- 1.8 Significant yield increases and improved tea quality have been achieved through the development of improved tea clones and production technologies. Over time, the Foundation has developed over 914 improved clones, out of which 49 clones have been selected for consistent superiority in yield and quality and released for commercial exploitation by both smallholder and large estate growers. Thirteen of these clones are capable of yielding between 5,000 kg and 8,000 kg of made tea per hectare per year. These yield levels are some of the highest in the world and are in magnitude of three times the average yields of unimproved tea. However, the major challenge is how to increase the adoption of improved technologies to close the gap between research and actual farm yields.
- 1.9 Recent advances in research are gradually breaking down traditional frontiers between disciplines and sectors. This is most apparent in the field

of biotechnology. New tools and processes such as gene mapping have cross-sectoral benefits but are expensive to develop, depending more on collaboration between different institutions than on teams drawn from a single institution. The International exchange of scientific information has advanced greatly as a result of improved communications (ICT) minimizing travel and related risks – a factor that has encouraged institutions to access and apply research results from others. Another significant development is the increase in awareness and extent of Intellectual Property Rights (IPR).

- 1.10 Kenyan tea is sold to the world market in bulk and used for blending lower quality teas from other countries. This results in lower prices for Kenyan tea. A strategic approach is to diversify and add value to the tea products for the domestic and international markets. The different products that can be produced from the tea leaf include green tea (non-fermented), oolong tea (semi-fermented), orthodox green or black tea, white tea (silver tips), anti-oxidant rich tea, extracted catechins (which are used as drug supplements, preservatives and other industrial uses), tea polyphenol extracts for pharmacological and industrial uses, forms of drinks such as instant tea, Ready To Drink (RTD) cola tea, and fast moving consumer goods such as health care products, foods and confectionaries.
- 1.11 The Foundation's efforts to enhance branding, product diversification and value addition are limited by the following challenges: lack of an adaptive tea research factory and other relevant equipment; qualified and experienced personnel in the fields of food science, biochemistry and process engineering; and inadequate exchange of market information. Inadequate processing capacities in Kenyan factories and lack of operational policies and guidelines for intellectual property rights are still a challenge.
- 1.12 Traditionally, electricity and petroleum-based products have been the main sources of energy for tea processing factories. Owing to increasing costs, the majority of factories have changed to wood as a source of energy. The increasing amounts of wood required by factories, in addition to domestic wood requirements, will lead to more trees being harvested for fuel. This is a threat to the sustainability of wood as a source of energy and environmental conservation. This issue will be addressed in chapter three of this strategic plan. Farmers on the other hand, may be encouraged to plant appropriate trees such as eucalyptus in the more marginal areas which they will consequently harvest and supply to the tea factories. This will be an opportunity for farmers to earn income.

### **Rationale and Process of reviewing the Strategic Plan**

- 1.13 The Foundation's mandate is "to promote research and investigate problems related to tea and such other crops and systems of husbandry as are

associated with tea throughout Kenya including the productivity, quality and sustainability of land in relation to tea planting; and matters ancillary thereto". The Foundation conducts research in the areas of Crop Improvement and Management, **CIM** (breeding, genetics, soil fertility, tea plant nutrition, agronomy, plant entomology and pathology), Quality, Product Diversification and Branding **QPDB**, Sustainable Production, Resource Conservation and Environment, **SPRCE**, and technology transfer.

- 1.14 Given the changing global operating environment, research and development of organizations need not only to operate effectively and efficiently, but also to adapt to the changing environment for posterity. The Foundation's strategic plan will provide the necessary framework and road map for its success in this era of change and competitiveness.
- 1.15 With the current government policy of performance contracting for public servants, it is important for the Foundation to align its activities with this policy to improve its performance. In this regard, the Foundation has found it necessary to align its activities with the strategic objectives and Mission; while appreciating that its performance will be gauged in terms of four key indicators:
- Effectiveness: the degree to which the organization achieves its objectives.
  - Efficiency: the degree to which the organization generates its products using a minimum of inputs.
  - Relevance: the degree to which the organization's objectives and activities serves the priorities of key stakeholders, hence their satisfaction.
  - Financial Sustainability: the ability to make an organization financially stable, in the long-term.
- 1.16 A strategic plan states the vision, mission, core values and strategic objectives as a framework and road map for an organization. Although the Foundation developed a five year strategic plan (2005-2010), changes in the operating environment brought about by formulation and operationalization of various government policies and documents namely; SRA 2004-2014, MTP 2008-2012, MoA's Strategic Plan (2006-2011), Tea industry Task Force Report 2007, MDG's and Kenya's Vision 2030, have made it necessary to review the Strategic Plan to align it with the said documents.

1.17 The process started on 2<sup>nd</sup> -4<sup>th</sup> Feb 2009 where all the senior management staff converged for the three day workshop. The workshop was facilitated by consultants from Centre for Research and Strategic Initiatives. The process allowed for inclusion of emerging issues. The vision and mission statement was revised to accommodate current demands from the changing business environment. The strategic objectives, strategies and activities were also reviewed, outputs, outcomes and their indicators developed and annual targets were set. which are reflected in the performance contract (P.C.)

### **Organization of the Strategic Plan**

1.18 This Strategic Plan document is set out in six chapters. Chapter one contains an introduction covering the importance of the Tea-sub sector to Kenya's economy; the role of the Tea Research Foundation of Kenya (TRFK) in National development; the rationale and process of reviewing the strategic plan; and organization of the Strategic plan. While chapter two provides a global overview of the Tea Industry, chapter three presents the strategic model, including the mandate of TRFK, functions, vision, mission, core values, SWOT analysis, stakeholders' analysis, strategic objectives, strategies and activities. Chapter four covers resource flows and utilization, while Chapter Five is on issues of Capacity Development and Risk Management. Chapter Six, which is the last Chapter deals with Implementation, Monitoring and Evaluation.

## CHAPTER TWO

### GLOBAL OVERVIEW OF THE TEA INDUSTRY

#### Introduction

- 2.1 This chapter of the strategic plan presents an overview of the tea industry with special emphasis to the role played by the tea industry in Kenya in the global tea trade. The details of the performance of Kenya's tea industry in terms of overall production, consumption, marketing, contribution to Kenya's GDP, employment and earnings in the last five years are discussed. To assist unravel the external forces that the industry operates, a PESTLE (political, economic, social, technology, legal, ecological) analysis is presented.
- 2.2 As mentioned in Chapter 1, tea is the leading cash crop in Kenya's agricultural sector and makes significant contribution to the economy. Internationally, Kenya ranks third in annual tea production after India and China. It accounts for 10% of world production and 20% of the export share. About 95% of the Kenyan tea is exported as a generic product which is used to blend the low quality teas from other countries. Currently, Kenya produces Black CTC tea as the only product, for which the prices have declined. This calls for diversification, branding and improvement of the quality of tea products to make Kenya a leading exporter of high quality tea. This is a major challenge to be addressed by researchers, processors and promoters. Production levels of leading tea producing countries and amounts exported are presented in Table 1.
- 2.3 Kenya's actual average tea yields per hectare basis are the highest in the world at over 2350 kg made tea/ha. Main reasons that can be attributed to the good performance include; favourable environment and weather for tea production, and Research & Development efforts. However, the good areas for tea expansion are fast getting exhausted leaving the only viable option to maximize on yields per unit area being for tea growers to uproot and replant with better yielding tea cultivars. This is however an expensive undertaking. The other alternative available especially for the smallholder tea sector is to adopt and use recommended technologies such as using recommended rates of fertilizer and proper crop husbandry for increased productivity. This calls for more aggressive technology dissemination by TRFK and other collaborators.

Table1. Major world tea production and export figures (thousand tons)

Country	Year									
	2003		2004		2005		2006		2007	
	Product ion	Export								
Kenya	294	269	328	293	329	339@				
Malawi	42	42	50	47	38	42@				
Uganda	36	34	37	35	38	33				
Tanzania	29	20	31	24	30	22				
Argentina	62	58	62	66	73	66				
Iran	50	7	50	8	25	6				
Turkey	155	7	205	6	135	7				
Bangladesh	57	12	56	12	59	9				
China 1	791	263	797	283	935	286				
India	857	173	820	179	928	188				
Indonesia	168	90	170	98	166	102				
Sri Lanka	305	291	309	291	317	298				
World*	3150	1396	3218	1536	3420	1557				

\* Some tea producing countries data not shown in the total

@ includes teas imported for export

Source: International Tea Committee, Annual bulletin of Statistics, 2005.  
Contemporary issues in Kenya's Tea sub-sector

- 2.4 Tea, being an export cash crop, implies that the external environment will greatly determine the performance of the tea industry in any country. This is especially so for Kenya which exports up to 95% of the annual black tea produced. Thus to identify the driving forces for change, a pestle analysis with the implications was conducted as shown in Table 2.

Table 2. A PESTLE analysis for the Foundation

FACTOR	IMPLICATIONS
<p><b><u>Political</u></b> Change of political regime Local and international political instability  Re-organization of government ministries</p>	<p>Change in research policies and priorities</p> <ul style="list-style-type: none"> <li>• Tariffs</li> <li>• Funding</li> <li>• Research collaborations and linkages</li> <li>• Threats in continuity of policy, funding and programs</li> <li>• Stalling of research activities</li> <li>• Environment for research and funds</li> </ul>
<p><b><u>Economic</u></b> Inflation  High input costs  Liberalization of tea production and marketing  Volatile rates  Regional Economic groupings</p>	<ul style="list-style-type: none"> <li>• Increased costs of production therefore high commodity prices</li> <li>• Increased costs of production therefore reduction in profit margin</li> <li>• Exploitation by middlemen</li> <li>• Increased competitiveness</li> <li>• High costs of procurement of research supplies and materials</li> <li>• Fluctuating tea prices affecting funding levels</li> </ul>

	<ul style="list-style-type: none"> <li>• Ease to trade</li> <li>• Ready markets</li> </ul>
<p><b><u>Social</u></b> Cultural diversity</p> <p>Unemployment HIV/AIDs</p>	<ul style="list-style-type: none"> <li>• Appreciation of cultural dynamics based on gender, age, sex etc roles in communities affects technology adaption</li> <li>• Brain-drain /high turnover of staff</li> <li>• High poverty levels</li> <li>• Reduction in productive population</li> </ul>
<p><b><u>Technology</u></b> ICT compliance</p>	<ul style="list-style-type: none"> <li>• Timely access to relevant information</li> <li>• Increased awareness</li> <li>• Reduced costs of activities</li> <li>• Exchange of ideas</li> <li>• Higher farmer income</li> </ul>
<p><b><u>Legal</u></b></p> <ul style="list-style-type: none"> <li>• Heterogeneous research institutions</li> <li>• Bureaucratic procedures</li> <li>• Mechanism for protection of IPR</li> </ul>	<ul style="list-style-type: none"> <li>• Overlap of mandates leading to conflict of interests</li> <li>• Delayed implementation</li> <li>• Wastage of resources</li> <li>• Encourages creativity and innovation</li> </ul>
<p><b><u>Environment/Ecological</u></b></p> <ul style="list-style-type: none"> <li>• Environmental changes</li> </ul>	<ul style="list-style-type: none"> <li>• Land degradation/ desertification</li> <li>• Biodiversity depletion</li> <li>• New strains of pests and diseases</li> <li>• Unfavorable weather conditions</li> </ul>

## 2.5 FORCES FOR CHANGE

The following issues prompted the need to review the Strategic Plan:

- Improved efficiency in resource utilization on production, uptake and utilization of tea technologies;
- Product diversification to meet emerging consumer needs;
- Development of technologies for unfavourable weather conditions and new strains of pests and diseases;
- Harness ICT for improved efficiency of technology development and transfer;
- Establish and strengthen local, regional and international collaborations and partnerships for technology development and transfer;
- Lobbying for policy and legal frameworks that support sustainable Tea research funding;
- Research on appropriate cultural practices on tea production, such as suitable farm input levels; and
- Development of high yielding cultivars to boost farmers' incomes – are some of the forces for change that can be identified.

## **CHAPTER THREE**

### **THE STRATEGIC MODEL**

#### **Mandate of TRFK**

3.1 The mandate of the Foundation as expounded in the Memorandum and Articles is “to promote research and investigate problems related to tea and such other crops and systems of husbandry as are associated with tea throughout Kenya including the productivity (yield), quality and sustainability of land in relation to tea planting; and matters ancillary thereto”.

#### **Functions of TRFK**

3.2 The key functions of TRFK are drawn from its mandate. The broad functions of the Foundation include the following:-

- i. To improve and manage the germplasm for enhanced tea production in Kenya;
- ii. To advise on soil fertility, inputs application and plant nutrition;
- iii. To develop appropriate technologies for tea processing and value adding in tea;
- iv. To develop environment friendly, pest and disease management methods;
- v. To develop management tools for quality tea production; and
- vi. To facilitate the transfer and dissemination of developed tea technologies and assess their impact on tea production.

#### **Vision**

3.2 “Be a global leader in research on tea”.

#### **Mission**

3.3 “Generate and disseminate sustainable technologies and knowledge through innovative research for improved productivity, processing, value addition and marketing of the Kenyan tea while conserving the environment”.

#### **Core Values**

3.4 In pursuing its mission, the Foundation will need sound guiding principles. As an ultimate measure of its performance, the Foundation is fully committed to generating impact in the tea industry through technology development and transfer in partnerships with development partners and relevant stakeholders. To achieve the required impact, the Foundation will be guided by the following core values:

- Creativity and innovativeness
- Professionalism
- Effectiveness and efficiency
- Customer satisfaction
- Partnerships and Teamwork
- Integrity
- Conservation of the environment

## SWOT and Stakeholder analysis

3.5 The objective of carrying out a SWOT analysis (Table 3) for the Foundation is to identify Strengths, Weaknesses, Opportunities and Threats. Similarly, a stakeholder analysis (Table 4) identifies the relevant stakeholders and their interests. These two analyses form the basis for setting strategic objectives, strategies and activities for the Foundation as shown in the next section.

Table 3. **Summary of Strengths, Weaknesses, Opportunities and Threats identified for TRFK.**

<b>Strengths</b>	<b>Weaknesses</b>
<ul style="list-style-type: none"> <li>- Long established research institute initially serving Kenya, Uganda and Tanzania</li> <li>- Recognized as a lead Tea Research Institution nationally, regionally and internationally.</li> <li>- Improved technologies available</li> <li>- Accessibility to robust and new research methods</li> <li>- Highly skilled human resource in research</li> <li>- Research re-organized into programmes for effectiveness and efficiency</li> <li>- Policy on intellectual property rights development but awaiting implementation</li> </ul>	<ul style="list-style-type: none"> <li>- Inadequate adoption of developed technologies</li> <li>- Limited testing sites</li> <li>- Limited and un-guaranteed funding</li> <li>- Lack of an adaptive research factory for development of technologies for value addition and product diversification</li> <li>- Inadequate and old or obsolete equipment</li> <li>- Inadequate office laboratory and library space</li> <li>- Inadequate ICT facilities</li> </ul>
<b>Opportunities</b>	<b>Threats</b>
<ul style="list-style-type: none"> <li>- Establishing and strengthening partnerships and linkages at local, regional and international levels to reduce research and manpower development costs</li> <li>- Diversification of tea products and tea value addition</li> <li>- Engagement of scientists in short term consultancies and contract research</li> <li>- Commercialization of technologies developed and information</li> <li>- Establish partnerships and linkages for funding through developed of proposals</li> <li>- Exploit existing and emerging partnership and linkages</li> <li>- Controlled use of herbicides and pesticides</li> </ul>	<ul style="list-style-type: none"> <li>- Soil degradation in tea farms resulting in poor production and re-establishment.</li> <li>- New emerging pests and diseases</li> <li>- Policy, legal and administrative frameworks that inhibit establishment of new factories</li> <li>- Reliance on wood fuel for tea processing in factories that may lead to environmental degradation</li> <li>- Fluctuations in quantities and prices of made tea in world markets</li> <li>- Funding for Research at TRFK not guaranteed in the Tea Act.</li> </ul>

Table 4. **Summary of Stakeholder analysis for TRFK**

<b>Stakeholder</b>	<b>Interests</b>
1. Government of Kenya / Ministry of Agriculture	<ul style="list-style-type: none"> <li>• Policy framework</li> <li>• Funding</li> <li>• Legal framework</li> <li>• Political Influence</li> </ul>
2. KTDA/KTGA (growers)	<ul style="list-style-type: none"> <li>• Technology transfer</li> <li>• Research agenda lobbying</li> </ul>
3. Universities	<ul style="list-style-type: none"> <li>• Capacity building</li> <li>• Quality training</li> </ul>
4. Other Research Institutions	<ul style="list-style-type: none"> <li>• Access to research materials and equipment</li> </ul>
5. Consumers	<ul style="list-style-type: none"> <li>• Quality products</li> <li>• Safety of research products (GMOs)</li> </ul>
6. Employees	<ul style="list-style-type: none"> <li>• Terms of service</li> <li>• Work conditions</li> </ul>
7. Trade unions	<ul style="list-style-type: none"> <li>• Competitive salaries for union members</li> </ul>
8. Donors	<ul style="list-style-type: none"> <li>• Funding</li> <li>• Corporate governance</li> <li>• Impacts of research</li> </ul>
9. Farmers	<ul style="list-style-type: none"> <li>• Food and economic security</li> <li>• Relevant and viable technologies</li> </ul>
10. Exporters	<ul style="list-style-type: none"> <li>• Availability of high quality tea products</li> </ul>

## **Strategic issues**

3.6. Strategic Issues are identified after mapping driving forces for change on findings of the SWOT analysis. Subsequently, the following are the strategic issues that the TRFK needs to direct its attention to:

- Development and transfer of appropriate technologies for improved productivity, i.e. breeding for high yields, unfavourable weather conditions, and emerging pests and diseases, tea production and cultural practices, value addition and product diversification and alternative sources of energy for tea processing
- Sustainable sources of funding i.e. Policy and legal frameworks for sustainable tea research funding, commercialization of proven technologies and provision of consultancy services.
- Establishing and strengthening local, regional and international partnerships and collaborations for technology development and transfer.
- The use of ICT in technology development and transfer.

## **Strategic Objectives, Strategies and Activities**

3.7 Building on strategic issues that have been derived the SWOT analysis and Stakeholders analysis, the following have been identified as the Foundation's Strategic Objectives:

1. Improved and sustained productivity and quality in the Kenyan tea industry.
2. Enhanced competitiveness and profitability of Kenyan tea in conformity with international standards.
3. Sustainable management and conservation of tea germplasm and ecosystems.
4. Enhanced organizational capacity and technical services.

3.8. The foregoing strategic objectives form the backbone of the Foundation's strategic plan. The respective strategic objectives, together with strategies and activities, are given below. The expected outputs, output indicators, outcome, outcome indicators and time frame are given in the Results Matrix (Table 5).

**Strategic Objective 1:** To improve and sustain productivity and quality of tea in smallholder and large estate sub sectors.

**Strategy 1.1:** Improve and sustain productivity of the tea under smallholder and large estate sub-sectors through improved tea varieties and production technologies.

### **Activities:**

- Develop and avail high yielding tea varieties for adverse biotic and abiotic factors for different agro-ecological and bio-economic conditions
- Develop demand-driven crop production technologies for different agro-ecological and socio-economic conditions.
- Develop materials and information on improved tea varieties and production technologies.
- Conduct training of farmers and extension staff in proven technologies

**Strategy 1.2:** Improve leaf quality of pre-processed tea in smallholders and large estate sub-sectors

**Activities:**

- Develop high quality tea varieties for adverse biotic and abiotic factors
- Develop and disseminate pre-processing technologies leading to improved leaf quality

**Strategy 1.3:** Improve adoption levels of proven tea crop production and quality technologies.

**Activities:**

- Establish most effective extension approaches and technologies
- Develop materials and information on tea production and quality.

**Strategic Objective 2:** To enhance competitiveness and profitability of Kenyan tea in conformity with international standards.

**Strategy 2.1:** Improve consistency of tea quality to conform to acceptable market standards

**Activities:**

- Develop and avail best practices in tea manufacture
- Establish an adaptive research factory for technology development
- Improve adoption of best practices in black tea processing
- Develop factory manuals for factory personnel

**Strategy 2.2:** Avail technologies for diversification of tea products

**Activities:**

- Determine the market potential/needs for new tea products
- Develop and avail technologies for tea products diversification
- Develop and avail suitable tea varieties for diversified tea products

**Strategy 2.3:** Develop and avail technologies for value addition of black tea

**Activities:**

- Develop and avail technologies for product branding

- Develop and avail packaging technologies for preserving the quality of black tea

**Strategy 2.4:** Develop technologies for cost effective energy utilization in tea processing

**Activities:**

- Evaluate different sources of energy in tea processing
- Develop cost effective and environmentally friendly energy technologies for tea processing

**Strategy 2.5:** Enhance throughput in black tea processing technologies

**Activities:**

- Develop and avail technologies that enhance preservation of post harvest leaf quality
- Develop and disseminate black tea processing and packaging technologies.
- Train factory personnel on efficient black tea processing technologies.

**Strategic Objective 3:** To promote sustainable management and conservation of tea germplasm and ecosystems

**Strategy 3.1:** Develop practices for sustainable management and conservation of tea ecosystems

**Activities:**

- Identify adaptable tea varieties for old tea lands
- Identify practices for sustainable management of old tea lands
- Train tea farmers and extension staff on proven viable technologies
- Develop materials and information on sustainable management and conservation of tea ecosystems

**Strategy 3.2:** Develop practices for sustainable management and conservation of tea germplasm

**Activities:**

- Identify practices for sustainable management of tea germplasm

**Strategic Objective 4.0:** To enhance organizational capacity and technical services.

**Strategy 4.1:** Develop and implement a comprehensive human resource strategy.

**Activities:**

- Develop policy guidelines and approaches
- Develop a performance management system
- Develop capacities in human resource

**Strategy 4.2:** Enhance financial resource

**Activities:**

- Identify and harness alternative sustainable sources of funds for research and development
- Identify opportunities, current policies and statutes that could allow for increased funding

**Strategy 4.3:** Enhance infrastructure and facilities

**Activities:**

- Undertake an inventory and identify deficiency in the existing physical and ICT infrastructure
- Develop a strategy for acquiring the required physical and ICT infrastructure
- Develop accreditation system

**Strategy 4.4:** Develop and maintain partnerships and linkages

**Activities:**

- Identify relevant stakeholders for collaboration
- Establish relevant linkages

**Strategy 4.5:** Establish and maintain a competitive compensation system for employees

**Activities:**

- Setting personal emoluments and remunerations.

Table 5: Results Matrix

<b>Strategic Objective 1. To improve and sustain productivity and quality of tea in smallholder and large estate sub-sectors</b>							
<b>Strategy</b>	<b>Activities</b>	<b>Responsibility</b>	<b>Outputs</b>	<b>Output indicator</b>	<b>Outcome</b>	<b>Outcome indicators</b>	<b>Time frame</b>
1.1 Improve and sustain the productivity of tea in smallholder and large estate sectors through improved tea varieties and production technologies.	Develop and avail high yielding tea varieties for adverse biotic and abiotic factors for different agro-ecological and bio-economic conditions	Director, CIM, KTDA, KTGA, TBK, MoA	Improved varieties developed and availed	Number	Improved and sustained productivity in smallholder and large scale	Productivity index	2005; continuous
	Develop demand-driven crop production technologies for different agro-ecological and socio-economic conditions	Director, CIM, KTDA, KTGA, TBK	Appropriate technologies developed and packaged	Number			2005; continuous
	Develop materials and information on improved tea varieties and production technologies.	Director, CIM, KTDA, KTGA, MoA, TBK	Materials and information on improved tea varieties and production technologies developed	Number	Adoption level of proven tea technologies improved	% adoption level	2005; continuous
	Conduct training of farmers and extension staff in proven technologies.	Director, CIM, KTDA, KTGA, MoA, TBK	Trainings conducted <ul style="list-style-type: none"> <li>• Farmers</li> <li>• Extension</li> <li>• Managers</li> </ul>	Number			2005; continuous

1.2 Improve leaf quality of pre-processed tea in smallholders and large estate sub-sectors.	Develop high quality tea varieties for adverse biotic and abiotic factors	Director, CIM, TBK, KTDA, KTGA, MoA	Improved high quality varieties developed and availed	Number	Improved quality of pre-processed leaf	Leaf Quality Index	2005; continuous
	Develop and disseminate pre-processing technologies leading to improved leaf quality	Director, CIM, KTDA, KTGA, TBK, MoA	Improved leaf Pre-processing technologies developed and disseminated	Number			2005; continuous
1.3 Improve adoption levels of proven tea crop production and quality technologies	Establish most effective extension approaches and technologies	Director, CIM, KTDA, KTGA, MoA, TBK	Extension approaches and technologies established	Number	Adoption levels of proven tea production and quality technologies improved	% Adoption levels	2005; continuous
	Develop materials and information on tea production and quality	Director, CIM, KTDA, KTGA, MoA, TBK	Materials and information on tea production and quality developed	Number			2005; continuous
<b>Strategic Objective 2:0 To enhance competitiveness and profitability of Kenyan tea in conformity with international standards</b>							
2.1 Improve consistency of tea quality to conform to acceptable market standards.	Develop and avail best practices in tea manufacture.	Director, QPDB, KTDA, KTGA, TBK, MoA	Best practices in tea manufacture developed and availed	Number	Improved market share	% market share	2009; continuous
	Establish an adaptive research factory for technology development.	Director, BoD QPDB, KTDA, KTGA, TBK, MoA, MoF	Adaptive Research Factory established	Number			2005; continuous
	Improve adoption of best practices	Director, QPDB, KTDA, KTGA, TBK,	Best practices in black tea processing	Number			2009; continuous

	in black tea processing.		adopted				
	Develop factory manuals for factory personnel.	Director, QPDB, KTDA, KTGA, TBK, MoA	Factory manuals developed and availed	Number			2009; continuous
2.2 Avail technologies for diversification of tea products.	Determine the market potential/needs for new tea products.	Director, QPDB, KTDA, KTGA, TBK, MoA	Needs/potential determined	Number	Improved market share	% market share	2009; continuous
	Develop and avail technologies for tea products diversification.	Director, QPDB, KTDA, KTGA, TBK, MoA	Technologies developed and availed	Number			2009; continuous
	Develop and avail suitable tea varieties for diversified tea products.	Director, CIM, QPDB, KTDA, KTGA, TBK, MoA	Tea varieties for diversified tea products developed and availed	Number			2005; continuous
2.3 Develop and avail technologies for value addition of black tea.	Develop and avail technologies for product branding.	Director, QPDB, KTDA, KTGA, TBK, MoA	Technologies for product branding developed and availed	Number	Improved market share	% market share	2005; continuous
	Develop and avail packaging technologies for preserving the quality of black tea.	Director, QPDB, KTDA, KTGA, TBK, MoA	Technologies developed and availed	Number			2009; continuous
2.4 Develop technologies for cost effective energy utilization in tea processing	Evaluate different sources of energy in tea processing.	Director, QPDB, KTDA, KTGA, TBK, KEFRI, KFS, KIRDI, KWS, KPLC, MoA, KESREF, CBK	Different sources of energy evaluated and documented.	Number	Enhanced income	Profit index	2009; continuous
	Develop cost	Director,	Technologies	Number			2009;

	effective and environmentally friendly energy technologies for tea processing.	QPDB, KTDA, KTGA, TBK, KEFRI, KFS, KIRDI, KWS, KPLC, MoA, KESREF, CBK	developed				continuous
2.5. Enhance throughput in black tea processing technologies.	Develop and avail technologies that enhance preservation of post harvest leaf quality.	Director, QPDB, KTGA, KTDA, TBK	Preservation and post harvest technologies developed and availed	Number	Efficiency and effectiveness in tea processing	Processing index	2009; continuous
	Develop and disseminate black tea processing and packaging technologies.	Director, QPDB, KTGA, KTDA, TBK	Processing and packaging technologies developed and disseminated.	Number		Black tea quality	2009; continuous
	Train factory personnel on efficient black tea processing technologies.	Director, QPDB, CIM, KTGA, KTDA, TBK,	Factory personnel trained.	Numbers			
<b>Strategic Objective 3: To promote sustainable management and conservation of tea germplasm and ecosystems</b>							
3.1 Develop practices for sustainable management and conservation of tea ecosystems	Identify adaptable tea varieties for old tea lands	Director, SPRCE, KTDA, KTGA, MoA, TBK	adaptable tea varieties identified and adopted	Number	improved productivity	Productivity index	2005; continuous
	Identify practices for sustainable management of old tea lands	Director, SPRCE, KTDA, KTGA, MoA, TBK	Sustainable management practices identified and adopted	Number			2005; - continuous
	Train tea farmers	Director,	Tea farmers	Number			2009;

	and extension staff on proven viable technologies	SPRCE, KTDA, KTGA, MoA, TBK	and extension staff on proven viable technologies trained				continuous
	Develop materials and information on sustainable management and conservation of tea ecosystems	Director, SPRCE, KTDA, KTGA, MoA, TBK	Materials and information on sustainable management and conservation of tea ecosystems developed	Number			
3.2 Develop practices for sustainable management and conservation of tea germplasm	Identify practices for sustainable management of tea germplasm	Director, SPRCE, KTDA, KTGA, MoA, TBK	Sustainable management practices identified and adopted	Number	Enhanced conservation	Tea diversity index	2005; continuous
<b>Strategic Objective 4: To enhance organizational capacity and technical services</b>							
4.1 Develop and implement a comprehensive human resource strategy.	Develop policy guidelines and approaches	Director, BoD TSS, MoA, SCAC.	Policy guidelines and approaches developed.	Number	Improved performance.	Performance index.	2005-June 2009
	Develop a performance management system	Director, BoD TSS, MoA, SCAC.	Performance management system developed	Number			Sept. 2009
	Develop capacities in human resource	Director, TSS, BoD, MoA, SCAC.	Human resource capacity developed	Number			2005; continuous
4.2 Enhance financial resource.	Identify and harness alternative sustainable sources of funds for research and	Director, BoD, TSS, TBK, MoA.	Alternative sources of funds identified and harnessed.	Number	Sustainable funding sources	Amount	2005, continuous

	development. Identify opportunities current policies and statutes that could allow for increased funding	Director, BoD, KTDA, KTGA, EATTA, TBK, MoA, NARS, MoF, ATP	Opportunities identified	Number			
4.3. Enhance infrastructure and facilities	Undertake an inventory and identify deficiency in the existing physical and ICT infrastructure	Director, TSS	Inventory report	Number	Improved performance	Performance Index	2005, continuous
	Develop a strategy for acquiring the required physical and ICT infrastructure	Director, BoD, TSS, TBK, MoA, MoF, SCAC	Strategy developed	Number			Sept 2009; Continuous
	Develop accreditation systems	Director, BoD, TSS, TBK, MoA,	ISO accreditation	Number			2005, continuous
4.4: Develop and maintain partnerships and linkages	Identify relevant stakeholders for collaboration	Director, TSS, CIM, QBDB, SPRCE	Stakeholders identified	Number	Improved performance		2005, continuous
	Establish relevant linkages	Director	Linkages established	Number			2005, continuous
4.5 Establish and maintain a competitive compensation system for employees	Setting personnel emoluments and remunerations	Director	Efficiency and retention	Number			

## **CHAPTER FOUR**

### **RESOURCE FLOWS AND UTILIZATION**

#### **Financial Resources**

- 4.1 As indicated in chapter two, the Foundation is funded mainly from a levy through the Tea Board of Kenya (TBK). The core funds cover the personnel emoluments and recurrent operational costs. No provision is made for capital development and improved terms and conditions of service for employees. Furthermore, the actual levels of funding through the levy depend on the marketed tea and the prevailing prices in the international markets. While it is anticipated that the government, through TBK, will take more responsibility in funding tea research and development activities, as tea is the leading cash crop, the Foundation is committed to establishing sustainable alternative sources of funds. The current and potential alternative sources include earnings from the tea estate, commercialization of proven technologies, consultancies and contract research and government grants.

The Foundation generates on average Ksh. 45 million per year from the tea estate. Currently, this amount is only able to support the operational costs of the Estate. The Foundation is however committed to improving the earnings through increasing production of tea per unit area, improving the quality of tea, and product diversification, thus assisting to fund research.

- 4.2 The Foundation has a core staff of qualified and experienced scientists. Through proper institutional arrangements, the Foundation can use the scientists to raise additional funds through consultancies, research contracting and collaborations. The scientists can also attract additional funding through writing research proposals to be funded by grant awarding agencies, such as Ford Foundation, Rockefeller Foundation, ASARECA, the International Foundation for Science (IFS), United Nations Development Programme (UNDP), Japanese International Cooperation Agency (JICA), DFID and National Council of Science and Technology (NCST), Third World Academy of Science (TWAS). This will require the Foundation to create capacities in these areas.
- 4.3 The Foundation is exploring ways of commercializing its proven technologies. The possibilities include: (i) the Foundation to set-up a firm for technology commercialization, (ii) the Foundation going into a joint venture with an existing firm, and (iii) licensing the technologies to those firms that agree to pay royalties. The success will depend on the

extent of the operationalization of the intellectual property policies, laws, policy and guidelines to facilitate royalty agreements.

- 4.4 The Foundation will explore possibilities of partnerships with the stakeholders in financing tea research and development. This will be one of the strong points in the establishment of partnerships and linkages. Special emphasis will be on strong partnerships with private sector in financing tea research and development.
- 4.5 The resource flows for TRFK, in Kenya Shillings, as shown in Table 6.

Table 6: **RESOURCE FLOWS**

<b>Strategic Objective 1: To improve and sustain productivity and quality of tea in smallholder and large estate sub-sectors</b>								
<b>Strategy</b>	<b>Activities</b>	<b>Responsibility</b>	<b>Funding</b>	<b>2005/2006</b>	<b>2006/2007</b>	<b>2007/2008</b>	<b>2008/2009</b>	<b>2009/2010</b>
1.1 Improve and sustain the productivity of tea in smallholder and large estate sectors through improved tea varieties and production technologies.	Develop and avail high yielding tea varieties for adverse biotic and abiotic factors and different agro-ecological and bio-economic conditions	Plant Breeder, Pathologist, Entomologist	TBK	387,091	424,492	403,579	1,018,600	1,045,430
	Develop demand-driven crop production technologies for different agro-ecological and socio-economic conditions	Plant Breeder, Socio-economist, Soil Chemist, Horticulturist, Agronomist, Pathologist, Entomologist	TBK	1,271,871	1,394,758	1,326,045	1,289,890	3,434,986
	Develop materials and information on improved tea varieties and production technologies	Agr. Chemist, Soil chemist, Horticulturist	TBK	608,286	667,058	634,195	624,620	1,642,819
	Conduct training of farmers and extension staff in proven technologies.	Plant Breeder, Socio-economist, Soil Chemist, Horticulturist, Agronomist, Pathologist, Entomologist	TBK	276,494	303,208	288,271	312,310	746,736

<b>Strategic Objective 1: To improve and sustain productivity and quality of tea in smallholder and large estate sub-sectors</b>								
<b>Strategy</b>	<b>Activities</b>	<b>Responsibility</b>	<b>Funding</b>	<b>2005/2006</b>	<b>2006/2007</b>	<b>2007/2008</b>	<b>2008/2009</b>	<b>2009/2010</b>
1.2 Improve leaf quality of pre-processed tea in smallholders and large estate sub-sectors.	Develop high quality tea clones/varieties for adverse biotic and abiotic factors	Plant Breeder, Pathologist, Entomologist, Horticulturist,	TBK	1,493,066	1,637,325	1,556,662	1,517,050	4,032,374
	Develop materials and information on tea production and quality	Agr. Chemist, Soil chemist, Horticulturist, Pathologist, Entomologist, Plant breeder	TBK	608,286	667,058	634,195	624,620	1,642,819
1.3 Improve adoption levels of proven tea crop production and quality technologies	Establish most effective extension approaches and technologies	Socio-Economist	TBK	276,494	303,208	288,271	312,310	746,736
	Develop materials and information on tea production and quality	Agr. Chemist, Soil chemist, Horticulturist	TBK	608,286	667,058	634,195	624,620	1,642,819
<b>Totals</b>				<b>5,529,874</b>	<b>6,064,166</b>	<b>5,765,413</b>	<b>5,699,400</b>	<b>14,934,720</b>

<b>Strategic Objective 2: To enhance competitiveness and profitability of Kenyan tea in conformity with international standards</b>								
<b>Strategy</b>	<b>Activities</b>	<b>Responsibility</b>	<b>Funding</b>	<b>2005/2006</b>	<b>2006/2007</b>	<b>2007/2008</b>	<b>2008/2009</b>	<b>2009/2010</b>
2.1 Improve consistency of tea quality to conform to acceptable market standards.	Develop and avail best practices in tea manufacture.	Food Chemist, Biochemist	TBK	559,493	613,551	580,857	578,840	1,504,652
	Establish an adaptive research factory for technology development.	Director	TBK	-	-	-	185,000,000	204,050,000

<b>Strategic Objective 2: To enhance competitiveness and profitability of Kenyan tea in conformity with international standards</b>								
<b>Strategy</b>	<b>Activities</b>	<b>Responsibility</b>	<b>Funding</b>	<b>2005/2006</b>	<b>2006/2007</b>	<b>2007/2008</b>	<b>2008/2009</b>	<b>2009/2010</b>
	Improve adoption of best practices in black tea processing.	Food Chemist, Biochemist	TBK	279,747	306,775	290,429	289,420	752,326
	Develop factory manuals for factory personnel.	Food Chemist, Biochemist, Factory Engineer	TBK	279,747	306,775	290,429	289,420	752,326
2.2 Avail technologies for diversification of tea products.	Determine the market potential/needs for new tea products.	Socio-Economist	TBK	279,747	306,775	290,429	312,310	752,326
	Develop and avail technologies for tea products diversification.	Plant breeder, Food chemist, Biochemist	TBK	559,493	613,551	580,857	578,840	1,504,652
	Develop and avail suitable tea varieties for diversified tea products.	Plant breeder, Food chemist, Biochemist	TBK	769,303	843,633	798,678	806,000	2,068,896
2.3 Develop and avail technologies for value addition of black tea.	Develop and avail technologies for product branding.	Food chemist, Biochemist	TBK	559,493	613,551	580,857	578,840	1,504,652
	Develop and avail packaging technologies for preserving the quality of black tea.	Food chemist, Biochemist	TBK	559,493	613,551	580,857	578,840	1,504,652
2.4 Develop technologies for cost effective energy utilization in tea processing	Evaluate different sources of energy in tea processing.	Forester, Factory Engineer	TBK	979,113	1,073,714	1,016,500	992,250	2,633,140
	Develop cost effective and environmentally friendly energy technologies for tea processing.	Forester, Factory Engineer	TBK	419,620	613,551	435,643	413,410	1,128,489
2.5. Enhance throughput in black tea processing	Develop and avail technologies that enhance preservation of post harvest leaf quality.	Food chemist, Biochemist	TBK	559,493	613,551	580,857	578,840	1,504,652

<b>Strategic Objective 2: To enhance competitiveness and profitability of Kenyan tea in conformity with international standards</b>								
<b>Strategy</b>	<b>Activities</b>	<b>Responsibility</b>	<b>Funding</b>	<b>2005/2006</b>	<b>2006/2007</b>	<b>2007/2008</b>	<b>2008/2009</b>	<b>2009/2010</b>
technologies.	Develop and disseminate black tea processing and packaging technologies.	Food chemist, Biochemist	TBK	559,493	613,551	580,857	578,840	1,504,652
	Train factory personnel on efficient black tea processing technologies.	Food chemist, Biochemist	TBK	559,493	613,551	580,857	601,730	1,504,652
<b>Totals</b>				<b>6,993,664</b>	<b>7,669,387</b>	<b>7,260,713</b>	<b>192,677,580</b>	<b>18,808,146.00</b>

<b>Strategic Objective 3: To promote sustainable management and conservation of tea germplasm and ecosystems</b>								
<b>Strategy</b>	<b>Activities</b>	<b>Responsibility</b>	<b>Funding</b>	<b>2005/2006</b>	<b>2006/2007</b>	<b>2007/2008</b>	<b>2008/2009</b>	<b>2009/2010</b>
3.1 Develop practices for sustainable management and conservation of tea ecosystems	Identify adaptable tea varieties for old tea lands	Soil chemist, plant breeder, Horticulturist	TBK	1,159,647	1,271,691	1,238,099	1,219,410	3,207,172
	Identify practices for sustainable management of old tea lands	Soil chemist, Horticulturist	TBK	935,199	1,025,558	998,467	1,000,470	2,586,429
	Train tea farmers and extension staff on proven viable technologies	FAO, Socio Economist	TBK	299,264	328,178	319,509	312,310	827,657
	Develop materials and information on sustainable management and conservation of tea ecosystems	Soil chemist, Horticulturist, Pathologist, Agric Chemist	TBK	299,264	328,178	319,509	312,310	827,657
3.2 Develop	Identify practices for	Plant	TBK					2,896,800

<b>Strategic Objective 3: To promote sustainable management and conservation of tea germplasm and ecosystems</b>								
<b>Strategy</b>	<b>Activities</b>	<b>Responsibility</b>	<b>Funding</b>	<b>2005/2006</b>	<b>2006/2007</b>	<b>2007/2008</b>	<b>2008/2009</b>	<b>2009/2010</b>
practices for sustainable management and conservation of tea germplasm	sustainable management of tea germplasm	Breeder, Geneticist, Pathologist, Entomologist		1,047,423	1,148,624	1,118,283	1,103,640	
<b>Total</b>				<b>3,740,797</b>	<b>4,102,230</b>	<b>3,993,867</b>	<b>3,948,140</b>	<b>10,345,715.00</b>

<b>Strategic Objective 4: To enhance organizational capacity and technical services</b>								
<b>Strategy</b>	<b>Activities</b>	<b>Responsibility</b>	<b>Funding</b>	<b>2005/2006</b>	<b>2006/2007</b>	<b>2007/2008</b>	<b>2008/2009</b>	<b>2009/2010</b>
4.1 Develop and implement a comprehensive human resource strategy.	Develop policy guidelines and approaches	Director, FAM, HRO	TBK	-	-	-	483,330	-
	Develop a performance management system	Director, FAM, HRO	TBK	-	-	-	1,449,990	-
	Develop capacities in human resource	Director, FAM, HRO	TBK	3,597,600	2,336,000	2,026,300	966,660	3,780,640
4.2 Enhance financial resource.	Identify and harness alternative sustainable sources of funds for research and development.	Director, FAM, All senior staff	TBK	-	25,500,000	25,500,000	77,000,000	40,772,000
	Identify opportunities and statutes that could allow for increased funding	Director, FAM,	TBK	-	-	-	483,330	-
4.3. Enhance infrastructure and facilities	Undertake an inventory and identify deficiency in the existing physical and ICT infrastructure	Director, FAM	TBK	-	-	-	241,665	-

<b>Strategic Objective 4: To enhance organizational capacity and technical services</b>								
<b>Strategy</b>	<b>Activities</b>	<b>Responsibility</b>	<b>Funding</b>	<b>2005/2006</b>	<b>2006/2007</b>	<b>2007/2008</b>	<b>2008/2009</b>	<b>2009/2010</b>
	Develop and implement a strategy for acquiring the required physical and ICT infrastructure	Director, FAM	TBK	1,125,000	1,125,000	2,340,000	966,660	35,976,642
	Develop accreditation systems	Director	TBK	-	-	-	600,000	5,000,000
<b>4.4:</b> Develop and maintain partnerships and linkages	Identify relevant stakeholders for collaboration	Director	TBK				483,330	-
	Establish relevant linkages	Director	TBK	900,000	800,000	800,000	966,660	1,500,000
<b>4.5</b> Establish and maintain competitive compensation system to employees	Setting personnel emoluments and remunerations	Director	TBK	37,212,572	40,274,020	41,328,159	77,299,000	163,158,150
<b>Total</b>			TBK	<b>42,835,172</b>	<b>70,035,020</b>	<b>71,994,459</b>	<b>83,340,625</b>	<b>250,187,432</b>
<b>GRAND TOTAL</b>				<b>75,063,842</b>	<b>87,870,803</b>	<b>89,014,452</b>	<b>268,840,625</b>	<b>581,300,000</b>

## **1. Technical support**

Personnel emoluments and remunerations in 2008/09 are provided at Ksh 77,299,000, while the 2009/10 year as Kshs 163,158,150, thereafter grows at the rate of 152%. It is assumed that in 2008/09 year, government funding will be to cater better terms and conditions that will be competitive to retain the staff. Areas of concern include; salary enhancement, house allowances, housing loan schemes for TRFK senior staff.

### **Other areas include:**

#### **(a) HIV/AIDS, drugs and substance abuse**

These are costs expected to be incurred in the management of HIV/Aids, voluntary testing, Counseling services and support for children orphaned by HIV/Aids pandemic.

#### **(b) Office and establishment**

These are telephone, fax, photocopy, internet, postage, stationery, uniforms and other office costs, repair and maintenance of office equipment, electricity and water.

#### **(c) Travel and Transport**

This caters for subsistence for staff while on duty outside the station, fuels and vehicle service and repairs.

#### **(d) Board Costs**

Caters for board expenses such as sitting allowances, subsistence and travel reimbursements.

#### **(e) Service costs**

Caters for costs such as audit fees, consultancies, advertisements, insurances, legal fees, bank charges, land rates and depreciation of motor vehicles and office equipment.

#### **(f) Monitoring and Evaluation office**

For effective implementation of the Strategic Plan, it is important to establish a functional M&E office. The office will provide linkages among and within programmes. It will also serve as a corporate affairs office.

## **2. Development Expenditure**

### **(a) Factory**

The total cost the adaptive research factory to be established is estimated at Kshs 389,050,000. It is being anticipated that the project will be undertaken in two phases beginning in year 2008/09 at Kshs 185,000,000 and in 2009/10 at Kshs 204,050,000.

**(b) Buildings**

The Foundation has planned to embark on expansion and modernization of laboratories and provision of space for support staff over the plan period. Also a water plant for adequate and safe water for the laboratories and TRFK population has been planned for 2009/10.

**3. Revenue Plan**

**(a) TBK Subvention**

TRFK will continue to request for enhancement of the subvention from TBK.

**(b) Tea Board Capital funding**

In 2005/6, TBK funded the procurement of a HPLC at a cost of Kshs 9m. However, the other equipments planned for earlier, e.g. molecular marker (genetic analyzer) at the cost of Kshs 7.2m in 2006/07, AAS at a cost of Kshs 10m in 2007/08, freeze drier at the cost of Kshs 1.0 m in 2008/09 and pH meters at a cost of Kshs 0.575m in 2009/10 are yet to be procured.

**(c) Estate Revenue**

It is anticipated that the Estate will continue using efficient cost cutting management to enhance profits.

**(d) Research Grants – Donor**

Project proposals will continue to be developed for funding by the donor community.

**(e) Research Grants – GoK**

The Government of Kenya will be approached to support research. It is anticipated that the grants will be received from the Research Innovation and Technology Sector.

**(f) Factory income**

Timbilil Research Factory proposal has been developed and it had been hoped that the project will be funded in 2008/09. It had been anticipated that it would generate revenue from 2009/10.

**(g) Service Income**

Revenue is expected to accrue from the sale of analytical, consultancy services and commercialization of developed technologies and varieties. It is anticipated that varieties will be exported to countries which have already shown interest during the strategic plan duration.

**(h) Copyright and information**

Revenue is expected to accrue from commercialization of intellectual property rights patented by the Foundation.

**(i) Project funding**

It is expected that specific proposals will be developed for specific/target projects and that all funding will be found.

## **CHAPTER FIVE**

### **CAPACITY DEVELOPMENT AND RISK MANAGEMENT**

#### **Introduction**

- 5.1 The first dimension that influences the performance of an organization, and which is the focus of this chapter, is capacity. The objective of organizational capacity development is to improve organizational performance to address known issues and react to emerging issues that arise in today's rapidly changing world. While external agents may provide support for capacity development, organizations must take ultimate responsibility for developing their own capacities.
- 5.2 Different elements of capacity can be classified broadly into two types of capacity: resources and management. Resources include human resource, physical resource (infrastructure, equipment, vehicles, etc) financial resources, knowledge and technology. Management capacity comprises strategic leadership, programme and process management and collaborations. The capacity areas and their implications on the achievement of the Foundation's mission and goals will be described in detail in the subsequent sections of this chapter.

#### **Capacity Development Strategy for Human Resource**

- 5.3 Staff of the Foundation constitutes the most important resource. Human capital is central to realizing the anticipated results of enhanced generation of technologies, transfer of knowledge and technologies. To make a positive impact at the community and national levels through a transformational multi-faceted and multi-dimensional approach towards increasing productivity and profitability of tea, the Foundation will continuously engage and challenge its human capital. To do this, the Foundation has developed a comprehensive human resource manual that will be implemented to enhance productivity.
- 5.4 Human resource planning is the first and most important step in effective human resource development and management. It involves forecasting the Foundation's needs and how these needs are met. With the changes in the operating environment, the Foundation needs are constantly changing. Therefore, an optimal multi-disciplinary mix of scientists and support staff are required to achieve and sustain effective implementation of research and development. Through effective human resource planning, inadequacies in human resources identified in the SWOT and stakeholders analysis in chapter three and emerging issues are addressed herein.

- 5.5 Through human resource planning, priorities for human resource development are identified. The key elements of human resource development are learning, education and training. The Foundation lays emphasis on training, focusing on the job training, role based training and career training. The current process begins with assessing the needs of individual staff, operational and organizational. Once these needs are identified, individuals are trained and capacities developed. In the developed human resource strategy, the Foundation adopts a holistic approach to human capital.
- 5.6 In line with the government policy of performance contracting, the Foundation has implemented staff performance contracting. Consequently the Foundation has achieved better results from individuals and teams of workers within an agreed framework of planned goals, standards and competence requirements inline with the government performance management. Performance management emphasizes development and the initiation of self-managed learning plans as well as the integration of individual and corporate objectives.
- 5.7 Motivating employees is very important for the success of an organization. Although the Foundation is concerned with what it can do to achieve sustainable and high levels of performance through its employees, it does not have a comprehensive motivation strategy. Future emphasis will be on development of motivational approaches focusing on terms and conditions of service, as well as the institutional culture change considering the core values, shared vision and mission, team work and focusing on all stakeholders.

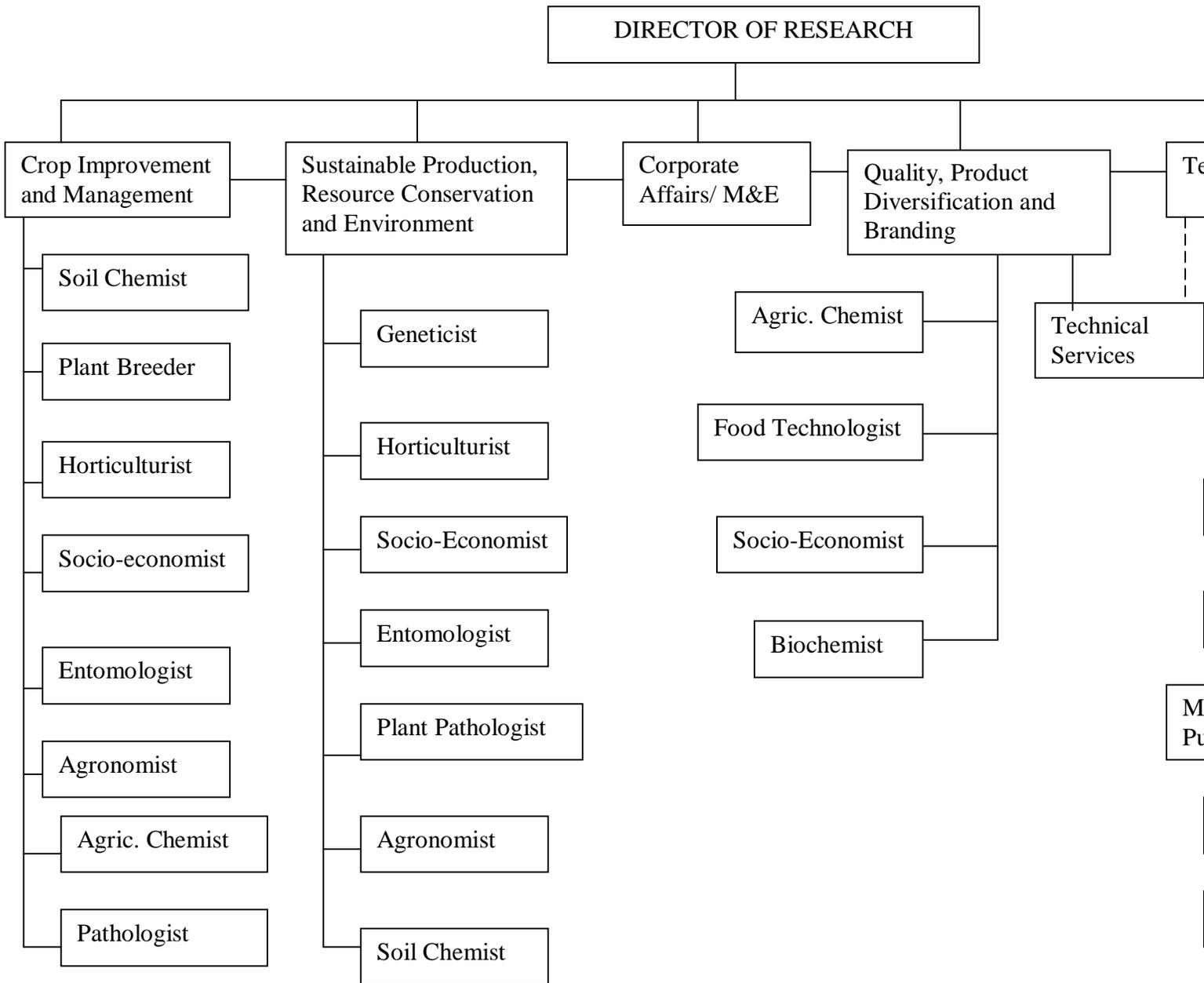
### **Organizational structure**

- 5.8 Prior to the implementation of the programme and inter-disciplinary approach to technology development and transfer, the functions of the Foundation were based on departmental and disciplinary approach. This has since been replaced by a more effective and efficient programme approach (Figure 2).

### **Capacity development Strategy for Physical Resources**

- 5.9 To enhance performance and achieve the expected impact, the Foundation will develop and maintain modernized physical resources, including office, laboratory, library and workshop space; information communication technology infrastructure; and acquire relevant laboratory equipment, vehicles and service facilities. The emphasis will be on adequacy, appropriateness and use of these resources.

**Figure 2: ORGANIZATIONAL STRUCTURE**



## **Capacity development Strategy for Financial Resources**

- 5.10 In order to enhance research activities, the Foundation will identify sustainable sources of funding. Pursuance to this, TRFK will develop a strategy acquiring these funds. However, the government has started committing research funds through the Research Technology and Innovation Sector budget. Hopefully, this funding will be sustained. Other internal sources of funding including earnings from the tea estate, commercialization of proven technologies; consultancies and contract research will be enhanced.
- 5.11 The Foundation has a core staff of qualified and experienced scientists. Through proper strategies, the Foundation will continue using the scientists to attract additional funding through competitive grant winning research proposals from development partners and other collaborators. This requires the Foundation to create capacities in these areas.

## **Tea Industry Task Force recommendation on funding**

- 5.12 The 2007 Tea Industry Task Force in their report recommended measures that would enhance the funding base of TRFK. These include the following;
- i. To amend the Tea Act to provide for predetermined levels from cess and levies collected through the Tea Board of Kenya.
  - ii. TRFK to expand her financial base through consultancies, training programs and collaboration with interested funding agents.
  - iii. Special projects such as research factory, laboratory equipments and facilities to be funded through the proposed tea development and Value Addition Fund.
  - iv. Government to consider funding specific research programs on a one-off basis.

## Risk and Risk Management

- 5.13 Risk is a state of uncertainty where some of the possibilities involve a loss, catastrophe, or other undesirable outcome. Mitigating risks, or lessening their adverse impacts, is at the heart of its effective management. If attention were not paid to expected risks, planned activities would end in disaster. If implemented correctly a successful risk mitigation strategy reduces any adverse variations in the financial returns or outputs. To implement the current strategic plan, the risks and their mitigation measures are highlighted in Table 7.

Table 7: **Risk and risk mitigation**

Risks	Risk mitigation
TBK subvention GoK funding/Change of regulating policy	Lobby for a review of the Tea Act Enactment of funding policy, political will
Adaptive Tea factory	Enactment of funding policy
Timbilil commercial tea farm	Environmental conservation sensitization
Uncertainties in International tea market	Identifying alternative source of funding

## **CHAPTER SIX**

### **IMPLEMENTATION, MONITORING AND EVALUATION**

#### **Introduction**

6.1 The strategic plan has been developed in the context of the prevailing internal and external environments under which the Foundation operates. Under these environments, there is need for a re-orientation of the Foundation to effectively address the challenges facing the tea industry. The realization of the strategic objectives outlined in the plan requires sound implementation plans.

#### **Implementation Plans (IP) and Annual Work Plans**

6.2 In actualizing the strategic plan, the Foundation engaged its staff in developing research and development activities that articulate the vision, mission and strategic objectives. To achieve these, the Foundation developed a five-year IP for the period 2005 – 2010; taking into consideration the prevailing policies and the contemporary farmers' constraints and opportunities. The process of developing the Strategic Plan was consultative and participatory and included all stakeholders. In order to implement the strategic plan, the Foundation's scientists are required to develop well-focused research/development activities in accordance with the strategic objectives and strategies outlined in chapter three of this strategic plan.

6.3 For the implementation of the plan, the Foundation has developed comprehensive annual work plans based on the activities outlined in the logical framework. This will provide details on the targets to be achieved, the expected outputs, sources of funds, implementing scientists and collaborating institutions. The annual performance contracts will draw their targets from the annual implementation plans. During the implementation, there will be continuous and participatory monitoring and evaluation by all stakeholders.

## Monitoring and Evaluation

- 6.4 The logical framework (Table 8) forms the basis for monitoring and evaluation (M&E). Traditionally, M&E is carried out to ensure accountability. Governments and development partners expect information on how organizations utilize their resources in pursuit of the expected outcomes. These accountability requirements make it necessary for organizations to prepare periodic progress reports, mid-term and end of project evaluations. Managers justifiably view this type of monitoring and evaluation as a “necessary evil” that has a direct value for the organization. With performance contracting, M&E is a necessary monitoring tool. In this regard, the Foundation has internalized the process of M&E.
- 6.5 The purpose of monitoring is to ensure that activities are proceeding according to plan, to provide a record of how inputs are used, and to warn of deviations from initial goals and expected outcomes. It is a process that systematically and critically observes events connected to a project in order to control activities and adapt them to the conditions.
- 6.6 In the context of agricultural research and development, monitoring includes the periodic recording, analysis, reporting and storage of data about key research and development indicators. Integrating monitoring enhances the accuracy of the collected information, reduces costs of acquisition, increases the focus of the participating staff and reduces the time lag for management corrections. Monitoring is essential for evaluation.
- 6.7 Evaluation is an assessment at a point in time, often after the fact, that determines the worth, value, or quality of any activity, project, programme, or policy. It is used to assess the following:
- potential impact of research in priority setting and planning exercises
  - performance and quality of activities in progress
  - successful completion and relevance of activities
  - Ultimate impact of results on the achievements of development objectives.
- 6.8 The following are the four types of evaluation:
- **Ex-ante** evaluation: occurs before the event and is used to assess potential impact of research
  - **On-going evaluation**: this is carried out during the event to evaluate performance and quality of the research project in progress

- **Ex-post evaluation:** carried out immediately after the event to determine whether project objectives were attained, causes for discrepancies, costs, and the quality and relevance of the research results
- **Impact evaluation:** carried out several years after research results have been achieved to assess ultimate impact.

**Table 8: LOGICAL FRAMEWORK**

<b>Narrative Summary</b>	<b>Objectively Verifiable Indicators</b>	<b>Means of Verification</b>	<b>Assumptions</b>
<b>Overall Goal</b> To contribute towards the achievement of an average growth rate of 7 per cent per year for the agricultural sector by the year 2012	Percentage contribution to GDP	Economic Surveys	Strategic plan is implemented
<b>Purpose</b> To generate and disseminate, sustainable technologies and knowledge, through innovative research, for improved production, value adding and marketing of Kenyan tea while conserving the environment	Percentage increase in agricultural growth	Economic Surveys	Strategic plan is implemented
<b>Strategic objective 1</b>			
<b>Outcomes</b> 1.1 Improved and sustained productivity in smallholder and large scale 1.2 Improved quality of pre-processed leaf 1.3 Adoption levels of proven tea production and quality technologies improved	1.1. Productivity index 1.2 Leaf quality Index 1.3 Percent adoption of proven technologies	1.1 TBK ,KTDA,KTGA Reports 1.2 QPRs, TRFK,KTDA, KTGA Annual reports, ,Quarterly Bulletins, Training reports 1.3 TRFK Annual reports, Tea journals,Quartely Bulletins	1.1 Farmers willing to adopt technology
<b>Output</b> 1.1.1 Improved varieties developed and availed 1.1.2 Appropriate technologies developed and packaged 1.1.3 Trainings conducted <ul style="list-style-type: none"> <li>• Farmers</li> <li>• Extension staff</li> </ul>	1.1.1 New and high yielding varieties 1.1.2 Number of technologies documented. 1.1.3 % farmer, extension staff and Estate managers trained.	<b>1.1.1</b> TRFK Annual reports, Tea journals,Quartely Bulletins <b>1.1.2</b> TRFK Annual reports, Tea journals,Quartely Bulletins <b>1.1.3</b> QPRs, TRFK,KTDA, KTGA Annual reports,	1.1.1 Farmers are willing to adopt technology

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Assumptions
<ul style="list-style-type: none"> <li>• Estate managers</li> <li>1.2.1 Improved high quality varieties developed and availed</li> <li>1.2.2 Improved leaf Pre-processing technologies developed and disseminated</li> <li>1.3.1 Extension approaches and technologies established</li> <li>1.3.2 Materials and information on tea production and quality developed</li> </ul>	<ul style="list-style-type: none"> <li>1.2.1 New and high quality varieties</li> <li>1.2.2 Number of technologies developed and disseminated.</li> <li>1.3.1 Number of extension approaches and Technologies established</li> <li>1.3.2 Number of publications/ materials</li> </ul>	<ul style="list-style-type: none"> <li>,Quartely Bulletins, Training reports.</li> <li>1.2.1 TRFK Annual reports, Tea journals,Quartely Bulletins</li> <li>1.2.2 TRFK Annual reports, Tea journals,Quartely Bulletins</li> <li>1.3.1 TRFK Annual reports, Tea journals,Quartely Bulletins, survey report</li> <li>1.3.2 TRFK Annual reports, Tea journals,Quartely Bulletins.</li> </ul>	
<p><b>Activities</b></p> <ul style="list-style-type: none"> <li>1.1.1.Develop and avail high yielding tea varieties for adverse biotic and abiotic factors and different agro-ecological and bio-economic conditions</li> <li>1.1.2 Develop demand-driven crop production technologies for different agro-ecological and socio-economic conditions</li> <li>1.1.3 Conduct trainings</li> <li>1.2.1 Develop high quality tea clones/varieties for adverse biotic and abiotic factors</li> <li>1.2.2 Develop and disseminate pre-processing technologies leading to improved leaf quality</li> <li>1.3.1 Establish most effective extension approaches and technologies</li> <li>1.3.2 Develop materials and information on tea production and quality</li> </ul>	<ul style="list-style-type: none"> <li>1.1.1. New and high yielding varieties</li> <li>1.1.2. Number of technologies documented.</li> <li>1.1.3. % farmer, extension staff and Estate managers trained.</li> <li>1.2.1 New and high quality varieties</li> <li>1.2.2 Number of technologies developed and disseminated.</li> <li>1.3.1 Number of effective technologies identified</li> <li>1.3.2 Number of publications/ materials</li> </ul>	<ul style="list-style-type: none"> <li>1.1.1. TRFK Annual reports, Tea journals,Quartely Bulletins</li> <li>1.1.2. TRFK Annual reports, Tea journals,Quartely Bulletins</li> <li>1.1.3. QPRs, TRFK,KTDA, KTGA Annual reports, ,Quartely Bulletins, Training reports.</li> <li>1.2.1 TRFK Annual reports, Tea journals, Quartely Bulletins</li> <li>1.2.2 TRFK Annual reports, Tea journals, Quartely Bulletins</li> <li>1.3.1 TRFK Annual reports, Tea journals, Quartely Bulletins, survey report</li> <li>1.3.2 RFK Annual reports, Tea journals, Quartely Bulletins</li> </ul>	<ul style="list-style-type: none"> <li>1.1.1 Farmers are willing to adopt.</li> <li>1.1.2. Farmers are willing to adopt.</li> <li>1.1.3. Funds will be available</li> <li>1.2.1 Farmers are willing to adopt</li> </ul>
<b>Strategic objective 2</b>			
<p><b>Outcomes</b></p> <ul style="list-style-type: none"> <li>2.1 Improved market share</li> <li>2.2 Improved market share</li> <li>2.3 Improved market share</li> <li>2.4 Enhanced income</li> </ul>	<ul style="list-style-type: none"> <li>2.1 Percent increase in market share</li> <li>2.2 Percent increase in market share</li> <li>2.3 Percent increase in market share</li> <li>2.4 Increase in profit index</li> </ul>	<ul style="list-style-type: none"> <li>2.1 Economic Surveys</li> <li>2.2 Economic Surveys</li> <li>2.3 Economic Surveys</li> <li>2.4 Economic Surveys</li> </ul>	<ul style="list-style-type: none"> <li>2.1 Stable tea market</li> <li>2.2 Stable tea market</li> <li>2.3 Stable tea market</li> <li>2.4 Stable tea market</li> </ul>

<b>Narrative Summary</b>	<b>Objectively Verifiable Indicators</b>	<b>Means of Verification</b>	<b>Assumptions</b>
2.5 Efficiency and effectiveness in tea processing	2.5 Increase in processing index	2.5 Economic Surveys	2.5 Stable tea market
<b>Outputs</b>			
2.1.1 Best practices in tea manufacture developed and availed	2.1.1 Increase in black tea quality	2.1.1 EATTA Reports Factory Reports	2.1.1. Funds are available
2.1.2 Adaptive Research Factory established	2.1.2 Operational factory	2.1.2 TRFK Annual Technical report, Quarterly Bulletin	2.1.2 Donor Funds availed
2.1.3 Best practices in black tea processing adopted	2.1.3 Increase in black tea quality	2.1.3 EATTA Reports	2.1.3. Funds are available
2.1.4 Factory manuals developed and availed	2.1.4 Increase in black tea quality	2.1.4 Factory Reports	2.1.4 Manuals put to use
2.2.1 Needs and potential determined	2.2.1 Survey reports	2.2.1 Survey reports TRFK Annual Technical report	2.2.1 Funds are available
2.2.2 Technologies developed and availed	2.2.2 Increase in the number of tea products	2.2.2 Survey reports TRFK Annual Technical report	
2.3.1 Tea varieties for diversified tea products developed and availed	2.3.1 Increase in the number of tea products	2.3.1 Survey reports TRFK Annual Technical report	
2.3.2 Technologies for product branding developed and availed	2.3.2 Increase in the number of branded products	2.3.2 Survey reports TRFK Annual Technical report	
2.4.1 Different sources of energy evaluated and documented.	2.4.1 Project/Survey report	2.4.1 Survey reports TRFK Annual Technical report	
2.4.2 Cost effective and environmentally friendly technologies developed	2.4.2 Increase in factory efficiency	2.4.2 Factory reports	
2.5.1 Preservation technologies of black tea developed and availed	2.5.1 Increase in black tea quality	2.5.1 EATTA Reports	
2.5.2 Factory personnel trained.	2.5.2 Increase in black tea quality	2.5.2 EATTA Reports	
<b>Activities</b>			
2.1.1 Develop and avail best practices in tea manufacture	2.1.1 Number of practices developed	2.1.1 TRFK Annual Technical report,	2.1.1. Funds are available
2.1.2 Establish an adaptive research factory for technology development	2.1.2 Adaptive factory established	2.1.2 TRFK Annual Technical report Quarterly Bulletin	2.1.2 Donor funding availed
2.1.3 Improve adoption of best practices in black tea processing	2.1.3 Per cent increase in adoption	2.1.3 Survey reports TRFK Annual Technical report	2.1.3. Factories adopt technologies
2.1.4 Develop factory manuals for factory personnel.	2.1.4 Number of manuals developed	2.1.4 TRFK Annual Technical report	
2.2.1 Determine the market potential/needs for new tea products.	2.2.1 Survey reports	2.2.1 Survey reports TRFK Annual Technical report	
2.2.2 Develop and avail	2.2.2 Number of	2.2.2 TRFK Annual	

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Assumptions
<p>technologies for tea products diversification.</p> <p>2.2.3 Develop and avail suitable tea varieties for diversified tea products.</p> <p>2.3.1 Develop and avail technologies for product branding.</p> <p>2.3.2 Develop and avail packaging technologies for preserving the quality of black tea.</p> <p>2.4.1 Evaluate different sources of energy in tea processing.</p> <p>2.4.2 Develop cost effective and environmentally friendly energy technologies for tea processing.</p> <p>2.5.1 Develop and avail technologies that enhance preservation of black tea.</p> <p>2.5.2 Train factory personnel on efficient black tea processing technologies.</p>	<p>technologies developed</p> <p>2.2.3 Number of varieties developed</p> <p>2.3.1 Number of technologies developed</p> <p>2.3.2 Number of technologies developed</p> <p>2.4.1 Survey reports</p> <p>2.4.2 Number of technologies developed</p> <p>2.5.1 Number of technologies developed</p> <p>2.5.2 Number of trainings conducted</p>	<p>Technical report</p> <p>2.2.3 TRFK Annual Technical report</p> <p>2.3.1 TRFK Annual Technical report</p> <p>2.3.3 TRFK Annual Technical report</p> <p>2.4.1 Survey reports TRFK Annual Technical report</p> <p>2.4.2 TRFK Annual Technical report</p> <p>2.5.1 TRFK Annual Technical report</p> <p>2.5.2 TRFK Annual Technical report</p>	
<b>Strategic objective 3</b>			
<b>Outcomes</b>			
<p>3.1 Improved productivity in old tea lands and sustainable germplasm conservation</p> <p>3.2 Improved productivity in old tea lands and sustainable germplasm conservation</p>	<p>3.1 Percent increase in productivity</p> <p>3.2 Percent germplasm survival</p>	<p>3.1 Economic Surveys</p> <p>3.2 TRFK Annual Technical report</p>	
<b>Outputs</b>			
<p>3.1.1 Adaptable tea varieties identified and adopted</p> <p>3.1.2 Sustainable management practices for old tea identified and adopted</p>	<p>3.1.1 Percent increase in productivity</p> <p>3.1.2 Per cent increase in productivity</p>	<p>3.1.1 Economic Surveys</p> <p>3.1.2 Economic Surveys</p>	
<b>Activities</b>			
<p>3.1.1 Identify adaptable tea varieties for old tea lands</p> <p>3.1.2 Identify practices for sustainable management of old tea lands</p> <p>3.2.1 Identify practices for sustainable management of tea germplasm</p> <p>3.2.2 Develop materials and information on sustainable management and conservation of tea ecosystems and</p>	<p>3.1.1 Number of varieties</p> <p>3.1.2 Number of practices</p> <p>3.2.1 Number of practices</p> <p>3.2.2 Number of materials</p>	<p>3.1.1 TRFK Annual Technical report</p> <p>3.1.2 TRFK Annual Technical report</p> <p>3.2.1 TRFK Annual Technical report</p> <p>3.2.2 TRFK Annual Technical report</p>	

<b>Narrative Summary</b>	<b>Objectively Verifiable Indicators</b>	<b>Means of Verification</b>	<b>Assumptions</b>
germplasm 3.2.3 Train tea farmers and extension staff on proven viable technologies	3.2.3 Number of trainings	3.2.3 TRFK Annual Technical report	
<b>Strategic objective 4</b>			
<b>Outcomes</b>			
4.1 Improved performance	4.1 Performance index	4.1 Performance reports	4.1 Funding
4.2 Sustainable funding sources	4.2	4.2	4.2
4.3 Improved performance	4.3	4.3	4.3
4.4 Improved performance	4.4	4.4	4.4
4.5 Improved performance	4.5	4.5	4.5
<b>Outputs</b>			
4.1.1 Policy guidelines and approaches developed	4.1.1 Number of policy guidelines and approaches	4.1.1 Audited reports	4.1.1
4.1.2 Performance management system developed	4.1.2 Number of performance system	4.1.2 Performance reports	4.1.2
4.1.3 Human resource capacity developed	4.1.3 Efficiency	4.1.3 Number of trained personnel	4.1.3
4.2.1 Alternative sources of funds identified and harnessed.	4.2.1 The number of sources	4.2.1 Account reports	4.2.1 Funding availed
4.2.2 Sustainable funding sources	4.2.2 Number of opportunities	4.2.2 Policies and statutes reports	4.2.2
4.3.1 Inventory report	4.3.1 Number of reports	4.3.1 Reports	4.3.1
4.3.2 Strategies developed	4.3.2 Number of strategies	4.3.2 Inventory reports	4.3.2
4.4.1 Collaborators identified	4.4.1 Number of stakeholders	4.4.1 Annual reports	4.4.1
4.4.2 Linkages established	4.4.2 Number of linkages	4.4.2 Signed MoUs	4.4.2
4.5.1 Staff emoluments enhanced	4.5.1 Scheme of service	4.5.1 Payroll	4.5.1
<b>Activities</b>			
4.1.1 Develop policy guidelines and approaches	4.1.1 Number of policy guidelines and approaches	4.1.1 Reports	4.1.1 Funding availed
4.1.2 Develop a performance management system	4.1.2 Number of performance systems	4.1.2 Performance	4.1.2
4.1.3 Develop capacities in human resource	4.1.3 Efficiency	4.1.3 Number of trained personnel	4.1.3
4.2.1 Identify and harness alternative sustainable sources of funds for research and development.	4.2.1 Number of sources	4.2.1 Account reports	4.2.1
4.2.2 Identify opportunities current policies and statutes that could allow for increased funding	4.2.2 Number of opportunities	4.2.2 Policies and statutes	4.2.2
4.3.1 Undertake an inventory and identify deficiency in the existing physical and ICT infrastructure	4.3.1 Number of reports	4.3.1 TRFK Reports	4.3.1
4.3.2 Develop a strategy for acquiring the required	4.3.2 Number of strategies	4.3.2 Inventory reports	4.3.2
	4.4.1 Number of stakeholders	4.4.1 Annual reports	4.4.1
	4.4.2 Number of linkages	4.4.2 Signed MoUs	4.4.2
	4.5.1 Attractive pay package	4.5.1 Payslip	4.5.1

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Assumptions
physical and ICT infrastructure 4.4.1 Identify relevant stakeholders for collaboration 4.4.2 Establish relevant linkages 4.5.1 Develop strategies for enhancing staff emoluments			

6.9 For effective and efficient M&E the implementation team will carry out self-assessments, for which an activity based annual target matrix has been developed (Table 9). The matrix includes output, output indicators, unit, baseline year, baseline value and year.

Table 9: **ANNUAL TARGETS**

<b>Goal:</b> To contribute towards the achievement of an average growth rate of 7 per cent per year for the agricultural sector by the year 2012									
<b>Sub Goal:</b> To sustain the contribution of the tea sub sector to GDP by at least 4% per annum									
<b>Outcome:</b> Improved and sustained productivity in smallholder and large scale									
<b>Outcome indicator:</b> Productivity index									
Output	Output indicator	Unit	Baseline year	Baseline value	Yr 1 2005/06	Yr 2 2006/07	Yr 3 2007/08	Yr 4 2008/09	Yr 5 2009/10
<b>Strategic Objective 1. To improve and sustain productivity and quality of tea in smallholder and large estate sub-sectors</b>									
<b>1.1 Improve and sustain the productivity of tea in smallholder and large estate sectors through improved tea varieties and production technologies.</b>									
1.1.1 Improved varieties developed and availed	Number	No.	2004-2005	0	0	0	2	1	1
1.1.2 Appropriate technologies developed and	Number	No.	2004-2005	0	2	0	2	1	1

packaged									
1.1.3 Trainings conducted	Number	No.	2004-2005	0	3	8	0	20	10
• Farmers					1	4		10	4
• Extension staff					1	2		6	3
• Estate managers					1	2		4	3
<b>1.2 Improve leaf quality of pre-processed tea in smallholders and large estate sub-sectors</b>									
<b>Outcome:</b> Improved quality of pre-processed leaf									
<b>Outcome indicator:</b> Leaf Quality Index									
1.2.1 Improved high quality varieties developed and availed	Number	No.	2004-2005	0	0	0	2	1	1
1.2.2 Improved leaf Pre-processing technologies developed and disseminated	Number	No.	2004-2005	1	0	0	0	0	1
<b>1.3 Improve adoption levels of proven tea crop production and quality technologies</b>									
1.3.1 Effective extension approaches and usage of available technologies established	Number	No.	2004-2005	0	0	0	0	0	2
1.3.2 Materials and information on tea production and quality developed	Number	No.	2004-2005	0	7	10	15	8	12
<b>Strategic Objective 2: To enhance competitiveness and profitability of Kenyan tea in conformity with international standards</b>									
<b>2.1 Improve consistency of tea quality to conform to acceptable market standards</b>									
<b>Outcome:</b> Improved market share									
<b>Outcome indicator:</b> % market share									
2.1.1 Best practices in tea manufacture developed and availed	Number	No.	2004-2005	0	0	0	0	0	2
2.1.2 Adaptive Research Factory established	Number	No.	2004-2005	0	0	0	0	0	1
2.1.3 Best practices in black tea	Number	No.	2004-2005	1	0	1	1	0	1

processing adopted									
2.1.4 Factory manuals developed and availed	Number	No.	2004-2005	1	0	0	0	0	1
<b>2.2 Avail technologies for diversification of tea products.</b>									
2.2.1 Needs and potential determined	Number	No.	2004-2005	0	0	0	0	1	2
2.2.2 Technologies developed and availed	Number	No.	2004-2005	0	0	2	0	1	3
<b>2.3 Develop and avail technologies for value addition of black tea.</b>									
2.3.1 Tea varieties for diversified tea products developed and availed	Number	No.	2004-2005	0	0	0	2	0	1
2.3.2 Technologies for product branding developed and availed	Number	No.	2004-2005	0	0	1	1	2	3
<b>2.4 Develop technologies for cost effective energy utilization in tea processing</b> <b>Outcome:</b> Enhanced income <b>Outcome indicator:</b> Profit index									
2.4.1 Different sources of energy evaluated and documented.	Number	No.	2004-2005	0	0	0	0	0	1
2.4.2 Cost effective and environmentally friendly technologies developed	Number	No.	2004-2005	0	0	0	0	0	1
<b>2.5 Enhance throughput in black tea processing technologies.</b> <b>Outcome:</b> Efficiency and effectiveness in tea processing <b>Outcome indicator:</b> Processing index									
2.5.1 Preservation technologies of black tea developed and availed	Number	No.	2004-2005	1	0	0	0	0	1
2.5.2 Factory personnel trained.	Number	No.	2004-2005	0	0	0	0	0	1

<b>Goal:</b> To contribute towards the achievement of an average growth rate of 7 per cent per year for the agricultural sector by the year 2012									
<b>Sub Goal:</b> To sustain the contribution of the tea sub sector to GDP by at least 4% per annum									
<b>Outcome:</b> 3.1 Improved productivity in old tea lands and sustainable germplasm conservation									
<b>Outcome indicator:</b> 3.1 Productivity index									
Output	Output indicator	Unit	Baseline year	Baseline value	Y1 2005/06	Y2 2006/07	Y3 2007/08	Y4 2008/09	Y5 2009/10
<b>Strategic Objective 3: To promote sustainable management and conservation of tea germplasm and ecosystems</b>									
<b>3.1 Develop and avail practices for sustainable management and conservation of tea ecosystems</b>									
3.1.1 Adaptable tea varieties identified and adopted	Number	No.	2004-2005	0	0	0	0	0	1
3.1.2 Sustainable management practices for old tea identified and adopted	Number	No.	2004-2005	0	1	1	1	1	2
<b>3.2 Develop and avail practices for sustainable management and conservation of tea germplasm</b>									
3.2.1 Sustainable management practices of germplasm conservation identified and adopted	Number	No.	2004-2005	1	0	0	0	0	2
3.2.2 Materials and information on sustainable management and conservation of tea ecosystems and germplasm developed	Number	No.	2004-2005	0	0	0	0	0	2
3.2.3 Tea farmers and extension staff on proven viable technologies trained	Number	No.	2004-2005	0	0	0	0	1	3

<b>Goal:</b> To contribute towards the achievement of an average growth rate of 7 per cent per year for the agricultural sector by									
<b>Sub Goal:</b> To sustain the contribution of the tea sub sector to GDP by at least 4% per annum									
<b>Outcome:</b> Improved performance									
<b>Outcome indicator 4.1:</b> Performance index									
Output	Output indicator	Unit	Baseline year	Baseline value	Y1 2005/06	Y2 2006/07	Y3 2007/08	Y4 2008/09	Y5 2009/10
<b>Strategic Objective 4: To enhance organizational capacity and technical services</b>									
<b>4.1 Develop and implement a comprehensive human resource strategy.</b>									
4.1.1 Policy guidelines and approaches developed.	Number	No.	2004-2005	0	0	0	0	0	0

4.1.2 Performance management system developed	Number	No.	2004-2005	1	0	0	0
4.1.3 Human resource capacity developed	Number	No.	2004-2005	1	0	0	1
4.1.4 Staff scheme of service developed	Number	No.	2004-2005	2	0	0	2
<b>4.2 Enhance financial resource.</b>							
<b>Outcome:</b> Sustainable funding sources							
<b>Outcome indicator:</b> Amount							
4.2.1 Alternative sources of funds identified and harnessed	Number	No.	2004-2005	0	1	1	1
4.2.2 Funding opportunities identified	Number	No.	2004-2005	1	4	7	7
<b>4.3. Enhance infrastructure and facilities</b>							
<b>Outcome:</b> Improved performance							
<b>Outcome indicator:</b> Performance Index							
4.3.1 Inventory report	Number	No.	2004-2005	1	1	1	1
4.3.2 Strategy for acquiring physical and ICT infrastructure developed	Number	No.	2004-2005	1	0	0	0
4.3.3 ISO certified	Number	No.	2004-2005	0	0	0	0
<b>4.4: Develop and maintain partnerships and linkages</b>							
4.4.1 Relevant collaborators identified	Number	No.	2004-2005	5	7	7	7
4.4.2 Linkages established	Number	No.	2004-2005	3	1	1	1
4.5: Compensation to employees	Amount	Kshs.	2005-2006	-	37,212,572	40,857,713	41,328

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## References

International Tea Committee Annual Bulletin of Statistics (2006).

Ministry of Agriculture, *Strategy for Revitalization of Agriculture, 2000-2014*, (2004).

Ministry of Agriculture, *Task Force Report on the Tea Industry*, 2007

Ministry of Agriculture, *Medium Term Plan, (MTP) 2008-2012*

Ministry of Planning, *Economic Recovery Strategy* (2003).

Ministry of Planning and Vision 2030, *Kenya Vision 2030* (2008).