C A R D I

Medium Term Plan

2011-2013

Improving Lives Through Agricultural Research

TABLE OF CONTENTS

	Page
List of Tables, Figures and Annexes	iv
List of Acronyms	v
Executive Summary	1
Elements of the Strategic Framework	
A. Antecedents	7
1. Preamble	8
2. Introduction and Background	
2.1 Recent Trends in Global Economic Development	8
2.2 Implications of the Global Economic Environment for Developing Economies	10
2.3 Recent Trends in Agricultural Research for Development	11
2.4 CARDI and the Caribbean Regional Agricultural Agenda	13
B. The CARDI Mandate	15
1. CARDI AND THE CSME	
2. The Strategic Approach and Planning Process	18
2.1 Introduction	18
2.2 Strategic Approach	18
C. Elements of the CARDI Strategic Framework	23
1. Introduction	
1.1 Defining the Elements of the Strategic Framework	24
2. Strategic Axes	32
2.1 Strategic Axis 1 – Development of Sustainable Industries	34
2.2 Strategic Axis 2 – Development of Strategic linkages	39
2.3 Institutional Strengthening	42
D. Implementation Plan	52
1. Introduction	
1.1 Strategic Considerations	52
2 Internal Strategy	53
3 External Strategy	54

TABLE OF CONTENTS

		Page
4.	Organisation and Management	57
4.1	Governance of CARDI	58
4.2	Technical Services Division	60
4.3	Corporate Services	61
5.	Financing the MTP	62
5.1	Budget	62
5.2	Source of Funds	63
5.3	Financial Overview	64

TABLES

		Page
Table 1:	Elements of MTP 2011 - 2013	25
Table 2:	Summary of MTP Budget 2011-2013	62
Table 3:	Distribution of expenditure from CORE	63
Table 4:	Summarised Balance Sheets 2011 - 2013	65

FIGURES

Figure 1:	Bottom Up/Client Led Process	19
Figure 2:	Accountability and Transparency	20
Figure 3:	Working Together (National Level)	21
Figure 4:	Working Together (Regional Level)	22
Figure 5:	Hierarchy of CARDI Strategic Framework	24
Figure 6:	Commodity Development Chain	55
Figure 7:	Research, Development and Application Chain	56
Figure 8:	Governance of CARDI	58
Figure 9:	Structure of the Office of Executive Director	59
Figure 10:	Structure of Technical Services Division	60
Figure 11:	Structure of Corporate Services Division	61

ANNEXES

Annex 1: Definitions of Strategic Axes, Focal Areas and Priority Areas

Annex 2: Definition of Programmes/Sub-Programmes

Annex 3: External Network for the Implementation of CARDI's Programmes

Annex 4: Summarised MTP Budget 2011 - 2013

LIST OF ACRONYMS

ACP	All Agricultural Commodities Programme
AKST	Agricultural Knowledge, Science and Technology
AR4D	Agricultural Research for Development
ASTI	Agricultural, Science, Technology and Innovation
CABA	Caribbean Agribusiness Association
CACHE	Caribbean Council for Higher Education in Agriculture
CaFAN	Caribbean Farmers Network
CAP	Community Agricultural Policy
CARDI	Caribbean Agricultural Research and Development Institute
CFC	Common Fund for Commodities
CGIAR	Consultative Group on International Agricultural Research
CALYUCA	Latin American and Caribbean Consortium to Support Cassava Research and Development
COTED	Council for Trade and Economic Development
CSME	Caribbean Single Market Economy
CTA	Technical Centre for Agriculture and Rural Development
EDF	Economic Development Fund
EMBRAPA	Empresa Brasileira de Pesquisa Agropecúaria
EU	European Union
FAO	Food and Agriculture Organisation of the United Nations
FMIS	Financial Management Information System
GDP	Gross Domestic Product
HQ	Headquarters
IICA	Inter-American Institute for Co-operation on Agriculture
IMF	International Monetary Fund
ITC	International Trade Centre
JI	The Jagdeo Initiative
KBC	Key Binding Constraints

MTP	Medium Term Plan
NARI	National Agricultural Research Institute
NCCARD	National Co-ordinating Committee for Agricultural Research and Development
OED	Office of the Executive Director
PA	Protected Agriculture
PIU	Project Implementation Unit
POW	Programme of Work
RTP	Regional Transformation Programme
STI	Science, Technology and Innovation
TIS	Technology and Innovation Systems
UF	University of Florida
UNDP	United Nation Development Programme

EXECUTIVE SUMMARY

During the implementation of the Medium Term Plan, 2008/2010, there were some significant successes in key areas, such as, the detailing of a Strategic Framework within which all staff can work; focus on key selected commodities (consistent with CARICOM guidelines) and Thematic Areas, so as to optimise the benefits accruing from the institute's resources; the garnering of significant quantities of external human and financial resources to assist in the implementation of the Work Programme; and greater acceptance by regional and international partners as a credible institution that has a rightful place within the agricultural science, technology and innovation community.

However, there is still work to be done to place CARDI in a "steady state" position. Accordingly, the MTP 2011.2013 will continue (with refinements as appropriate) the directions and programmes established in the MTP, 2008.2010. That is, it will consolidate, completely internalise and make fully operational the initiatives already started.

As is to be expected, the MTP, 2011/2013 will be influenced by;

(i) recent trends in global economic development and their implications for developing countries, such as, CARICOM Member States. These trends include those relating to energy, food availability and price volatility, the financial "roller coaster" and climate change;

(ii) recent trends in agricultural research and development that call for credible institutions involved in this area to place much more emphasis on the global drive for reduction in poverty, hunger and malnutrition.

This is expressed in the new mission for the CGIAR institutions *to reduce poverty and hunger, improve human health and nutrition, and enhance ecosystem resilience through high quality international agricultural research, partnership and leadership*.

(iii) the Caribbean Regional Agricultural Agenda as is expressed inter alia in the Regional Transformation Programme (RTP) for Agriculture, the Jagdeo Initiative and the Lilliendal Declaration for Agriculture. The critical expressions emanating from these documents are;

(a) the importance now being placed on agriculture by the key policy makers (Heads of Government) in the Region;

(b) the low contribution of the sector to GDP in the Region; and

(c) the need for the Region to have an acceptable level of food & nutrition security especially given the global food deficit, which is predicted to widen with time.

The Strategic Approach and Planning Process of the MTP is built around:

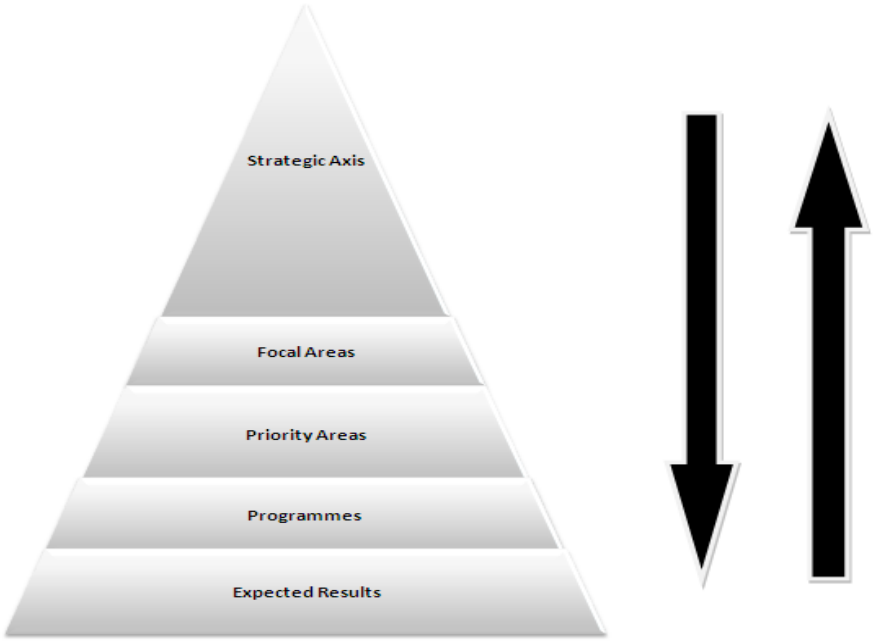
The Vision: The Centre of Excellence in the Caribbean for the provision and application of research for development in agriculture that contributes to the creation of wealth and the competitiveness of the sector in the Region.

The Mission: To contribute to the sustainable development of Caribbean people by the generation, transfer and application of appropriate technologies through agricultural research for development

Core Value: Integrity, professionalism & excellence in everything we do.

The Strategic Approach continues to be one of inclusiveness; full consultation with our partners and clients throughout the value chain; and emphasis on the attainment of predetermined, meaningful and tangible results. To achieve this, the modus operandi is built on three pillars *bottom up/client led, accountability and transparency, and working together*.

The Elements of the Institute's Framework are described in a hierarchical structure as illustrated in the Figure that follows:



Defining elements of the Strategic Framework

There are three Strategic Axes that drive the whole Plan: Strategic Axis 1 – Development of Sustainable Industries, Strategic Axis 2 – Development of Strategic Linkages and Strategic Axis 3 – Institutional Capacity Building. Each Strategic Axis has two Focal Areas and each Focal Area has one or more Priority Areas. Additionally, each Priority Area has one or more Programmes.

Strategic Axis 1 is the principal framework for conducting the Institute's business and delivering on its mandate. It is concerned with the deployment of Science, Technology and Innovation to contribute to the Region's food and nutrition security and within the context of the optimal utilisation and conservation of our natural resources. However, there is the recognition that CARDI does not have all the resources (human, physical and financial) to deliver effective R & D support to the Region's agriculture. Therefore, consistent with the pillar of "working together" enunciated in the MTP 2008-2010, the Institute has to work closely with allied agencies/institutions in pursuing its mandate. Strategic Axis 2 also offers the platform for the promotion of CARDI as the preferred agricultural research and development institution in CARICOM and its contribution to food and nutrition security and economic well being of the peoples of the Region. A suitable level of resources (quantum and quality) is essential if the

Institute is to successfully fulfil its mandate. Strategic Axis 3 with programmes to build the capacity of CARDI staff, as well as that of partners and stakeholders and to mobilise and manage human and physical resources is the conduit for attaining the resources to enable delivering on Strategic Axis 1. Thus, the MTP is deliberately structured to provide organic linkages among the three Strategic Axes.

The major Programmes within each Strategic Axis are as follow:

SA1 - Development of Sustainable Industries

- Commodity Development Crops and Livestock
- Germplasm
- Emerging Issues
- Protected Agriculture
- Biotechnology development
- Technical systems and services
- Promotion of Science, Technology and Innovation
- Invasive species management
- Climate change for agriculture development
- Soil management
- Water management

SA2 - Development of Strategic Linkages

- Regional R&D strategies
- Relationships with key institutions and partners
- Membership base of CARDI and "Friends of CARDI"
- Branding CARDI as the preferred R&D institution in CARICOM

SA3 - Institutional Strengthening

- Donor/resource agency mobilisation
- Technical assistance
- CARDI commercial activities
- Human resource capacity
- Rebrand human capacity; talent management
- Maintenance

Administration/Operations
Core and external resource management/FMIS
Reports to stakeholders/agencies, etc.

Expected Results are articulated at an institutional level for each Programme. These will be supported by Expected Results at a Unit level which, when taken, collectively, will allow for achievement of the institutional Expected Results.

The MTP, 2011/2013, will be implemented taking into consideration a specific strategy at the Internal and External levels.

The internal strategy will have as its goal the creation and promotion of an efficient and effective CARDI. That positions itself to be a regional clearing house (broker) and Centre of Excellence for the generation, diffusion and application of knowledge along the agri-food Value Chain.

The external strategy will have as its goal the establishment of an efficient collaborative network of stakeholders, collaborators and strategic partnerships within the public and private sectors. This will allow for the sharing of information, physical and financial resources.

The goal will emphasise the concept of "Working Together" with stakeholders along the Commodity Development Chain and the Research, Development and Application Chain.

The Governance of the Institute remains the:

- Board of Governors
- Board of Directors
- Executive Director who is who is responsible for implementing the mandates and decisions of the Boards of Governors and Directors. He is supported by a Management Committee with respect to Technical and Scientific matters. He supervises three divisions; Office of the Executive Director, Corporate Services and Technical Services

The MTP is financed through Core Contributions from Member States and External Resources. The total funding for the period is estimated at EC$60.6Mn (Core, EC$22.3Mn and External, EC$38.3Mn). No

increases in the agreed upon contribution of Member States is projected even though this has been frozen for 20^{+} years at EC$7.8Mn. In addition, based on previous trends, only EC$22.3Mn of the approved EC$23.4Mn is budgeted to be received over the period. This results in a Net deficit of Core Funds of EC$1.94Mn. It is suggested that this shortfall be funded from arrears owing by Member Countries.

The contribution from external resources to the operations of the Institute will increase from 37% in 2010 to 67% in 2013.

A. ANTECEDENTS

1. Preamble

The implementation of the MTP 2008/2010 may be characterized as follows:

- The pillars, bottom up/client led, working together, accountability and transparency which guided CARDI's activities
- The detailing of a strategic framework within which all staff could develop better work programmes
- Focus on a few selected commodities and thematic areas that were agreed upon after consultation with stakeholders and clients. This was in an effort to identify key tangible and meaningful Expected Results and thus optimize the benefits to be accrued from the limited available human and financial resources
- CARDI assuming a coordinating role for institutions involved in agricultural development as mandated by CARICOM
- Success in obtaining an acceptable quantity of finances from external sources, however the significant majority of same was not available for use until early 2010
- The establishment of key partnerships that will complement CARDI's human and technical resources that will allow for mutual benefits and for the repositioning of the agriculture sector in the Region
- The need to restructure the Institute if it were to utilize these externally sourced finances in a timely and effective manner
- Slow pace in:
    a) Effecting a change in "mind set"
    b) The introduction of a new Financial Management Information System (FMIS)
    c) The implementation of a "seamless" proposal management system based on agreed upon Expected Results

The MTP 2008/2010 has therefore set the stage for CARDI to become the preferred agricultural research for development (AR4D) Institution in the Region; to be a credible "broker" of technologies and scientific processes between extra-regional entities and similar entities in its member countries; and to lead the AR4D programme in CARICOM.

Consequently the MTP 2011/2013 will build on the foundation constructed during the implementation of the previous MTP. It will therefore consolidate, completely internalize and make fully operational the initiatives already started. However, during this period more attention will be given to:

1. A greater role for science, technology and innovation in the conceptualization of our work. This is in recognition that production must be increased in the region. This is necessary because of (a) the limited land space in island member countries of CARDI (b) the global realization that the rate of demand for food is outstripping the rate of increase in food production
2. Ensuring that the results obtained and/or technologies being promoted are such that they could be easily "scaled up" to allow for sustainable commercial utilization-

   Accordingly, the MTP, 2011/2013, is structured in a similar fashion to the MTP, 2008/2010.

2. INTRODUCTION AND BACKGROUND

2.1 Recent Trends in Global Economic Development

The frame for the MTP is delimited by the global, regional and national considerations that influence food and nutrition security. These include the major factors, **finance**, **energy, food** and **climate change** that have the greatest impact on the state of the world's economy. Integral to the discourse also, is the way in which the architecture of international agricultural research is changing. The Consultative Group on International Agricultural Research (CGIAR) with the support of the World Bank, is revamping its approach to emphasise the reduction of poverty and hunger through the sustainable intensification of agricultural production. This new approach is having major implications on the way in which agricultural R&D is conducted and funded.

The *global* financial crisis that started in 2007 has not abated to any appreciable extent with many economies reporting little or no growth during fiscal 2010. The October 2010 World

Economic Outlook[1] Report of the International Monetary Fund (IMF) plainly said that global recovery heading into 2011 remained fragile. However, it did suggest that the probability of a sharp global slowdown, including stagnation or contraction in advanced economies, still appeared low.

Energy prices, which had retreated after the excesses of 2008, have started to climb once more with Brent[2] crude prices passing the US one hundred dollar mark in early 2011. The following newspaper report of 1st February 2011 is indicative of the situation: (NEW YORK (AFP) Crude oil prices *closed mixed Tuesday, with London's benchmark contract surging past $102 a barrel as investors worried about Egypt's unrest and possible Suez Canal supply disruptions. New York's main contract, WTI light sweet crude for March, fell $1.42 dollars to close at $90.77 a barrel...But in London,* Brent North *Sea crude for delivery in March spiked to hit $102.08, its* ***highest level since late September 2008*** *after the Lehman Brothers bankruptcy sent* financial markets *into a tailspin*. The continued unrest in the Middle East has been accompanied by further increases in oil prices

Continued instability in the energy markets may remain a feature of the global economy for some time and in this context, much greater precision in planning and execution is required to deliver sustainable development through appropriate investments in agricultural R&D.

Food

The food crisis, in 2007/2008, which was characterised by both unavailability and high prices, emphasised the need for countries and/or regions to be able to meet the basic food needs of their people. In many instances failure to do this resulted in riots and threatened the maintenance of acceptable governance. Since then there has been a reduction in prices mainly at international levels but not uniformly in developing countries. This temporary relief in some countries reduced their emphasis on achieving acceptable levels of food security. However, in late 2010/early 2011,

[1] World Economic outlook: Recovery, Risk, and Rebalancing. October 2010. A survey by the staff of the International Monetary Fund – Washington, DC.

[2] Brent crude is one of the most important benchmark crude oils. Two thirds of the world's internationally traded crude oil supplies are priced relative to it. The benchmark oil is a combination of crude oil from 15 different oil fields in the Brent and Ninian areas of the North Sea.

information revealed the growth in demand for food was rising faster than growth in supply. Consequently there was the stark realisation that, unless, there is remedial action, there would be a food shortage (with hunger and malnutrition) in the medium term. This realisation, plus the phenomenon of extreme price volatility has once again placed on the "front burner" the question of food availability and food and nutrition security.

Climate change is shaping the policies of global economies as responsible nations endeavour to reduce their carbon footprint and increase their 'green' assets. The implications for agricultural production, in an increasingly, for some nations, hostile environment, are obvious and climate researchers are seeking to find sustainable means of maintaining and increasing agricultural outputs therein. Apart from the issues of rising sea levels, salt water encroachment, lowering water table levels and extreme weather events, the concept of food miles has also emerged. Policies are now encouraging the development of local markets, including farmers' markets, promoting the idea that food should not travel more than 100 miles from its origin to the market place. Food exports from developing countries will therefore attract taxes that could further erode their competitiveness. Compounding the issue are the new taxes being placed on airlines coming to the Caribbean which may dampen the growth trend in the tourism sector, reducing the number of tourists and lower the sector's demand for food.

2.2 Implications of the Global Economic Environment for Developing Economies

The *Implications of the current instability in the global economic arena* on developing countries are enormous. Added to the growing uncertainty are the recent events in Japan and those in the Middle East: the result is political and social instability, with a spike in crude oil prices, increased fragility in currency and stock markets and rising and unpredictable food prices. Any slowdown in the global economy, especially in the OECD countries would have deleterious effects on developing countries that experience food and energy deficits or rely heavily on tourism and the export of manufactured goods and primary commodities to North America and Western Europe. Caribbean countries are particularly vulnerable in this regard. These issues affect economic performance and exert pressure on global agri-food systems and by extension, the international agricultural research agenda.

As indicated earlier, another emerging trend is the *food price volatility* evident in the global economy. Experts are warning that price instability has now become a chronic feature of the food economy. The World Bank has indicated that global food prices continue to rise. Its food price index increased by 15% between October 2010 and January 2011, a mere 3% below the 2008 peak. The last six months have seen sharp increases in the global prices of wheat, maize, sugar and edible oils, with a relatively smaller increase in rice prices. Higher global wheat prices have fed into significant increases in local flour and stock feed prices in many countries. Higher maize, sugar, and oil prices have contributed to increase the costs of various types of food, though local maize prices have largely been stable in Sub- Saharan Africa. Local rice prices have increased in line with global prices in some large rice-consuming Asian countries.

As a result of price rises, since June 2010, there is a net increase in extreme poverty of about 44 million people in low- and middle-income countries. "World Bank President Robert Zoellick warned of rising food inflation and high oil prices as risks to world economic growth, as they threaten to push more people into poverty," Citing a new World Bank study he said that "another 10 percent increase in global food prices could drive an additional 10 million people into extreme poverty,"

2.3 Recent Trends in Agricultural Research for Development

The I*nternational Agricultural Research for Development* (IAR4D) Agenda is influenced by a number of agencies and organisations that are part of the global agricultural system. Foremost among them is the Consultative Group on International Agricultural Research (CGIAR) which is aiming to become a more relevant organisation directly addressing the needs of the poor. The new mission of the CGIAR is *to reduce poverty and hunger, improve human health and nutrition, and enhance ecosystem resilience through high quality international agricultural research, partnership and leadership*. Its revised people-centred strategic objectives are as follows:

- **Food for people** – Create and accelerate sustainable increases in the productivity and production of healthy food by and for the poor

- **Environment for people** – Conserve, enhance and sustainably use natural resources and biodiversity to improve the livelihoods of the poor in response to climate change and other factors

- **Policies for people** – Promote policy and institutional change that will stimulate agricultural growth and equity to benefit the poor, especially rural women and other disadvantaged groups.

The new CGIAR is focused on results-oriented research, greater accountability to donors and a strong emphasis on collaboration and partnerships. To provide for accountability and transparency to refine its strategy and results framework the Global Conference on Agricultural Research for Development (GCARD), was established in 2010 and is expected to meet biennially. In addition, GCARD aims to improve public and private investments in agricultural research to better address food and nutrition security and poverty reduction. The findings of the GCARD are therefore key to the development of the global agricultural research agenda, and by extension, the Caribbean regional agricultural R4D agenda.

The future of AR4D: The Way Forward – A Roadmap

The GCARD Roadmap establishes an inclusive, rolling process of reform and capacity development that aims to mobilize the full power of agricultural knowledge and innovation towards meeting agriculture and food-related development needs. It proposes a **six-point plan for transforming agricultural research for development around the world,** requiring actions from all those involved in the generation, access and use of agricultural knowledge**:**

i) The need for collective focus on key priorities, as determined and shaped by science and society,
ii) The need for true and effective partnership between research and those it serves,
iii) Increased investments to meet the huge challenges ahead and ensure the required development returns from AR4D
iv) Greater capacities to generate, share and make use of agricultural knowledge for development change among all actors

v) Effective linkages that embed research in the wider development context and actions enabling developmental change
vi) Better demonstration and awareness of the development impact and returns from agricultural innovation

2.4 CARDI and the Caribbean Regional Agricultural Agenda

Imperatives shaping the CARDI MTP 2011-2013: Arising from the foregoing discourse are a number of critical issues that have an impact on Caribbean agriculture and that will therefore shape CARDI's AR4D programme during this Medium term.

The issues

- Food and nutrition security that takes into consideration the availability of complex carbohydrate crops, diet changes, modern lifestyles with implications for health as well as energy and ageing populations.
- The numbers of poor and undernourished continues to rise even as global food production rises; the majority of these continue to live in rural areas
- Climate change and resulting ecosystems degradation are going to affect the rural poor disproportionately.
- The future growth of energy demand and increasing price volatility are major challenges for agriculture and food security.

The above factors plus those already indentified in the previous sub-sections will be strategically addressed in the MTP 2011/2013.

In summary, the MTP 2011/2013 will take into consideration the following:

- Contribution to:
  - food and nutrition security
  - reduction in poverty and hunger
  - enhancement of the quality of life in the agricultural and rural sectors
- Emphasis on commodities with special reference to location and environmental sustainability
- Attention to factors relating to /influencing the environment such as/climate and agroenergy
- Strengthening of collaboration and partnerships
- Facilitation of increased human and financial investments in AR4D
- Knowledge generation, diffusion and application particularly through demonstration initiatives

Improvement in the capacity of CARDI and its Stakeholders to reposition agriculture.

B. THE CARDI MANDATE

1. CARDI and the CSME

The wider CARICOM area falls under the mandate set out by the Regional Transformation Programme (RTP) for Agriculture, in **1996**. The main thrust of the RTP was to effect a fundamental transformation of the agricultural sector of the Region by diversifying agricultural production, intensifying agro-industrial development, expanding agri-business and generally conducting agricultural production on a market-oriented, internationally competitive and environmentally sound basis. Subsequently, the Jagdeo Initiative (JI) was developed in **2005** to further operationalise the RTP. The JI recognised nine Key Binding Constraints (KBCs) to agricultural development in the Region and set out a mechanism to alleviate same. Those constraints are:

i. Limited financing and inadequate new investment in agriculture

ii. Deficient and uncoordinated risk management measures including praedial larceny

iii. Fragmented and unorganized agricultural private sector

iv. Inadequate research and development

v. Outdated and inefficient agricultural health and food safety systems

vi. Inefficient land and water distribution and management systems

vii. Inadequate transportation systems particularly for perishables

viii. Weak and inadequate information and intelligence systems, weak markets, and lack of linkages and participation in growth market segments

ix. Lack of skilled human resources

In July **2009** the Heads of Government of CARICOM issued the Liliendal Declaration which reaffirmed the importance of agriculture as a key economic driver for the sustainable development of the Region. To realise this importance, it proposed *the elaboration of the*

Community Agricultural Policy (CAP) and regional Strategic Plan. The CARICOM Secretariat has strengthened the development of the Community Agricultural Policy, which sets out:

a) policy formulation process in Member States to enhance the preparation of a well articulated and comprehensive agricultural policy

b) the capacity of the CARICOM Secretariat to provide leadership in the articulation of a CAP

The CAP provides guidelines to CARICOM member states to orient national agricultural policies towards a harmonised system. It provides countries with a mechanism for movement towards preferred approaches in the agricultural policy field which may lead to closer cooperation, deepening of the integration process and strengthening of the Caribbean Single Market and Economy (CSME).

Within recent times, there have been many changes in the global system affecting agriculture. These include:

i. Demographic changes, including urbanization, population growth in non-farming segments, and household income growth
ii. Increasing consumer sovereignty, with greater attention to variety, health, sustainability
iii. Emerging technologies, especially in information technology, biotechnology, food safety and measurement technologies (colour and price scanning)
iv. Growing concentration in the food and agricultural technology industries, in part due to continued merger and acquisition activity by leading companies
v. Multilateral/Bilateral trade liberalization (e.g. WTO, EPA, FTA with Canada, etc.), which is lowering tariff and quantitative barriers to trade even though agriculture remains one of the most protected tradable sectors in the world

What has remained clear from the IICA Annual Report 2009 is that "Inadequate financing and investments in the sector continued to be a KBC to agricultural development in the Region. Most of the investment in the sector remains public sector driven, through government to government projects funded mainly by the European Union (EU) Economic Development Fund (EDF), and

the Chinese, Taiwanese and Brazilian governments[3]". Agriculture's contribution to GDP has been in decline from 1997 to 2006 and other indicators of productivity show a similar trend. Indeed, agricultural production measured by the gross value of agricultural output has remained stagnant or declined over the six years to 2006, with the only exception being Belize, where some growth did take place over the period. However, it should be noted that this contribution is generally significantly increased when the backward and forward linkages are taken into consideration.

The 2008 annual regional agricultural review painted a bleak picture for agriculture in the OECS. The report indicated that the state of agriculture in the OECS showed declines in agriculture's contribution to regional GDP in the five years leading to 2008. Agricultural export earnings also declined and food import dependency increased. The crop subsector declined in general but there were selected vegetables and root-crops that performed well. It stated that the livestock subsector was still small and imports of meat, in particular, poultry, continued to show significant increases.

In the context of (a) the importance now being placed by the key policy makers (Heads of Government) in the Region; (b) the low contribution of the sector to GDP in the Region; (c) the need for the Region to have an acceptable level of food and nutrition security in especially given then global food deficit is predicted to widen with time, CARDI, as the only agricultural R&D institution, has a major role in increasing productivity and facilitating increased production.

[3] IICA Annual Report 2009: http://www.iica.int/Eng/regiones/caribe/trinidadytobago/IICA%20Office%20Publications/B1809i.pdf

2. The Strategic Approach and Planning Process

2.1 Introduction

CARDI's activities must understandably be influenced by the environment within which it operates and the mandate placed upon the Institute to:

a. promote the economic wellbeing of the Region
b. ensure that these actions remain relevant to the environment, the process of consultation will be continued and intensified.

The Institute would strengthen its science systems to improve research outputs in terms of quality, relevance and impact, and facilitating knowledge generation, diffusion and application**.** The strategy will build upon a platform that is shared with other key actors in the innovation system brought together in appropriate networks, commodity groups, farmer's groups and a range of multi-stakeholder processes that facilitate innovation.

The CARDI Vision

The Centre of Excellence in the Caribbean for the provision and application of research for development in agriculture that contributes to the creation of wealth and the competitiveness of the sector in the Region.

The CARDI Mission

To contribute to the sustainable development of Caribbean people by the generation, transfer and application of appropriate technologies through agricultural research for development

The CARDI Core Value

Integrity, professionalism and excellence in everything we do.

2.2 Strategic Approach

CARDI's strategic approach continues to be one of inclusiveness; full consultation with its partners and clients throughout the value chain; and emphasis on the attainment of predetermined, meaningful and tangible results. To achieve this its modus operandi is built on three pillars *bottom up/client led, accountability and transparency, and working together*, that are described in the following sections.

2.2.1 Bottom up/client led

The bottom up/client led approach ensures that CARDI's programmes are primarily influenced by the requirements/needs of its stakeholders and clients. A secondary input is CARDI's assessment of important emerging issues. This blend enables CARDI's programmes to be always topical, relevant and meaningful. The process is fed from national level consultations through the local CARDI Units (Figure1) that allows for the development of Programmes (every three years) and annual Plans of Action. It is a well designed technology generation plan which delivers the products demanded by the Institute's stakeholders and clients.

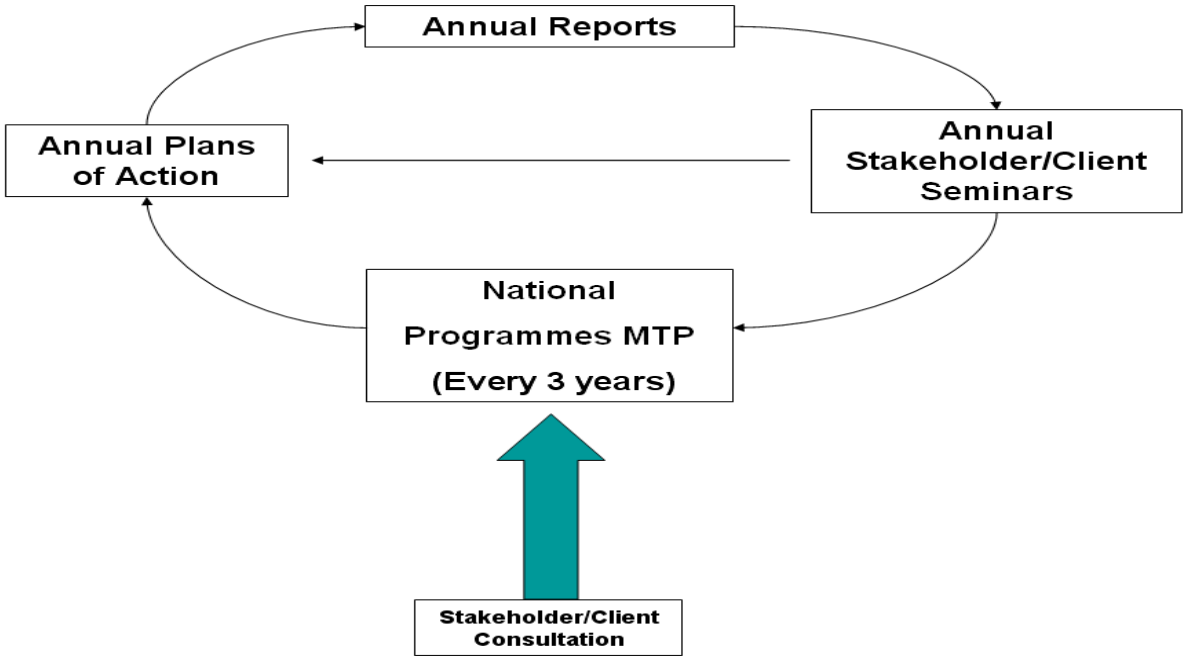


Figure 1: Bottom Up/Client Led Process

2.2.2 Accountability and Transparency

The actions of CARDI will be transparent and accountable to its Member Countries, its clients; its Strategic Partners and Donors. To facilitate the achievement of this transparency and accountability, the Institute will continue to prepare Annual Reports including audited accounts, Annual National Highlights and hold National Annual Seminars to report on its performance (See Figure 1).

Within the above context and in the interest of its own professional sustainability, the operations of the Institute will be conducted with clarity, integrity and credibility. This is exemplified in Figure 2, which links the Programmes/MTP 2008-2010 (prepared by Consultations, Section 2.2.1) to the development of Annual Plans and Budgets, the listing of Expected Results (by Units and Individuals), the development of Individual Work Programmes and subsequently, their Annual Performance Evaluations.

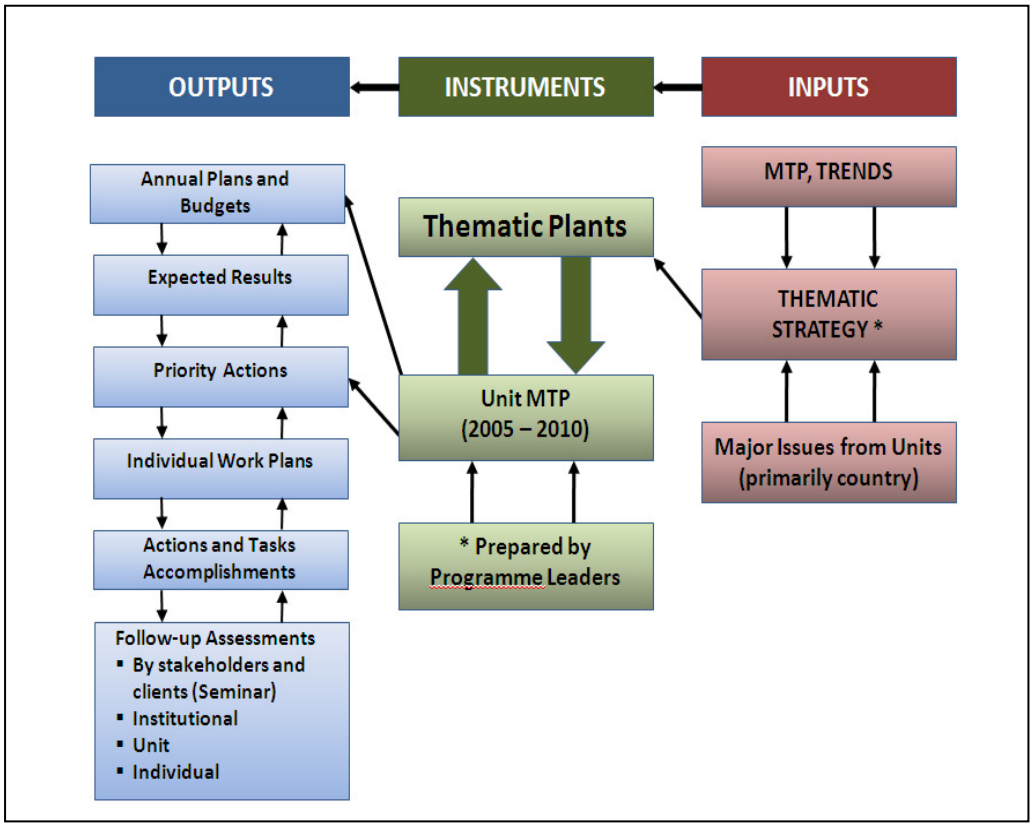


Figure 2: Accountability and Transparency

2.2.3 Working Together

The notion of 'working together' is an enhancement of the consultation process. It recognises that the Institute has a much better chance of achieving its goals if it collaborates with key Strategic Partners and stakeholders and shares human, technical and financial resources.

This collaborative initiative is exemplified in Figure 3 at the national level and Figure 4 at the regional level. It is to be noted that at both levels, there is a framework within which each entity must operate singly and collectively.

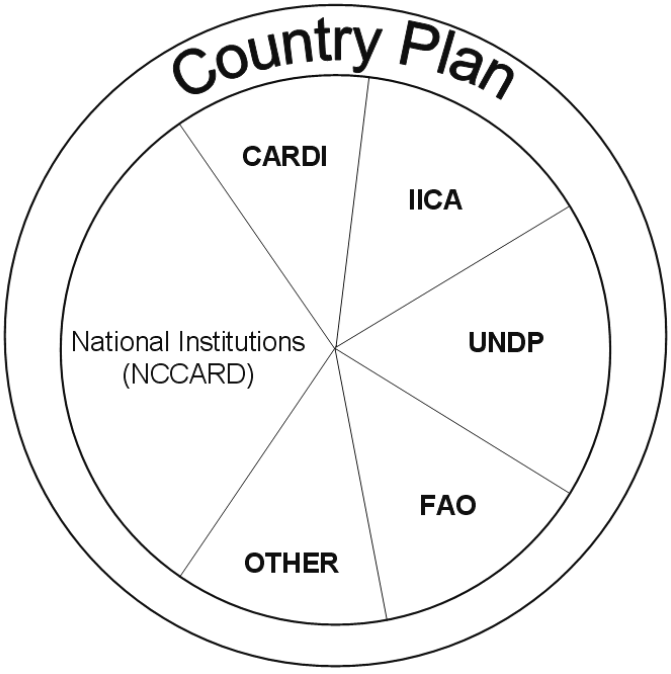


Figure 3: Working together (national level)

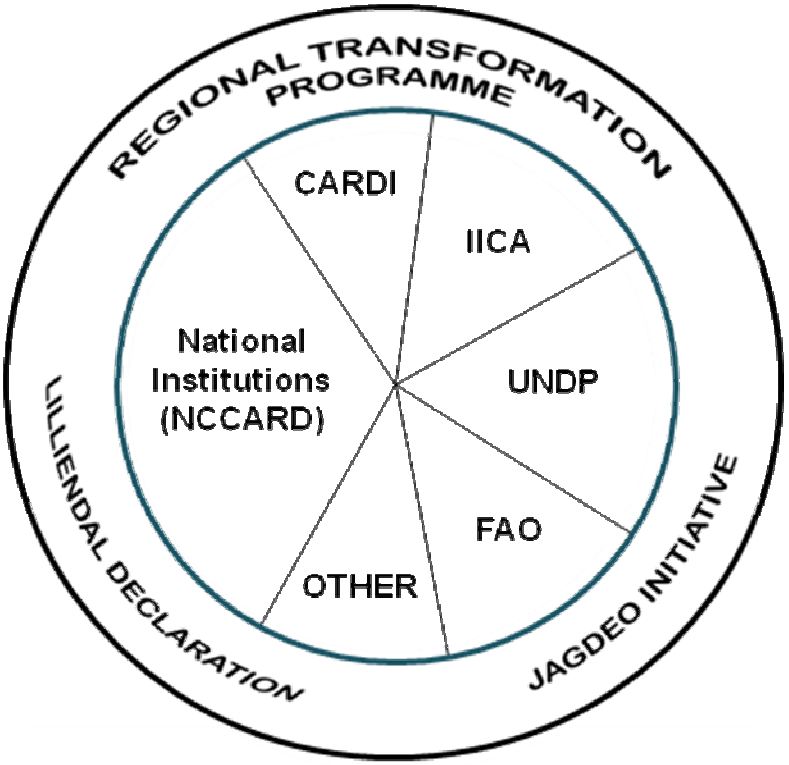


Figure 4: Working together (regional level)

C. ELEMENTS OF THE CARDI STRATEGIC FRAMEWORK

1. Introduction

This chapter briefly discusses the core elements of the MTP and demonstrates the framework within which the key activities and functions are structured. Three Strategic Axes, the building blocks of the MTP, are defined. These are '*The Development of Sustainable Industries*', '*The Development of Strategic Linkages*', and '*Institutional Strengthening*'. The determination and execution of these Axes are rooted in the antecedents **(Section 1)** and carried out within the framework of the identified pillars **(Section 2.2).** Achievement of the Expected Results by implementation of Priority Actions within these Strategic Axes will lend to the Institute contributing in the short-term to increases in the food supply of the Region, and in the medium term, the stability of the agriculture sector. In time, CARDI will assist in the sector becoming a significant driver to the sustainable development Agenda of the Region.

1.1 Defining Elements of the Strategic Framework

There are three Strategic Axes that drive the whole Plan:

1. Strategic Axis 1 – Development of Sustainable Industries
2. Strategic Axis 2 – Development of Strategic Linkages
3. Strategic Axis 3 – Institutional Strengthening

Each Strategic Axis has two Focal Areas and each Focal Area has one or more Priority Areas. Additionally, each Priority Area has one or more Programmes. The hierarchical structure of the defining elements of the strategic framework is illustrated in Figure 5.

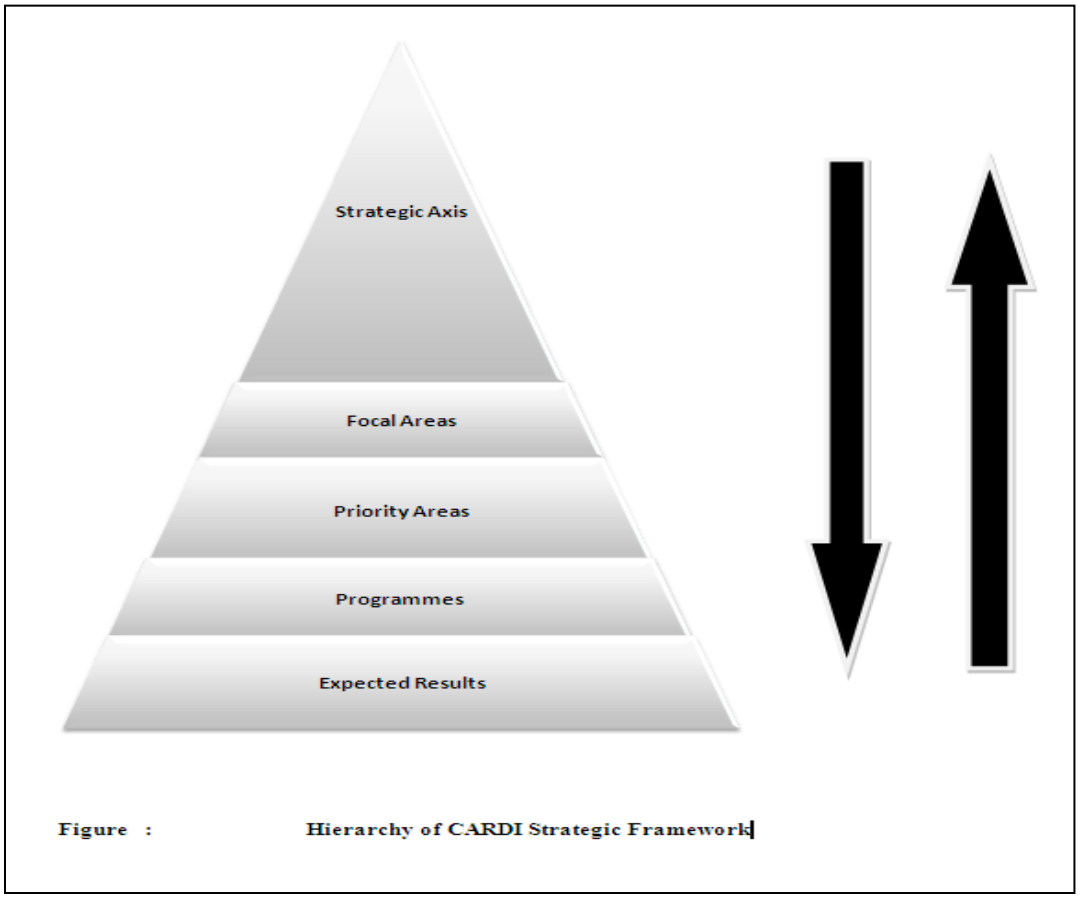


Figure 5: Defining elements of the strategic framework include

The elements of the MTP 2011-2013 are presented in Table 1. Annex 1 provides the definitions for the constituent Strategic Axes, Focal Areas and Priority Areas and Annex 2 for the Programmes/ Sub-programmes. The definitions elaborate the purposes/ objectives and the hierarchical (institutional) Expected Results.

Table 1. Elements of MTP 2011 - 2013

CARIBBEAN AGRICULTURAL RESEARCH AND DEVELOPMENT INSTITUTE - ELEMENTS OF MTP 2011-2013

Strategic Axis	Focal Area	Priority Area	Programme	Sub-Programme	Institutional Expected Results
1. Development of Sustainable Industries	1.1 Science, Technology and Innovation	1.1.1 Knowledge generation, diffusion and application	1.1.1.1 Commodity development - Crops	1. Roots and tubers	1. Increased productivity and production of roots & tubers from validated/ demonstrated and economical technologies
					2. Value added products enhancements through the identification/ selection of suitable varieties and relevant post-harvest technologies
					3. Availability of quality seeds and disease-free planting material to facilitate higher productivity
					4. Availability of new/ improved production and post-harvest technologies, including new/ acquired germplasm for food and feed, through continuous generation and/or adaptation of new technologies.
					5. A cadre of knowledgeable and skilled stakeholders along the value chain through capacity building programmes in production, post-harvest and value addition
				2. Cereals & grain legumes	1. Increased productivity and production of cereals and grain legumes from popularised validated/ demonstrated and economical technologies
					2. Desired amounts of seeds for multiplication and commercial needs produced
					3.At least one new variety of rice introduced in Guyana
					4. A cadre of knowledgeable and skilled stakeholders along the cereals and grain legumes value chain through capacity building programmes in production, post-harvest and value addition
				3. Hot pepper	1. Increased productivity and production of hot pepper from popularised validated/ demonstrated and economical technologies for fresh and processed markets
					2. Pure indigenous varieties available

CARIBBEAN AGRICULTURAL RESEARCH AND DEVELOPMENT INSTITUTE - ELEMENTS OF MTP 2011-2013

Strategic Axis	Focal Area	Priority Area	Programme	Sub-Programme	Institutional Expected Results
					3. Desired amounts of commercial seeds of market-demanded varieties
					4. A cadre of knowledgeable and skilled stakeholders along the hot pepper value chain through capacity building programmes in production, post-harvest and value addition
				4. Fruits and vegetables	1. Increased productivity and production of fruits and vegetables from popularised validated/ demonstrated and economical technologies
					2. Greater amount of quality and disease free planting material available in a larger number of countries
			1.1.1.2 Commodity development - Livestock	1. Small ruminants	1. Increased productivity and production of small ruminants through dissemination of improved validated/ demonstrated and economical technologies
					2. Increased marketability of quality small ruminants products through application of appropriate post-harvest systems
					3. A cadre of knowledgeable and skilled stakeholders along the small ruminants value chain through capacity building programmes in production, post-harvest and value addition
				2. Feeds and feeding systems	1.Increased adoption and utilisation of feeding systems based on locally available feed resources
			1.1.1.3 Germplasm	1. Plant genetic resource	1. Availability of new/ improved germplasm of priority crops that will facilitate diversification of production
				2. Animal genetic resource	1. Availability of semen, embryo and / or quality/ improved small ruminant breeding stock
1. Development of Sustainable Industries	1.1 Science, Technology and Innovation	1.1.1 Knowledge generation, diffusion and application	1.1.1.4 Emerging issues	1. Herbals	1. Information on recommendations for optimising commercial production of selected herbals

CARIBBEAN AGRICULTURAL RESEARCH AND DEVELOPMENT INSTITUTE - ELEMENTS OF MTP 2011-2013

Strategic Axis	Focal Area	Priority Area	Programme	Sub-Programme	Institutional Expected Results
				2. Organics	1. Increased productivity and production of organic crops through dissemination, adoption and application of popularised validated/ demonstrated and economical technologies
				3. Agro-energy	1. Agronomic and biofuel production characteristics available for selected agro-energy crops
			1.1.1.5 Protected Agriculture	1. Production and marketing systems development	1. Enhanced marketing and trading systems for Protected Agriculture products in the Region
					2. Increased productivity and production through dissemination, adoption and application of validated/ demonstrated current best practices
					3. Availability of new/ improved production and post-harvest technologies through continuous generation and/or adaptation of new technologies
					4. Improved accessibility of information on PA to all stakeholders
					5. A cadre of knowledgeable and skilled stakeholders along the PA value chain through capacity building programmes in production and post-harvest
			1.1.1.6 Biotechnology development	1. Biotechnology for livestock commodities	1. Capacity developed to identify and certify purebred regional livestock breeds of interest
				2. Biotechnology for crop commodities	1. CMV /PVY resistant, hybrid hot pepper seed produced and made available to Region
					2. DNA fingerprint profile of Barbados Sea Island cotton
			1.1.1.7 Technical systems and services	1. Information & Communication	1. Better access to information on the Institute's priority areas through appropriate hardware, software and processes
				2. Marketing	1. Information to facilitate market oriented production systems available
				3. Biometrics	1. Higher scientific rigour in the design, analysis and reporting of the technical programme of CARDI and selected stakeholders
				4. R & D coordination	1. Technical support and liaison services available to Country Units

CARIBBEAN AGRICULTURAL RESEARCH AND DEVELOPMENT INSTITUTE - ELEMENTS OF MTP 2011-2013

Strategic Axis	Focal Area	Priority Area	Programme	Sub-Programme	Institutional Expected Results
			1.1.1.8 Promotion of Science, Technology and Innovation	1. ASTI capacity building	1. Key actors in the innovation system trained in ASTI methodology and application
				2. Institutional support systems	1. ASTI stakeholder consultation process mainstreamed as CARDI methodology
	1. 2 Natural Resource Management	1.2.1 Risk management	1.2.1.1 Invasive species management	1. Control	1. Knowledgeable/ informed population on threats of invasive species through information dissemination
				2. Coordination of approach	1. Protocols and processes for identification and mitigating effect of Invasive Species, especially Red Palm Mite
					2. Invasive species networks and early warning and management systems
			1.2.1.2 Climate change for agriculture development	1. Species/varietal adaptation	1. Varieties (of CARDI commodities) adapted to climate change variability identified
				2. Models and modelling	1. Facilitating relationship between knowledge of climate change factors and plant growth
				3. Seeds and seedling banks	1. Stored/ banks of adequate supplies of seeds and seedlings of landraces of staple food crops
1. Development of Sustainable Industries	1. 2 Natural Resource Management	1.2.2 Soil and water management	1.2.2.1 Soil management	1. Soil rejuvenation	1. Productive capacity of degraded soils in the Caribbean, including mined-out soils in Jamaica enhanced
				2. Soil conservation	1. Extension of soil conservation techniques to the wider farming community in the Caribbean
			1.2.2.2 Water management	1. Water harvesting, distribution and use	1. Extension of water harvesting technology, distribution and use to the wider farming community in the Caribbean
				2. Soil water enhancement	1. Soil water enhancement technologies developed for use by Caribbean farmers.
2. Development of Strategic Linkages	2.1 Partnership and Collaborative Initiatives	2.1.1 Build and maintain relationships	2.1.1.1 Regional R&D strategies	1. Development of R & D strategies	1. The acceptance of a Regional R&D strategy
				2. Coordination of initiatives to implement strategies	2. An integrated plan of action (involving key actors) that is operational

CARIBBEAN AGRICULTURAL RESEARCH AND DEVELOPMENT INSTITUTE - ELEMENTS OF MTP 2011-2013

Strategic Axis	Focal Area	Priority Area	Programme	Sub-Programme	Institutional Expected Results
			2.1.1.2 Relationships with key institutions and partners	1. Implementation of actions in current relationships 2. Develop new relationships	1. Significant contribution to the work programme under at least six MOUs
			2.1.1.3 Membership base for CARDI and "Friends of CARDI"	1. Membership base of CARDI	1. All CARICOM countries members of CARDI
				2. Friends of CARDI	2. "Friends of CARDI" operational and supporting CARDI's activities
	2.2 Advocacy	2.2.1 Promotion of CARDI	2.2.1.1 Branding CARDI as preferred R&D institution in CARICOM	1. Promotion of the "New" agriculture • Policy • Advocacy 2. Communications & Outreach strategy • Traditional and New media • Exhibitions • Open Days/ Field Days 3. Website management	1. The image of CARDI significantly enhanced
3. Institutional Strengthening	3.1. Resource Mobilisation and Management	3.1.1 Income generation	3.1.1.1 Donor/ resource agency mobilisation	1. Proposal development & management 2. Implementation 3. Monitoring and evaluation	1. The mobilisation of at least EC$38.4 million
					2. A functional PIU with all the procedures and guidelines for implementation fully operational
					3. Effective and efficient monitoring & evaluation systems
			3.1.1.2 Technical assistance		1. At least two events per year earning administrative fees of at least 7% conducted
			3.1.1.3 CARDI commercial activities		1."Commercial" activities on at least five field stations earning a total gross profit of no less than EC$0.5 million
					2. At least two newly developed technologies passed on for "scaling up" by agriculturepreneurs

CARIBBEAN AGRICULTURAL RESEARCH AND DEVELOPMENT INSTITUTE - ELEMENTS OF MTP 2011-2013

Strategic Axis	Focal Area	Priority Area	Programme	Sub-Programme	Institutional Expected Results
	3.2 Capacity building	3.2.1 Human resource development	3.2.1.1 Human resource capacity	1. Train staff, stakeholders/ clients	1. The skills set - quantum and scope - required for the Institute to become the preferred agricultural R&D institution in the Region known and available
				2. Leadership/ succession planning	2. Training programme (with appropriate tools) for CARDI staff and stakeholders available
				3. Thematic/ Commodity Teams	3. CARDI succession plan operational
				4. Centres of excellence	4. At least three thematic and three commodity teams functional
					5. At least two thematic and three commodity Centres of Excellence operational
			3.2.1.2 Rebrand human capacity; talent management	1. Core values	1. An updated and approved Human Resource Manual available
				2. Performance management	2. Performance management and assessment system operational
				3. Policies and procedures	3. Awards system operational
		3.2.2 Physical resources	3.2.2.1 Maintenance	1. Physical upgrade	1. Ownership of all buildings/stations occupied by CARDI legally accredited to it
					2. Prioritised maintenance programmes of fixed assets, particularly buildings, available
					3. Assessment of required field and office equipment compared to that available for the purpose completed
					4. Programme of resource mobilisation developed and initiated
3. Institutional Strengthening	3.2 Capacity building	3.2.3 Financial resources	3.2.2.2 Administration/ Operations	1. General administration	1.Revised guidelines for the administration and use of CARDI's assets available and in use throughout the Institute
				2. Registry	2. A registry system that is consistent with the hierarchy of CARDI Strategic Framework operational at Headquarters and in at least five country units
			3.2.3.1 Core and external resource management / FMIS	1. Accounting database management	1. Timeliness and availability of financial information for decision making and reporting to all stakeholders.
				2. Treasury management	2. Financial and other resources managed
				3. Fixed asset management	3. A fixed asset register available

CARIBBEAN AGRICULTURAL RESEARCH AND DEVELOPMENT INSTITUTE - ELEMENTS OF MTP 2011-2013

Strategic Axis	Focal Area	Priority Area	Programme	Sub-Programme	Institutional Expected Results
			3.2.3.2 Reports to stakeholders/agencies, etc.	1. Audit, financial, technical reports	1. The availability of Annual Audited Financial Accounts no later than two months after the end of the year
					2. The availability of monthly management accounts no later than ten days after the end of the previous month and donor financial reports no later than six weeks after termination of individual projects

2. Strategic Axes

Strategic Axis 1 is the principal framework for conducting the Institute's business and delivering on its mandate. It is concerned with the deployment of Science, Technology and Innovation to contribute to the Region's food and nutrition security and within the context of the optimisation of the use and conservation of the natural resources. However, there is the recognition that CARDI does not have all the resources (human, physical and financial) to deliver effective R&D support to the Region's agriculture. Therefore, consistent with the pillar of "working together" enunciated in the MTP 2008-2010, the Institute has to work closely with allied agencies/institutions in pursuing its mandate. Strategic Axis 2 offers the platform for the promotions of CARDI as the preferred agricultural research and development institution in CARICOM and its contribution to food and nutrition security and economic well being of the peoples of the Region. A suitable level of resources (quantum and quality) is essential if the Institute is to successfully fulfil its mandate. Strategic Axis 3, with programmes to build the capacity of CARDI staff, as well as that of partners and stakeholders and to mobilise and manage human physical resources, is the conduit for attaining the resources to enable delivering on Strategic Axis 1. Thus, the MTP is deliberately structured to provide organic linkages among the three Strategic Axes.

Similarly, within each Strategic Axis, the Programmes/ Sub-Programmes are organised in a strategic and logical flow. For example, in Strategic Axis 1, the development of commodities that ensure food and nutrition security takes precedence. However, in order to develop fully the commodities certain key germplasm and supportive thematic areas (emerging issues, biotechnology, etc.) are addressed. All these programmes are supported by the Technical Systems and Services programme (Information and Communication, Marketing, Biometrics and Research Coordination).

In Strategic Axis 2, CARDI will deliver on its mandate for the coordination of agricultural research and development within CARICOM. This is linked with the key aspect of this axis which is to maintain strong linkages with government institutions and partners (in the Caribbean and globally) who can help CARDI to deliver the Expected Results for Strategic Axis 1. Axis 2

also promotes the “CARDI brand” and seeks to transform the public image of agriculture into a vibrant new industry.

Strategic Axis 3 deals with the resources to drive primarily Strategic Axis 1. The programmes in Axis 3 seek to mobilise the requisite resources and then to enhance and manage the resources.

Programmes and Sub-programmes that constitute the MTP 2011 – 2013 are mostly the same as they were for MTP 2008 – 2010. This is understandable because the basis/ rationale for identifying Programmes and Sub-programmes during the previous medium term remains valid and relevant in 2011. For example, the mandated commodities – Roots and Tubers, Hot Pepper, Cereals and Grain Legumes and Small Ruminants are included in the CARICOM Priority Lists of Commodities. Nevertheless, in designing the MTP 2011 – 2013, some necessary and significant revisions/ additions have been made. The areas of changes are noted as follows:

- ***Germplasm***: “Plant Material” programme occurred in MTP 2008 – 2010. In the new MTP, the counterpart animal area has been introduced as a logical way of dealing with Germplasm. Therefore, two sub-programmes – “*Plant Genetic Resource*” and “*Animal Genetic Resource*” have been created under the “*Germplasm*” programme
- ***Protected Agriculture***: Based on the importance placed on this form of agriculture in the Region and the amount of funds allocated and the scope and spread of Expected Results across the Institute, Protected Agriculture has been instituted as a Programme in its own right. Herbals, Organics and Agro-energy remain as sub-programmes under Emerging Issues
- ***Promotion of Science, Technology and Innovation***: A new Programme, "*Promotion of Science, Technology and Innovation*" has been instituted under The Priority Area, “*Knowledge Generation, Diffusion and Application*” in order to institutionalise ST&I as the underpinning philosophy for the Institute's technical activities
- ***Risk Management***: The threats, challenges and opportunities for managing Invasive Species and Climate Change have many things in common. Therefore, a Priority Area, "*Risk Management*" has been created with Invasive Species and Climate Change as its programmes

- ***Soil and Water Management***: "*Soil and Water Management*" has been upgraded from Programme to Priority Area so that more focused attention can be given to those two natural resources
- ***Resource Mobilisation and Management and Income Generation***: In MTP 2011–2013, "*Resource Mobilisation and Management*" has been made the precedent Focal Area while "*Income Generation*" has been made a subordinate Priority Area
- ***Capacity Building***: The most fundamental revision is in the Focal Area "*Capacity Building*" in Strategic Axis 3. This Focal Area has been rationalised into three resource Priority Areas: Human, Physical and Financial. There is the recognition of a clear need for Physical Resource management and, hence the introduction of that Priority Area

2.1 Strategic Axis 1: Development of Sustainable Industries

Strategic Axis 1, Development of Sustainable Industries, which expresses the Institute's core mandate, comprises two Focal Areas, viz. (1) "*Knowledge Generation, Diffusion and Application*" and (2) "*Natural Resource Management*". There is one Priority Area, "*Technology Generation, and Transfer*" under Focal Area 1 and two Priority Areas, "*Risk* Management" and "*Soil and Water Management*" under Focal Area 2 (see **Table 1**). In the following sections, the key Expected Results, for Strategic Axis 1, projected to be achieved during the MTP 2011–2013 are described.

2.1.1 Focal Area: Knowledge Generation, Diffusion and Application

2.1.1.1 Priority Area: *Science, Technology and Innovation (ST&I)*

There are eight programmes and 20 sub-programmes defined in the Priority Area: "*Knowledge Generation, Diffusion and Application*". Although they are all relevant, in the description of the Expected Results for the MTP, 2011 – 2013, a greater emphasis will be placed on the programmes "*Commodity Development – Crops*", "*Commodity Development – Livestock*", (especially the sub-programmes "*Roots and Tubers*", and "*Small Ruminants*", respectively), and "*Protected Agriculture*". This is because of the resources to be spent and the intensity of work to be completed through the CFC projects and the IICA/CARDI Cooperative Programme for these sub-programmes. During the period, the CFC projects on Roots and Tubers – *"Increased Production of Root and Tuber Crops in the Caribbean through the Introduction of Improved*

Marketing and Production Technologies" and Protected Agriculture – *"Increased production of vegetables and herbs through the use of protected agriculture in the Caribbean: Haiti, Jamaica, Trinidad and Tobago"* which were started in 2010 will be fully executed. Additionally, the four-year CFC project on Small Ruminants – *"Diversification of the Caribbean Livestock Sector through the Production of Small Ruminants"* should be about three-quarters completed by the end of the MTP 2011 – 2013. Also, attention will continue to be paid to the other sub-programmes supported by the IICA/CARDI Programme. These include, *"Hot Pepper"* and *"Cereals and Grain Legumes"*

There is a common thread for the Expected Results for the Commodity Development programmes - Crops and Livestock. These can be summarised as follows:

Programmes 1 and 2: Commodity Development programmes - Crops and Livestock

- Increased productivity and production from popularised validated and economical technologies
- Availability of quality seeds, disease-free planting material and improved breeding stock to facilitate higher productivity
- Availability of new/improved production and post-harvest technologies through continuous generation and/or adaptation of new technologies
- Value added products enhancements through the identification/selection of suitable varieties/ breeds and relevant post-harvest technologies
- A cadre of knowledgeable and skilled stakeholders along the value chain through capacity building programmes in production, post-harvest and value addition
- Information on productivity and returns to investment of improved production practices known to the agricultural and general community

During the MTP 2011–2013, actions will continue to consolidate and advance the achievement of these Expected Results. Additionally, actions will be pursued towards the attainment of the key Expected Results for the rest of the programmes/sub-programmes under this Priority Area, as follows:

Programme 3: Germplasm

- Plant genetic resource

  Availability of new/improved germplasm of priority crops that will facilitate diversification of production
- Animal genetic resource

  Availability of semen, embryo and/or quality/improved small ruminant breeding stock

Programme 4: Emerging Issues

- Herbals

  Information on recommendations for optimising commercial production of selected herbals
- Organics

  Increased productivity and production of organic crops through dissemination, adoption and application of validated and economical technologies
- Agro-energy

  Agronomic and biofuel production characteristics available for selected agro-energy crops

Programme 5: Protected Agriculture

- Enhanced marketing and trading systems for Protected Agriculture products in the Region
- Increased productivity and production through dissemination (technology transfer), adoption and application of validated/demonstrated current best practices
- Availability of new/improved production and post-harvest technologies through continuous generation and/or adaptation of new technologies
- Improved accessibility of information on PA to all stakeholders
- A cadre of knowledgeable and skilled stakeholders along the PA value chain through capacity building programmes in production and post-harvest

Programme 6: Biotechnology Development

- Biotechnology development for livestock commodities

  Capacity developed to identify and certify purebred regional livestock breeds of interest
- Biotechnology development for crops commodities

  (a) CMV /PVY resistant, hybrid hot pepper seed produced and made available to Region.

  (b) DNA fingerprint profile of Barbados Sea Island cotton

Programme 7: Technical Systems and Services

- Information and Communication

  Better access to information on the Institute's priority areas through appropriate hardware, software and processes
- Marketing Information to facilitate market oriented production systems available
- Biometrics

  Higher scientific rigour in the design, analysis and reporting of the technical programme of CARDI and selected stakeholders
- R&D Coordination

  Technical support and liaison services available to Country Units

Programme 8: Promotion of Science, Technology and Innovation

- ASTI capacity building

  Key actors in the innovation system trained in ASTI methodology and application
- Institutional support systems

  ASTI stakeholder consultation process mainstreamed as CARDI methodology

2.1.2 Focal Area: Natural Resource Management

This focal area addresses the environmental/climatic context (limitations, constraints and opportunities) within which efficient regional agricultural production and productivity can occur. In respect of the MTP 2011 – 2013 the programmes under this focal area are cross-cutting in support of the programmes under the Priority Area, "*Technology Generation and Transfer*". The two Priority Areas embedded in this focal area and the programmes/ sub-programmes supported by them are described below.

2.1.2.1 Priority Area: Risk Management

There are two programmes and five sub-programmes defined in the Priority Area: "*Risk Management*". These programmes/sub-programmes and the focused Expected Results are:

Programme 1: Invasive Species Management

- Control

  Knowledgeable/informed population on threats of invasive species through information dissemination
- Coordination of approach

  (a) Protocols and processes for identification and mitigating effect of Invasive Species, especially Red Palm Mite,

  (b) Invasive species network and early warning and management systems

Programme 2: Climate Change for Agriculture Development

- Species/varietal adaptation

  Varieties (of CARDI commodities) adapted to climate change variability identified
- Models and Modelling

  Facilitating relationship between knowledge of climate change factors and plant growth
- Seeds and seedling banks

  Stored/ banks of adequate supplies of seeds and seedlings of landraces of staple food crops

2.1.2.2 Priority Area: Soil and Water Management

The Priority Area: "*Soil and Water Management*" comprises two programmes and four sub-programmes. The Expected Results from their execution are:

Programme 1: Soil Management

- Soil rejuvenation

  Productive capacity of degraded soils in the Caribbean including mined out bauxite soils in Jamaica enhanced

- Soil conservation

  Extension of soil conservation techniques to the wider farming community in the Caribbean

Programme 2: Water Management

- Water harvesting and use

  Extension of water harvesting technology to the wider farming community in the Caribbean
- Soil water enhancement

  Soil water enhancement technologies developed for use by Caribbean farmers.

2.2 Strategic Axis 2: Development of Strategic Linkages

This strategic axis develops the relationships of CARDI with its collaborators, partners and donors. The mobilisation of resources from the donor agencies is a component of Strategic Axis 3, but Axis 2 maintains close contact with the many collaborators and partners who should not only be viewed as donor agencies. This initiative is facilitated by a promotional/information process designed to demonstrate the Institute's achievements, capabilities and the environment within which it functions.

In this regard there are two Focal Areas: "*Partnerships and Collaborative* Linkages" and "*Advocacy*".

2.2.1 Focal Area: Partnerships and Collaborative Linkages

This Focal Area comprises the activities which define the relations between CARDI and all the players (nationally, regionally and internationally) associated with the agricultural and related sectors.

The limited investment in R&D, disorganisation within the sector and limited resources are all prominently recognised within the 'Jagdeo Initiative' and other interventions (Chapter 1). These constraints can be overcome by the achievement of the Expected Results for this Axis and will

help the Institute and the Region to pool resources, facilitate synergy, minimise overlap and raise the public image. The Priority Areas along with the respective Programmes are defined below.

2.2.1.1 Priority Area: Build and Maintain Relationships

Programme 1: Regional R&D Strategies

CARDI has the mandate from CARICOM to coordinate agricultural research and development. The problem of limited resources available to R&D is minimised if the various agencies in the Region work together. During the 2008-2010 Medium Term Plan, CARDI developed a strategy for coordination of regional R&D, but ownership by the stakeholders, including governments, will be sought in this period.

During the 2008-2010 MTP, CARDI was identified as the Caribbean Focal Point for the EU funded, ACP All Agricultural Commodities Programme. CARDI was thus able to integrate into the regional efforts the work of the five International Organisations (CFC, FAO, ITC, UNCTAD and World Bank) implementing this programme. The next step in this process will be to bring together the governments, International Organisations and other relevant bodies to ensure deeper integration and to agree on the implementation strategy and plan of action. The Expected Results for this programme are:

(i) The acceptance of a Regional R&D strategy
(ii) An integrated plan of action (involving key actors) that is operational

Programme 2: Relationships with key institutions and partners

In the 2008-2010 Medium Term Plan new agreements were signed with many regional and international partners. Many of these have led to new collaborative projects. When these are combined with those from prior to 2008, there are more than 30 initiatives. Many of the activities identified under Strategic Axes 1 and 3 are the result of or have benefitted from these partnerships.

In this period, the Institute will keep current linkages alive and continue to look for suitable new partners whilst simultaneously rationalising the available partnerships. The Expected Result is "*Significant contribution to the work programme under at least six MOUs*"

Programme 3: Membership base for CARDI and "Friends of CARDI"

Since CARDI was established the membership of CARICOM has increased. For CARDI to become a "true" CARICOM institution as envisaged in the revised Treaty of Chaguaramas, it must increase its membership. During this period, CARDI will seek to have the Bahamas and Suriname become members of the Institute.

CARDI recognises that it does not and will not have all of the human and financial resources necessary for it to satisfy the mandate given to it. As such it will continue the process of establishing the "Friends of CARDI" to assist in filling this gap. Prominent individuals and institutions such as research centres, universities and foundations, will be approached to be a part of the "Friends of CARDI".

The Expected Results of this Programme are:

- CARDI's membership increased by two CARICOM countries
- "Friends of CARDI" operational and supporting CARDI's activities

2.2.2 Focal Area: Advocacy

The Focal Area "*Advocacy*" seeks to promote/establish CARDI as a credible, lead regional R&D institution. However, it recognises that achievement of this status will only be meaningful if the "New" agriculture is promoted so that its characteristics and role as a key economic driver in the Region is understood and appreciated.

2.2.2.1 Priority Area: Promotion of CARDI

As a result of the successes of the 2008-2010 Medium Term Plan, CARDI has made considerable progress toward the goal of being recognised as a premium Institution. The single Priority Area within this Focal Area, namely "*Promotion of CARDI*", will continue this process as described below:

Programme 1: Branding CARDI as preferred R&D institution in CARICIOM

CARDI will continue to emphasise that the urgent regional (and global) requirement to improve Food Security and Food Sovereignty will require a mind shift in the perception of agriculture. An examination of the Strategic Axis 1 work programme will indicate many of the elements of the "New" agriculture. One of the vehicles for transmitting this message following its success in Trinidad and Tobago will be the conduct of the CARDI Public Lecture Series in at least five member countries.

The CARDI brand of relevant R&D for the "New" agriculture will be strongly promoted. This will be done through the accelerated implementation of its communication and outreach strategy which was formulated during the previous MTP. In this period there will be greater use of the new media and the Government Information Services in addition a much closer link developed with the regional media, through the association of Caribbean Media Workers. CARDI will continue issuing its publications such as, CARDI Review, Factsheets and Technical Manuals on a regular basis. As appropriate, those will be supplemented with videos and vignettes.

CARDI will also continue its successful series of National Open Days and take part in national exhibitions and shows where CARDI's image can be enhanced. CARDI's website will be given special attention to ensure relevance and presence. The Expected Result of this Programme is "*The image of CARDI significantly enhanced*".

2.3 Strategic Axis 3: Institutional Strengthening

This Strategic Axis addresses the building of a strong, organised and capable Institute. The successful execution of the programmes and priority actions within the two previous Strategic Axes requires an organisation with demonstrated organisational integrity and efficient and effective client driven performance. The attainment of the characteristics required to drive this process is dependent on the effective management of the available financial, technical, physical and human resources. In this context, activities within Strategic Axis 3 aim to always ensure this critical mass.

2.3.1 Focal Area: Resource Mobilisation and Management

The goal of the "*Resource Mobilisation and Management*" Focal Area is to procure from external sources, tangible and intangible assets required by the Institute and the implementation of a sustainable system for their efficient and effective use. This Focal Area comprises one Priority Area "*Income Generation*" and three Programmes which are defined as follows:

Programme 1: Donor/Resource Agency Mobilisation

This Programme involves the identification and collaboration with agencies which have direct/indirect access to the resources the Institute must obtain to implement its MTP. To facilitate this process, the principal functions of the programme are conducted within three sub-programmes which are described below:

i. *Proposal Development and Management*:

   The activities within this sub-programme comprise the preparation and submission of proposals to selected donor and/or Development Agencies. The subject matter of these proposals will be chosen so as to ensure the holistic development of CARDI relative to its contribution of enhancing regional food and nutrition security.

ii. *Implementation:*

   In the previous MTP, it was deemed necessary to establish a Project Implementation Unit (PIU) to ensure the effective, efficient and timely utilisation of obtained external resources. During this period the PIU will be strengthened along with the processes and procedures for implementation

ii. Monitoring and Evaluation:

   The management of the processes of Monitoring and Evaluation will be fully institutionalised during this MTP. As the Institute is critically dependant on external resources it is necessary that systems for verification, accountability and analysis are in place and functional.

The Expected Results of this Programme are:

- The mobilisation of at least EC$38.4 M
- A functional PIU with all the procedures and guidelines for implementation fully operational
- Effective and efficient monitoring and evaluation systems

Programme 2: Technical Assistance

The main aim of this programme is the attainment of services (including training, knowledge diffusion, partnership sustainability and linkages) which help the Institute to successfully carry out its mandate. Within this context, activities within the programme include workshop management, demonstration/training, co-ordination of regional events and technical/advisory services.

The Expected Result of the Programme is:

- The successful execution of at least two events per year earning administrative fees of at least 7%.

Programme 3: CARDI Commercial Activities

This programme involves the conduct of "commercial" activities in the countries (Antigua & Barbuda, Barbados, Belize, Grenada, St. Kitts/Nevis and St. Lucia) where CARDI has a Field Station. Investment resources to conduct these initiatives will be "loans" obtained from the Institute's core budget. It is mandatory that each activity within this programme returns a gross profit. These activities will also be used to determine (at lease in a preliminary manner) which of the technologies developed by the Institute can be "scaled up" by agriculture-entrepreneurs.

The Expected Results for this programme are:

- "Commercial" activities on at least five field stations earning a total gross profit of no less than EC$0.5 million
- At least two newly developed technologies passed on for "scaling up" by agriculturepreneurs

2.3.2 Focal Area: Capacity Building

This Focal Area represents the Institute's efforts to have adequate and appropriate human, physical and financial capacity (quantity and quality) to effectively implement the Institute's programmes. The Priority areas are "*Human Resources Development*", "*Physical Resources*" and "*Financial Resources*".

In addition to providing for greater technical exposure there will be promotion of linkages and networking with other research and development institutions at national, regional and international levels. These will include, but not limited, to IICA, FAO and the Universities of Florida, West Indies, Guyana, Wageningen and Greenwich; Research and Development Institutions, such as Chinese Academy of Agricultural Science, Indian Council of Agricultural Research, Latin American and Caribbean Consortium to Support Cassava Research and Development, IDIAF (Dominican Republic). Systems will be implemented to address issues in finance, administration and internal networking. The respective programmes are presented within their Priority Areas below.

Priority Area 1: Human Resource Development

Programme 1: Human Resource Capacity

Human Resource Capacity building involves in the first instance, an assessment of the skill sets and needs of the Institute for the period 2011-2013, as compared to what currently exists. This will be followed by addressing staff capacity at the Headquarters and Country Units to grow and improve in the skills needed. This will be achieved through succession planning associated with formal and informal training. The aim is to effect a smooth transition especially where the skills needed for particular jobs are not only unique to the Institution but are not readily available.

The Institute recognised that the full benefits of its research and resulting science and technology innovations will not be obtained by the sector's agri-entrepreneurs if its strategic partners and clients along the value chains do not themselves have a critical level of understanding and knowledge. Accordingly, as far as is possible, CARDI will either include such individuals in its training initiatives and/or aggressively seek short duration opportunities for them to obtain this knowledge.

As is possible, the Institute will continue to develop/maintain special relationships with its University partners that will allow its staff to obtain preferential conditions to pursue graduate training.

The Institute will also continue to:

a. Facilitate short term attachments of its staff and those of its partners and clients to Universities and specialised AR4D institutions such as CLAYUCA and CIP;
b. Expose both its administrative and technical staff, particularly junior staff to appropriate workshops, seminars and specialised short courses; and
c. Create opportunities for its administrative staff, particularly to improve their management and leadership skills through their involvement in the preparation and conduct of meetings, workshops, seminars, public lectures etc.

To enlarge its "catchment area" for young professionals the Institute will expand its programmes of undergraduate internships with UWI to:

1. Other Universities, e.g. University of Guyana, University of Technology, Jamaica and University of Trinidad and Tobago and
2. Graduate students in areas of special needs of the Institute. The Institute will work with the Government of Trinidad and Tobago for the continuation of the On the Job Trainee (OJT) programme that CARDI currently utilises. It will seek to engage other member countries to develop similar programmes which will allow CARDI to undertake coaching and mentoring.

The Institute will also continue to award the best student in agriculture at the CXC/CSEC level.

The Institute will document and coordinate the training tools it uses in its various training initiatives. Eventually it will have a compendium of training tools that will be made available for its strategic partners and stakeholders as a means of improving the utilisation and optimising the benefits of the human capacity available to CARDI and the sector as a whole. The Institute will create/maintain Commodity and Thematic Teams. These teams will be located within the Institute and be gradually expanded to include individuals of identified or similar skills. The Institute will therefore be creating a critical mass of expertise in key areas within the Region.

In a similar view, the Institute will create Physical, Thematic and/or Commodity Centres of Excellence. This is in keeping with its established modus operandi of focusing and recognition

of an agriculture that is driven by information, science and technology and that requires significant specialisation at the human and physical levels. For example the Institute will establish Centres of Excellence at:

i. The thematic level – Integrated Pest Management in Jamaica and St. Kitts/Nevis; Biotechnology and Tissue Culture in Barbados and St. Vincent and the Grenadines; Protected Agriculture, Dominica and Trinidad & Tobago; Soil and Water Management, Antigua & Barbuda and Jamaica; Seed Production, Antigua & Barbuda and Belize; Seedling Production, Grenada.
ii. The commodity level – Cereals and Grain Legumes, Belize and Guyana; Hot Pepper, Barbados and Trinidad & Tobago; Small Ruminants, Barbados, Jamaica and St. Kitts/Nevis; Roots and Tubers, St. Lucia and St. Vincent and the Grenadines.

The Expected Results for this Programme are:

- The skills set – quantum and scope – required for the Institute to become the preferred agricultural R&D institution in the Region known and available
- Training programmes (with appropriate training tools) for CARDI staff and stakeholders available
- CARDI succession plan operational
- At least three thematic and three commodity teams functional
- At least two thematic and three commodity Centres of Excellence operational

Programme 2: Re-branding human capacity and talent management

This Programme includes the definition of Core Values for the Institute, the management of the staff performance and development and/or conduct of the policies and procedures as they flow from the core values.

The Core Values for an organisation allow for an open and trusting dialogue environment; must ensure that opinions can be communicated openly and valued; must allow for synchrony between the Institute and self and must enable the achievement of quality, commitment and consistency. For CARDI, in addition to the above, the Core Values must be consistent with the three pillars – bottom up/client led, working together and accountability and transparency.

Consequently, the Core Value of CARDI are "integrity, professionalism and excellence".

The Institute's policies and procedures will be reviewed, revised and made available, as appropriate in the form of manuals.

The management and assessment of staff performance will be done utilising a system that is based on achievement of predetermined Expected Results and periodically, mutually agreed upon Priority Actions and Tasks. The Institute will continue to annually award outstanding staff performance with the Chairman's Award of Excellence. Additionally, awards recognising years of unbroken service to the Institute. These awards will be given at five year intervals starting from the initial achievement of five years.

The Expected Results for this Programme are:

- An updated and approved Human Resource Manual available
- Performance management and assessment system operational
- Awards system operational

2.3.2.1 Priority Area 2: Physical Resources

This Priority Area embodies the management of the assets of the Institute including inventorising, maintaining and upgrading/ updating as necessary, ensuring their safety and cataloguing of same.

Programme 1: Maintenance

To cater for the improvements (on a phased basis) of all of the Institute's fixed and movable assets and field and office equipment respectively. The Expected Results for this programme are:

- Ownership of all buildings/stations occupied by CARDI legally accredited to it
- Prioritised maintenance programmes of fixed assets, particularly buildings, available

- Assessment of required field and office equipment compared to that available for the purpose completed.
- Programme of resource mobilisation developed and initiated.

Programme 2: Administration/Operations

The available guidelines for the administration and operationalisation of the activities relative to the physical use of the assets of the Institute will be reviewed and as necessary updated. For example, files in the registry will be placed into catalogues following the hierarch of CARDI strategic framework.

The Expected Results of this Programme are:

- Revised guidelines for the administration and use of CARDI's assets available and in use throughout the Institute
- A registry system that is consistent with the hierarchy of CARDI Strategic Framework operational at Headquarters and in at least five country units

2.3.2.2 Priority Area 3: Financial Resources

The Medium Term 2008 to 2010 saw the beginning of a significant update in CARDI's financial systems and controls so as to upgrade the capacity of the Institute to produce more timely, accurate and relevant financial information as well as safeguard the Institute's assets. This was critical so that the Institute would be poised to handle the increase in external funding, its attendant projects and required reporting.

This work will be completed during the new Medium Term Plan, 2011 to 2013 and will result in a real time financial management information system among all CARDI Units.

This Priority Area has two Programmes as follows:

Programme 1:Core and external resources management/FMIS

The objective of this programme is to manage, record and track the resources of the Institute. This will achieved through three sub-programmes as follows:

i. ***Accounting database management*** – This sub-programme focuses on the capturing of all accounting transactions undertaken by the Institute. In 2010, CARDI upgraded its Financial Management Information System. Among other things this will promote greater connectivity among CARDI Units and more timely availability of accounting and financial information.

   The Expected Results for this Sub Programme is:
   CARDI's Financial Management System updated and harmonised to promote accuracy, transparency and timeliness of financial information.

ii. ***Treasury Management*** – This sub-programme focuses on managing the availability, security and disbursement of the cash resources and investments of the Institute to maximise returns and service its needs

   The Expected Results for this Sub Programme is:
   Financial and other resources managed

iii. ***Fixed Asset Management*** – This sub-programme focuses on the accounting for and tracking the Institute's Fixed Assets for the purpose of accounting, preventative maintenance and physical security.

The Expected Results for this Sub Programme is:

A fixed asset register available

Programme 2: Reports to Stakeholders/Agencies

The objective of this programme is to account for the use and custody of resources under the control of the Institute to all stakeholders and donor services. It therefore covers the provision of audit, other financial and management reports as well as technical reports

The Expected Results of this Programme are:

- The availability of Annual Audited Financial Accounts no later than two months after the end of the year
- The availability of financial reports as required by the donor sources no more than six weeks after the termination of the individual proposals
- The availability of month management accounts no later than ten days after the end of the previous month

D. IMPLEMENTATION PLAN

1. Introduction

The objective of this Chapter is to describe how the Institute will achieve the Expected Results identified for the programmes/sub-programmes listed in Strategic Axes 1 to 3. The Plan builds on the initiatives of the 2008-210 MTP. Within this period the Institute determined that successful implementation depended on the availability of suitable resources, internalisation and "ownership" by its professional staff and full commitment to its objectives by clients, stakeholders and strategic partners. Accordingly, the Institute's external and internal strategies as well as selected mechanisms employed are aimed to achieve this success. To make this success possible key issues that will be pursued include:

- The pursuit of collaborative initiatives, networking and industry evaluation systems following that for ASTI
- Organisational structure and management systems
- Internal performance evaluation and monitoring systems
- Human resource development
- Financing

1.1 Strategic Considerations

The 2008-2010 MTP positioned the Institute to give significant attention to the mobilisation of resources, the building of capacity and the strengthening of partnerships as principal prerequisites for the knowledge generation, diffusion and application. These will be strengthened/consolidated in the 2011-2013 MTP. Further, they will be used as a platform from the Institute can "scale up" its activities and results to full commercial levels. The external and internal strategies to facilitate this process are presented and discussed in the following Sections.

2. Internal Strategy

The goal of the internal implementation strategy is the creation and promotion of an efficient and effective CARDI, that positions itself to be a regional clearing house (broker) and Centre of Excellence for the generation, diffusion and application of knowledge along the value chain. To achieve this position, the Institute will:

1. Continue to refine its consultation process to determine clearly and have prioritised the development needs of the Region, selected industries (using the list of commodities agreed to by COTED) and as appropriate, enterprises
2. "Have" the expertise of its staff so that individually they become reference points in their respective scientific area
3. Prepare and disseminate compendia of research and development activities and results for the commodities thematic areas in which it worked
4. Strengthen its philosophy by team work and all inclusiveness with staff so as to equip them to interact more effectively with the Institute's clients

The internal mechanism that will be emphasised and refined to facilitate the above will include:

- Meetings

  Unit monthly Institutional: at least semi-annually, virtually and annually physically
- Reports

  Institutional: at least trimestral and annual, supported by Aide Memoires, Technical Manuals
- Seminars and Workshops

  Will be used to enhance the knowledge of staff (and, as appropriate, clients and partners) and also to fine tune their ability to disseminate information in all modes.
- Monitoring and Evaluation

  To ensure synergy between planned and achieved at the physical, technical and fianancial levels.

3. External Strategy

The goal of the external strategy is to continue the process for the establishment of an efficient collaborative network of stakeholders, collaborators and strategic partnerships within the public and private sectors. This will allow for the sharing of information, physical and financial resources within the framework of Strategic Axis 2.

It is recognized that in the new global environment, no single institution acting alone can effect the changes required to transform the agricultural and rural sectors to the productivity levels that guarantee regional food and nutrition security. Therefore the Institute is will continue to pursue a deliberate strategy of working together: building partnerships with national, regional and international organizations to create the critical mass needed for the effective delivery of the required products and services.

This framework is informed by the Agricultural Science, Technology and Innovation System (ASTI) by which CARDI's core business is conducted. The ASTI is defined by the complex interactions of enterprises, organisations and related sectors, as well as institutional behaviours, which determine the extent and rate at which information and knowledge are produced, transferred and utilised. It allows for strategic stakeholder interactions that facilitate information sharing, policy development and critically, a shared development vision and comprehensive understanding. Accordingly CARDI will takes a proactive role in building strong partnership arrangements, and utilizing it at the Commodity level through the value chain that is presented in Figure 6.

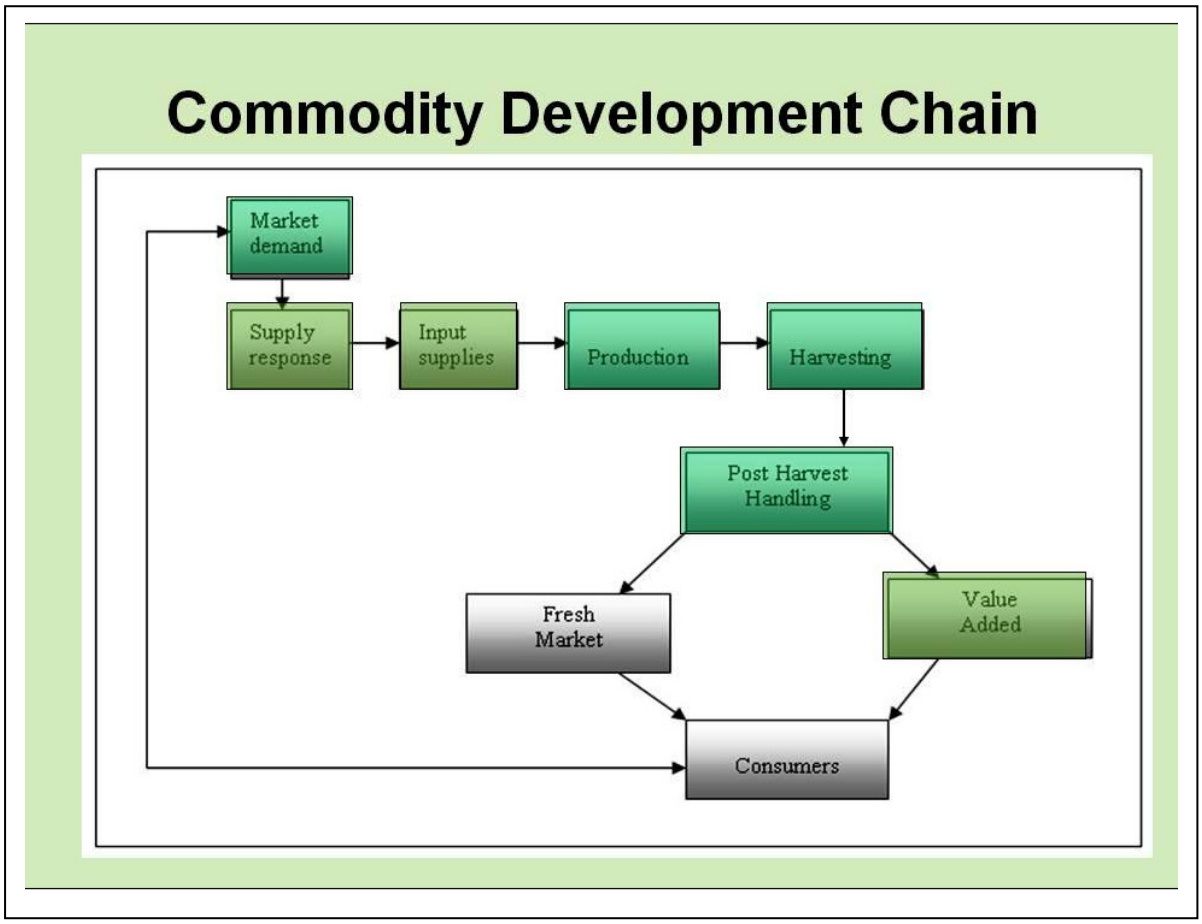


Figure 6: Commodity Development Chain

At the national level, CARDI will continue to promote the effective operationalisation of the National Coordinating Committee for Agricultural Research and Development (NCCARDs) or similar entities within the National Alliances where they exist.

At the Regional level, CARDI is working with FAO, IICA and UWI (The Faculty of Agriculture and Natural Sciences) to generate and transfer technology through strong commodity/thematic based groups and in developing an institutional Research Development and Application chain. It will be implemented in a commodity specific basis and is illustrated in Figure 7.

At the institutional level, CARDI is working with Universities e.g., UWI, UG, University of Florida (UF) and national research institutes such as National Agriculture Research Institute

(NARI), Guyana and Scientific Research Council of Jamaica and entrepreneurial entities, such as, CaFAN and Trinidad & Tobago Agribusiness Association to develop an institutional Research Development and Application chain. It will be promoted and implemented in a commodity-specific basis and is illustrated in Figure 7.

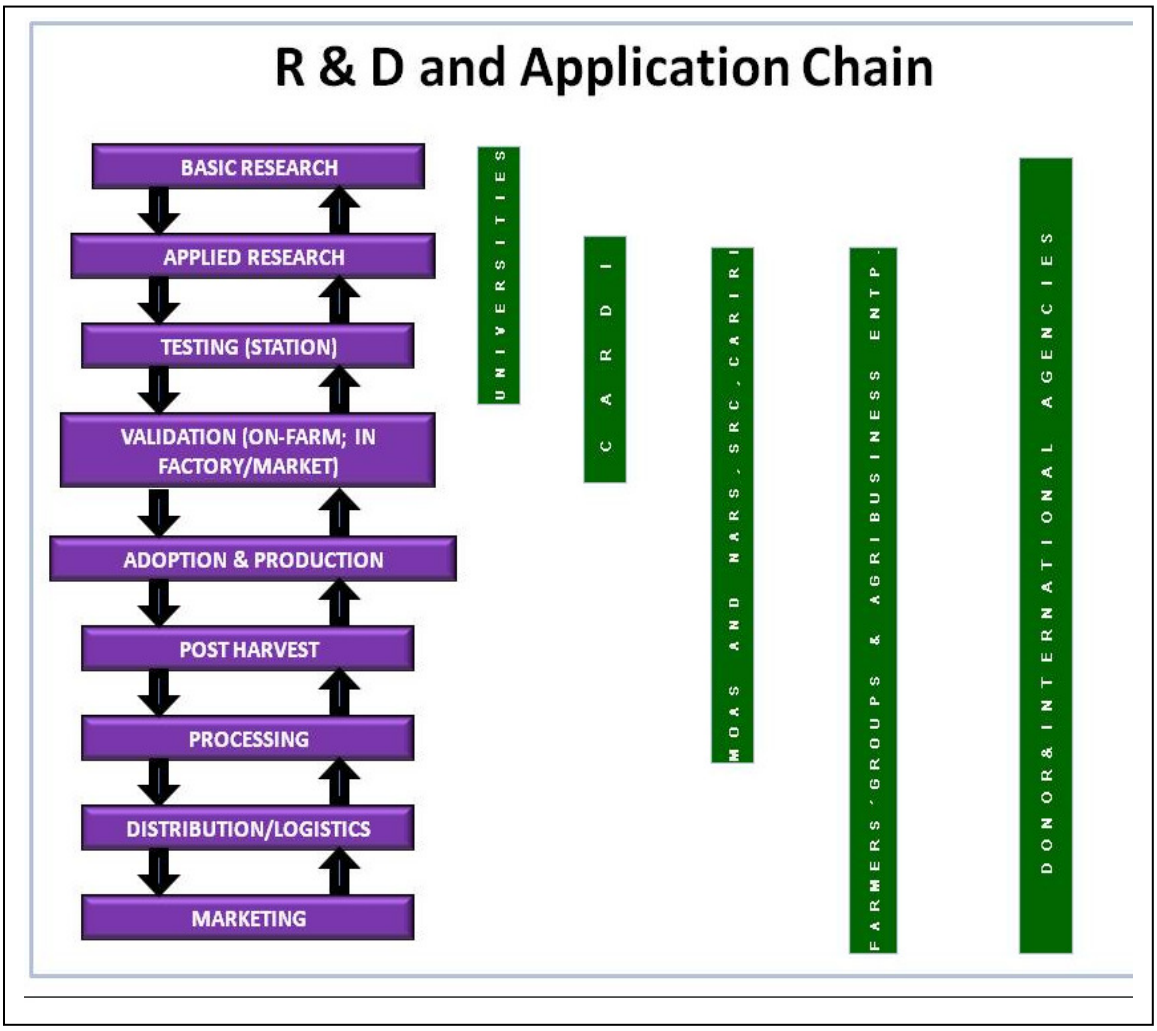


Figure 7: Research Development and Application Chain

At the hemispheric level, CARDI will consolidate its relationships with EMBRAPA and CATIE – PROCIS and FORAGRO respectively. Within the CGIAR system the effectiveness of this change will be enhanced by its growing list of key partners as exemplified below:

- The Universities within the Caribbean Council for Higher Education in Agriculturs (CACHE); research and development institutes, such as the National Agriculture and Research Institute (NARI) of Guyana and Scientific Research Council of Jamaica; agribusiness associations such as the Trinidad and Tobago Agribusiness Association.

4. ORGANISATION AND MANAGEMENT

At the start of the previous MTP an Organisation and Management Structure was developed based on the then paradigm of the Institute. These realities were primarily linked to the financial source, which was almost exclusively that obtained from Member States. During the implementation of the MTP, the paradigm changed with greater inflows of external resources and hence reduced dependence on core sources. This necessitated "tinkering" of the structure even though the basic framework remained. This revised organisation structure is described in the following sections.

4.1 Governance of CARDI

The Governance of CARDI is illustrated in Figure 8. These are:

i. The Board of Governors, consisting of Ministers responsible for agriculture in the Member States of the Institute
ii. The Board of Directors, comprising representatives of the Ministers along with those from the Universities of Guyana and the West Indies, along with observers from the Caribbean Development Bank (CDB), Food and Agriculture Organisation (FAO) and Inter-American Institute for Cooperation on Agriculture (IICA)
iii. The Executive Director: who is responsible for implementing the mandates and decisions of the Boards of Governors and Directors. He is supported by a Management Committee with respect to Technical and Scientific matters. He supervises three divisions; Office of the Executive Director, Corporate Services and Technical Services

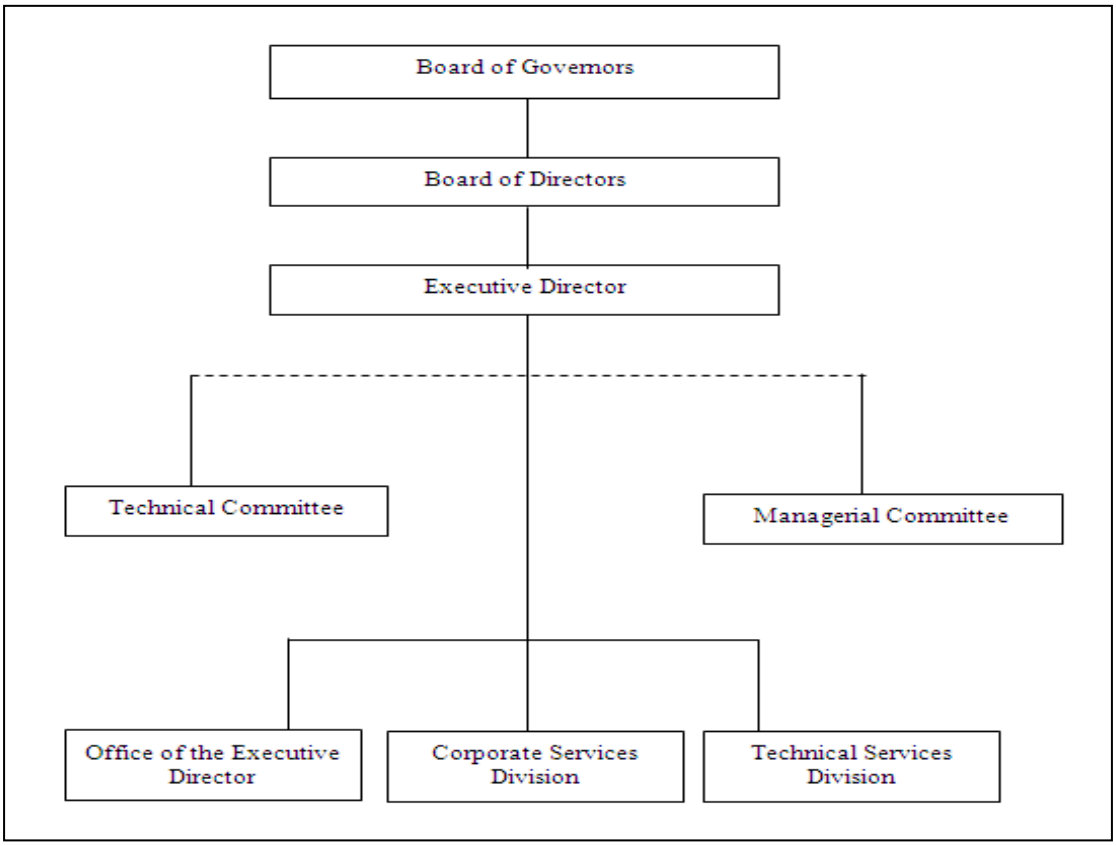


Figure 8: Governance of CARDI

4.1.1 Office of the Executive Director (OED)

The OED is managed by the Executive Director with support from an Executive Assistant. There are five Units within the Divisions

a) Project Implementation – responsible for supervising the implementation of externally funded projects that are implemented by individual Project Manangers.
b) Resource Mobilisation, Monitoring and Evaluation – responsible for searching and obtaining external resources and monitoring and evaluation of activities within the Institute
c) Strategic Alliances – responsible for the development and maintenance of critical relationships that would create mutual benefits

d) Science and Technology Support – responsible for the

i. Ensuring that CARDI is kept abreast of the methodology in the processes for the conduct of science, technology and innovation in relation to agricultural research and development; and

ii. Linkages with reputable AR4D institutions, particularly but not limited to those in the CGIAR system

e) Corporate Image – responsible for the creation and enhancement of the Institute's image that is in keeping with CARDI's identification as the premier regional agricultural research and development Institute. (Revised Treaty of Chaguaramas)

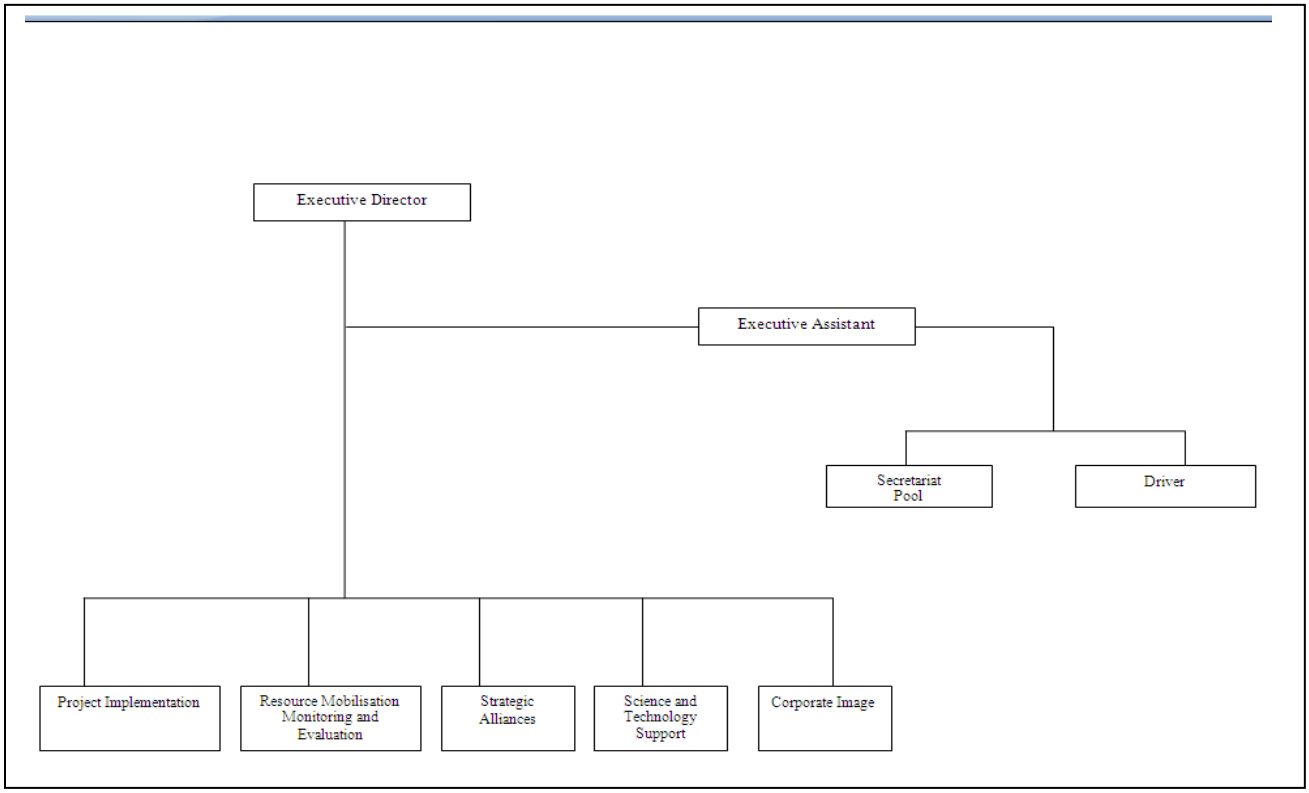


Figure 9: Office of the Executive Director

4.2 Technical Services Division

The Technical Services Division is coordinated by a Technical Services Manager, with support of a Technical Coordinator, Eastern Caribbean Division. There are two units:

a) Operations – responsible for the conduct of the Institute's programmes, primarily those of an AR4D nature, through the country offices. There is an ECS sub group of Country Offices

b) Technical Support Services – Responsible for:

   i. Ensuring synergy and cohesiveness within the Institute for its commodity and Thematic Programmes/sub-programmes and

   ii. Providing logistic support and coordination

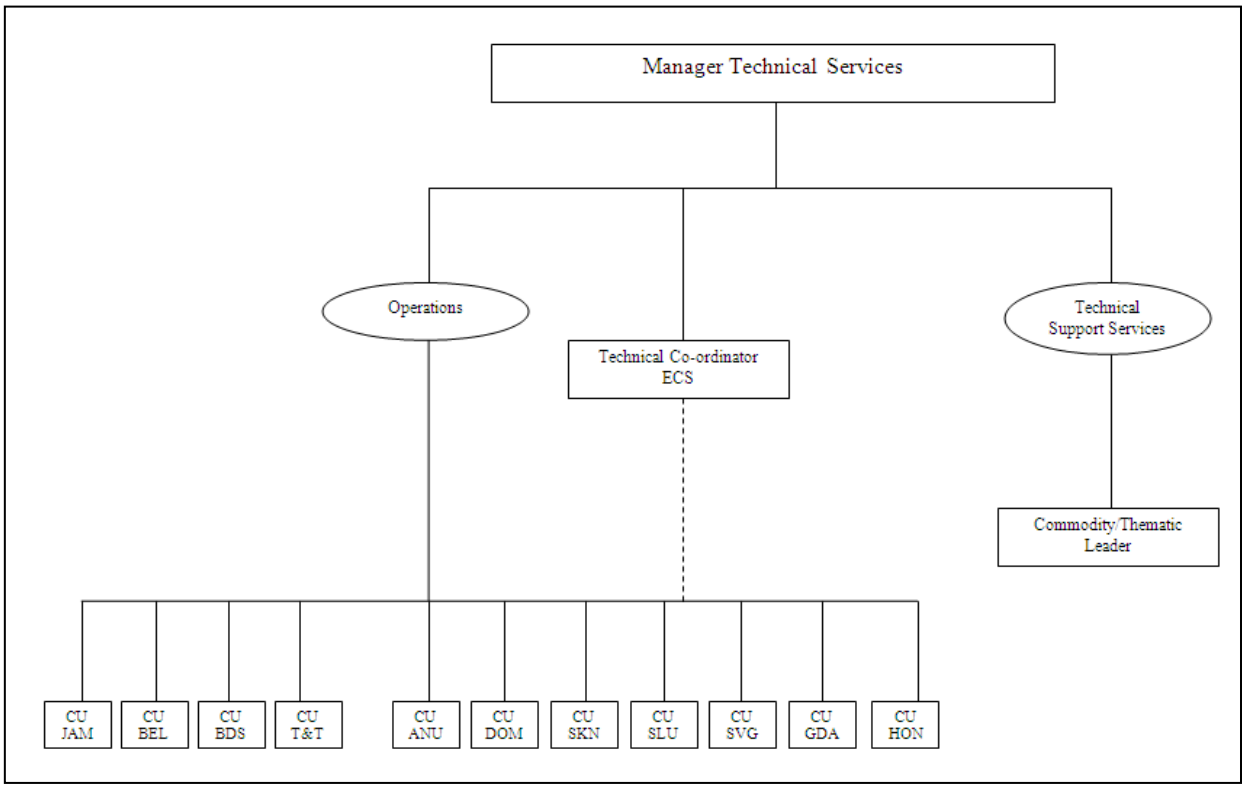


Figure 10: Structure of Technical Services Division

4.3 Corporate Services

The Corporate Services Division is coordinated by a Corporate Services Manager. There are two Units – Institutional Capacity Building and Finance.

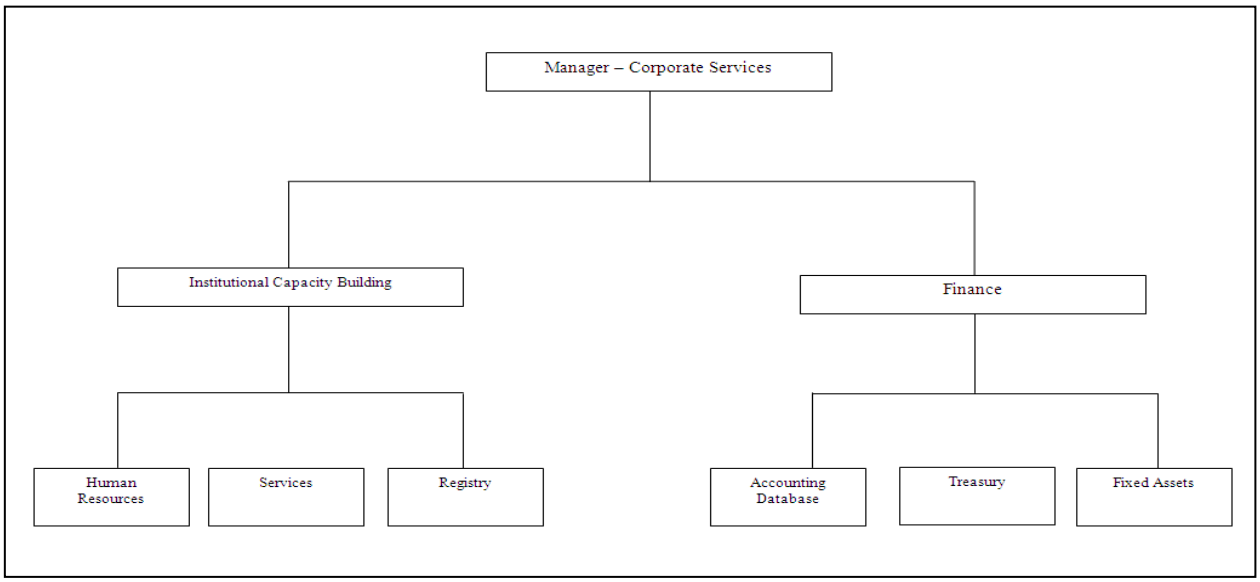


Figure 11: Structure of Corporate Services Division

a) Institutional Capacity Building – responsible for:
   i. The determination and maintenance of the human, technical and physical capacity of the Institute in accordance with available resources.
   ii. Establishment and introduction of core values and acceptable practices
b) Finance Unit – responsible for the maintenance and reporting of the Institutional, Management and Project Accounts of CARDI. To facilitate this it has three major management functions, accounting database, treasury and fixed assets

5. Financing the MTP

The budget for the Medium Term Plan 2011 to 2013 is presented in Table 1 with supporting information in Annexes 2 and 3. There are some challenges in the financing of Core activities during the period of the MTP. The budgets show a shortfall in core funding for the period of the MTP of $1.94Mn. The financing of the deficit is dealt with below.

5.1 Budget

The budget for the Medium Term Plan, 2011 to 2013 shows a total of $ 60.6 Mn in Income and $62.6 Mn in Expenditure for the three-year period. There is a core deficit of $1.9Mn for the period. This is expected to be financed from arrears of Government Contributions. Annex 4 shows the allocation of this deficit to Member Governments in arrears.

Table 2: Summary Income Statement MTP Budget (2011-2013)

	2011	**2012**	**2013**	**TOTAL**	**%**
Core Revenue	7,095	7,424	7,770	22,289	39
External Revenue	**9,362**	**12,162**	**16,826**	**38,350**	**61**
Total Revenue	**16,457**	**19,586**	**24,596**	**60,639**	**100**
Core Expenditure					
Personnel Expenditure	5,891	6,324	6,521	18,736	77
Administration	901	954	962	2,817	12
Operating Expenses	870	892	914	2,676	11
Total Core Expenditure	**7,662**	**8,170**	**8,397**	**24,229**	**100**
External Resources	9,362	12,162	16,826	38,350	
Total Expenditure	**17,024**	**20,332**	**25,223**	**62,659**	
Net Deficit (Core)	**(567)**	**(746)**	**(627)**	**(1,940)**	

On average, 61% of the financing will be provided from External Resources. Resource mobilisation efforts over the last three years have yielded positive results and have significantly changed the financing mix of CARDI. External resources moved from approximately 11% of total income in 2007 to 37% by 2010 and is expected to reach 68% of total income by 2013.

Table 3: The distribution of expenditure from core (which totals EC$24.2 Mn over the period) is as follows:

Expenditure	**%**
Personnel	77
Administration	12
Operating	11
Total	**100**

The following are the key assumptions that underlie the preparation of the budget:

- Governments would continue to make timely contributions: Jamaica will pay 70% of quota, Antigua 50% and Dominica 50%
- Cayman Islands will become a member in 2011, Bahamas in 2012 and Suriname in 2013
- Generated revenue will increase by 5% per annum
- Personnel costs to be increased by 4% in 2012
- Administrative cost to increase by 5% per annum

5.2 Source of Funds

As shown the source of funding has been broken down into two broad categories, Core and External Resources.

1. Core Financing – This consists mainly of contributions by member governments. The total due from government contributions is EC$7.79 Mn. However, allowances have been made based on payment trends. These have been factored into the assumptions.

Secondly, there is the revenue generation aspect of CARDI's operations. Revenues are derived from sale of produce on field stations, the sale of fixed assets, consultancy services as well Commercial Projects. Revenues from these sources are expected to increase from EC$ 500,000 in 2011 to EC$567,000 in 2013.

2. External Resources – The results from Resource Mobilisation efforts are expected to increase external resources from $9.4Mn in 2011 to $16.8Mn in 2013 where the ratio of External to Core funds will be approximately 2: 1.

The main Agreements that are expected to be active in the execution of the work programme during the period are with IICA, CTA, CARICOM/Japan, Common Fund for Commodities and the Tobago House of Assembly. These agencies are expected to provide 75% of the critically required external resources.

5.3 Financial Overview

While the Institute is in critical need of retooling, there are no funds available for this required investment. There is also the concern related longstanding liabilities owed by the Institute, including amounts owed to staff.

As indicated in the Executive Director's report, CARDI will mount a programme which seeks to negotiate funds for Institutional strengthening. Nevertheless, Member Governments must make the effort to pay contributions on time and reduce arrears.

CARDI's Balance Sheets on an annual basis (from 2011 to 2013) are summarised in Table 4 with details in Annex 4.

Table 4: Summarised Balance Sheets (2011 to 2013)

Medium Term Plan
Budgeted Balance Sheets

For the year ended December 31……..

	2010	**2011**	**2012**	**2013**
Non -current assets	2,129,637	2,022,085	2,090,480	2,028,623
Current Assets	7,829,538	5,914,011	5,548,126	5,543,854
Total Assets	**9,959,175**	**7,936,096**	**7,638,606**	**7,572,477**
Non Current Liabilities	454,020	302,680	151,340	0
Total Current Liabilities	7,047,027	4,554,912	3,334,399	2,749,587
Total Liabilities	7,501,047	4,857,592	3,485,739	2,749,587
Accumulated Fund	2,458,128	3,078,504	4,152,867	4,822,890
Total Liabilities and Funds	**9,959,175**	**7,936,096**	**7,638,606**	**7,572,477**

ANNEX: 1

DEFINITIONS OF STRATEGIC AXES, FOCAL AREAS AND PRIORITY AREAS

HIERARCHICAL ELEMENTS OF THE MTP FRAMEWORK	GOAL	OBJECTIVE	EXPECTED RESULTS
STRATEGIC AXIS 1: DEVELOPMENT OF SUSTAINABLE INDUSTRIES	Commercially viable commodity based industries	To increase productivity and competitiveness of agribusiness enterprises	• Improved information on key aspects of production and consumer preferences • Increased availability of improved plant and animal genetic resources • Improved food production and post-harvest systems
FOCAL AREA 1.1:*SCIENCE, TECHNOLOGY AND INNOVATION*	Commercially viable/ environmentally sound commodity based industries	To employ science and technology to established and emerging agriculture for increased agri-food production and industry development.	• Increased literature/ Demonstrations for the enhancement of producer and post- harvest skills • Increased availability of technology products and services • a data bank of improved and appropriate alternative production and post-harvest technologies
Priority Area: Technology Generation and Transfer	Technologically sound and innovative agri-food production and post harvest systems	To promote the awareness and application of modern, innovative and appropriate techniques within the agri-food sector	• Increased usage of improved production and post harvest technologies amongst agri-food producers
FOCAL AREA 1.2:*NATURAL RESOURCE MANAGMENT*	Commercially viable/ environmentally sound commodity based industries	To evaluate/ understand the environmental elements in the context of their contribution and impact on agri-food production	• Management systems for optimising the inclusion of nature's elements in the overall production and marketing • Information/DBase • Characterising/defining environmental elements of economic significance
Priority Area 1: Risk Management	Mitigate risk from invasive species and climate change on the development of sustainable industries	To manage the effects of invasive species on commodity-based industries and adapt same to changing climatic phenomena	• Management strategies for invasive species available • Climate change adaptation and mitigation options pursued
Priority Area 2: Soil and Water Management	Commodity-based industries developed under sound management of soil and water resources	To employ sustainable soil and water management practices in the development of commodity-based industries	• Soils for production of commodities rejuvenated and conserved • Efficient water resource harvesting and use adopted
STRATEGIC AXIS 2:	Efficient collaborative	To establish formalised	• MOUs, Contracts project

HIERARCHICAL ELEMENTS OF THE MTP FRAMEWORK	GOAL	OBJECTIVE	EXPECTED RESULTS
DEVELOPMENT OF STRATEGIC LINKAGES	network of stakeholders, collaborators and strategic partners within the public and private sectors	relationships with stakeholders, collaborators and strategic partners	documents • Access to other institutional resources • Established partnership in the execution of the institute's portfolio
FOCAL AREA 2.1: *PARTNERSHIPS AND COLLABORATIVE LINKAGES*	Efficient collaborative network of stakeholders, collaborators and strategic partners within the public and private sectors	To pursue through collaborative initiatives the sharing of information, physical and financial resources	• MOUs, Contracts, project documents • Shared resources • Attained CARDI deliverables
Priority Area: Build and Maintain Relationships	Efficient collaborative network of stakeholders, collaborators and strategic partners within the public and private sectors	To pursue/develop strategies for the collaborative delivery of technology products and services	• MOUs, Contracts, project documents • Established Research chains • Increased capacity of the Institute • Established 'Friends of CARDI' fund
FOCAL AREA 2.2: *ADVOCACY*	CARDI regarded as a credible, lead regional R&D institute and centre of excellence	To promote the philosophy and image of CARDI	• Promotional literature including brochures, fact sheets, periodicals etc.
Priority Area: Promotion of CARDI	CARDI regarded as a credible, lead regional R&D institute and centre of excellence	To conduct promotional activities that would prompt positive changes in the image of CARDI	• CARDI positioned as preferred the agricultural R&D institution in CARICOM
STRATEGIC AXIS 3: INSTITUTIONAL STRENGTHENING	A strong, organised and capable institute with recognised regional centres of excellence in agricultural R&D	To attain efficiency, sustainability in the performance of the institutes functions through strong institutional capacity	• Portfolio of strategic and priority actions • Implementation framework and schedule • Increased access to resources
FOCAL AREA 3.1: *RESOURCE MOBILISATION AND MANAGEMENT*	Availability of sufficient resources for implementing CARDI's work programme	To mobilise and manage financial, human and other physical resources for the implementation of CARDI's work programme	• Suitable quantum of resources available and managed for the work programme
Priority Area 1: Income generation	Increased financial and other resources required for the implementation of CARDI's work programme	To increase the Institute's financial resources through mobilisation from external sources, provision/ marketing of technology products and services and undertaking CARDI commercial activities	• Adequate amount of external funds available • A fair amount of financial resources from provision of technical assistance • At least EC$3.5 M generated from CARDI commercial activities
FOCAL AREA 3.2:	A strong organised	To build a strong	• Action plan for human

HIERARCHICAL ELEMENTS OF THE MTP FRAMEWORK	GOAL	OBJECTIVE	EXPECTED RESULTS
CAPACITY BUILDING	institution with capable human resources, financial strength and earning capacity	competent R&D institution with sufficient resources to carry out its mandate	resource training and development
Priority Area 1: Human Resource Development	A qualified, competent human resource base and human resource development system	To improve the human resource skills within the institute	• Portfolio of selected training programmes
Priority Area 2: Physical Resources (maintenance and administration/operations)	Buildings Maintained in line with good Health and Safety Standards.	To ensure that the aesthetic of the buildings housing CARDI's Units at HQ and Countries are enhanced.	• A comfortable and worker friendly environment for staff to work.
Priority Area 3: Financial Resources (financial resource mgmt. – a/c data base, treasury and fixed assets – reports to donors – audit, financial and technical)	An efficient system of accounting for the custody and use of resources by the Institute to promote transparency and accountability.	To manage, account for and report on the financial and other resources of the institute to all stakeholders	• CARDI's Financial management systems updated and harmonised to promote accuracy, transparency and timeliness of financial information. • Budget prepared and Co-ordinated • Financial Statements Audited • Financial and other Resources Managed • Fixed Assets Managed • Monthly management accounts and donor reports prepared

ANNEX 2:

DEFINITION OF PROGRAMMES / SUB-PROGRAMMES

1. STRATEGIC AXIS 1: DEVELOPMENT OF SUSTAINABLE INDUSTRIES **1.1 FOCAL AREA: Science, Technology and Innovation** **1.1.1 PRIORITY AREA: Knowledge Generation, Diffusion and Application**		
Programme / *Sub-programme*	**Objectives**	**Expected Results**
COMMODITY DEVELOPMENT - CROPS ***Roots and Tubers***	To contribute to the development of roots and tubers industries through the development of production packages that contribute to increased production and the preparation of investment profiles	• Increased productivity and production of roots and tubers from popularised validated/ demonstrated and economical technologies
		• Value added products enhancements through the identification/ selection of suitable varieties and relevant post-harvest technologies
		• Availability of quality disease-free planting material to facilitate higher productivity.
		• Availability of new/ improved production and post-harvest technologies through continuous generation and/or adaptation of new technologies.
		• A cadre of knowledgeable and skilled stakeholders along the roots and tubers value chain through capacity building programmes in production, post-harvest and value addition
COMMODITY DEVELOPMENT - CROPS ***Cereals and Grain Legumes***	To contribute to the development of sustainable supply of cereals and grain legumes for food and feed in the Region through the development and selection of suitable varieties, production and supply of seeds and the development of production technology packages for selected productive varieties	• Increased productivity and production of cereals and grain legumes from popularised validated/ demonstrated and economical technologies
		• Desired amounts of seeds for multiplication and commercial needs produced
		• At least one new variety of rice introduced in Guyana
		• A cadre of knowledgeable and skilled stakeholders along the cereals and grain legumes value chain through capacity building programmes in production, post-harvest and value addition

COMMODITY DEVELOPMENT - CROPS ***Hot Pepper***	To contribute to the development of the regional hot pepper industry by developing / acquiring suitable germplasm and developing appropriate production and post-harvest technology packages to facilitate commercial production and supply to appropriate markets	• Increased productivity and production of hot pepper from popularised validated/ demonstrated and economical technologies for fresh and processed markets
		• Pure indigenous varieties available
		• Desired amounts of commercial seeds of market-demanded varieties
COMMODITY DEVELOPMENT - CROPS ***Fruits and Vegetables***	To contribute to the development of fruits and vegetables industries through the development of production and post-harvest technology packages that contribute to the preparation of investment profiles for the development of sustainable fruits and vegetables industries.	• Increased productivity and production of fruits and vegetables from popularised validated/ demonstrated and economical technologies
		• Greater amount of quality and disease free planting material available in a larger number of countries
COMMODITY DEVELOPMENT - LIVESTOCK ***Small Ruminants***	To increase the availability and supply of small ruminant products to regional consumers	• Increased productivity and production of small ruminants through dissemination of improved validated/ demonstrated and economical technologies.
		• Increased marketability of quality small ruminants products through application of appropriate post-harvest systems
		• A cadre of knowledgeable and skilled stakeholders along the small ruminants value chain through capacity building programmes in production, post-harvest and value addition

COMMODITY DEVELOPMENT - LIVESTOCK ***Feeds and Feeding Systems***	To promote greater use of indigenous feed resources	• Increased adoption and utilisation of feeding systems based on locally available feed resources
GERMPLASM ***Plant Genetic Resource***	To boost crop production through the development and release of plant germplasm suited to different production systems	• Availability of new/ improved germplasm of priority crops that will facilitate diversification of production
GERMPLASM ***Animal Genetic Resource***	To boost livestock production through the provision of adequate supply of quality breeding stock	• Availability of semen, embryo and / or quality/ improved small ruminant breeding stock
EMERGING ISSUES - ***Herbals***	To identify and demonstrate the commercial production and post-harvest handling of indigenous herbs.	• Information on recommendations for optimising commercial production of selected herbals
EMERGING ISSUES - ***Organics***	To facilitate the development of sustainable organic agriculture industry through the development and demonstration of production, handling and marketing technology packages	• Increased productivity and production of organic crops through dissemination, adoption and application of popularised validated/ demonstrated and economical technologies.
EMERGING ISSUES - ***Agro-energy***	To initiate a systematic evaluation of the potential for energy production of selected agro-energy crops	• Agronomic and biofuel production characteristics available for selected agro-energy crops

PROTECTED AGRICULTURE	To facilitate the development of sustainable protected agriculture industry through the development and demonstration of production, handling and marketing technology packages	• Enhanced marketing and trading systems for Protected Agriculture products in the Region
		• Increased productivity and production through dissemination, adoption and application of validated/ demonstrated current best practices
		• Availability of new/ improved production and post-harvest technologies through continuous generation and/or adaptation of new technologies
		• Improved accessibility of information on PA to all stakeholders
		• A cadre of knowledgeable and skilled stakeholders along the PA value chain through capacity building programmes in production and post-harvest
BIOTECHNOLOGY DEVELOPMENT ***Biotechnology Development for Livestock Commodities***	To upscale the quality of R&D and increase productivity of commodities through the application of biotechnology	• Capacity developed to identify and certify purebred regional livestock breeds of interest
BIOTECHNOLOGY DEVELOPMENT ***Biotechnology Development for Crops Commodities***		• CMV /PVY resistant, hybrid hot pepper seed produced and made available to Region
		• DNA fingerprint profile of Barbados Sea Island cotton
TECHNICAL SERVICES AND SYSTEMS - ***Information and Communication***	To facilitate improved access to information and communication within and outside the Institute	• Better access to information on the Institute's priority areas through appropriate hardware, software and processes
TECHNICAL SERVICES AND SYSTEMS - ***Marketing***	To provide marketing information (signals/ response, characteristics, demand, etc.) for CARDI focus commodities and thematic areas to allow for the development of appropriate market-driven technologies	• Information to facilitate market oriented production systems available

TECHNICAL SERVICES AND SYSTEMS - ***Biometrics***	To provide biometrics support to CARDI's work programme and to stakeholders	• Higher scientific rigour in the design, analysis and reporting of the technical programme of CARDI and selected stakeholders
TECHNICAL SERVICES AND SYSTEMS – ***R&D Coordination***	To provide scientific, other technical and logistics back-stopping for the Country Units	• Technical support and liaison services available to Country Units
PROMOTION OF SCIENCE, TECHNOLOGY AND INNOVATION - ***ASTI Capacity Building***	To develop the capacity of CARDI and key stakeholders to better understand the strengths and weaknesses of the local science, technology and innovation system in the agricultural sector	• Key actors in the innovation system trained in ASTI methodology and application
PROMOTION OF SCIENCE, TECHNOLOGY AND INNOVATION - ***Institutional Support Systems***	To mainstream agricultural science, technology and innovation systems within the CARDI strategic planning, programme development and execution function	• ASTI stakeholder consultation process mainstreamed as CARDI methodology
1.2 FOCAL AREA: Natural Resource Management		
1.2.1 PRIORITY AREA: Risk Management		
INVASIVE SPECIES MANAGEMENT - ***Control***	To facilitate regional collaborative dialogue on and develop strategies both at regional and country levels for research and development and action plans for the management of invasive species	• Knowledgeable/ informed population on threats of invasive species through information dissemination
INVASIVE SPECIES MANAGEMENT -	To improve opportunities for awareness of global action for the identification and control	• Protocols and processes for identification and mitigating effect of Invasive Species, especially Red Palm Mite

Coordination of Approach	of invasive species	• Invasive species networks and early warning and management systems
CLIMATE CHANGE FOR AGRICULTURE DEVELOPMENT - ***Species/ Varietal Adaptation***	To identify crops suited to different climate change scenarios	• Varieties (of CARDI commodities) adapted to climate change variability identified
CLIMATE CHANGE FOR AGRICULTURE DEVELOPMENT – ***Models and Modelling***	To ensure the Regions capacity for climate change modelling	• Facilitating relationship between knowledge of climate change factors and plant growth
CLIMATE CHANGE AND AGRICULTURAL DEVELOPMENT - ***Seeds and Seedling Banks***	To contribute to ability of the Caribbean Community's agriculture sector to recover quickly from catastrophic disasters	• Stored/ banks of adequate supplies of seeds and seedlings of landraces of staple food crops
1.2.2 PRIORITY AREA: Soil and Water Management		
SOIL MANAGEMENT - ***Soil Rejuvenation***	To develop effective management systems for the rejuvenation of degraded soil resources in the Caribbean for sustainable agricultural production.	• Productive capacity of degraded soils in the Caribbean, including mined-out soils in Jamaica enhanced
SOIL MANAGEMENT - ***Soil Conservation***	To demonstrate the effectiveness of soil conservation techniques in maintaining soil productivity for sustainable agricultural production in the Caribbean.	• Extension of soil conservation techniques to the wider farming community in the Caribbean
WATER MANAGEMENT - ***Water Harvesting and Use***	To demonstrate the effectiveness of water harvesting techniques in enhancing water storage for sustainable agricultural production in the Caribbean.	• Extension of water harvesting technology to the wider farming community in the Caribbean
WATER MANAGEMENT - ***Soil Water enhancement***	To assess the effectiveness of biochar and other soil ameliorants in enhancing soil water storage for agricultural production in the Caribbean	• Soil water enhancement technologies developed for use by Caribbean farmers.

2. STRATEGIC AXIS 2: DEVELOPMENT OF STRATEGIC LINKAGES		
2.1 FOCAL AREA: Partnerships and Collaborative Initiatives		
2.1.1 PRIORITY AREA: Build and Maintain Relationships		
Programme / *Sub-programme*	**Objectives**	**Expected Results**
REGIONAL R&D STRATEGIES	To co-ordinate, strengthen and promote R&D in the Caribbean	• An approach to an R&D strategy for the Caribbean
		• System developed to guide the R&D strategy
		• Operational NCCARDs in countries
RELATIONSHIPS WITH KEY INSTITUTIONS AND PARTNERS - ***Implementation of actions in current relationships***	To ensure that the MOUs signed by CARDI contribute to the work programme in Strategic Axis 1	• Significant contribution to the work programme under at least six MOUs
RELATIONSHIPS WITH KEY INSTITUTIONS AND PARTNERS - ***Develop new relationships***	To develop/strengthen relationships with technical, academic, development and finance entities and with regional integration agencies	• At least three new MOUs or renewal of old MOUs
MEMBERSHIP BASE OF CARDI AND 'FRIENDS OF CARDI' - ***Membership base of CARDI***	To expand membership base of CARDI to other CARICOM territories	• At least two other CARICOM territories become new members of CARDI
MEMBERSHIP BASE OF CARDI AND 'FRIENDS OF CARDI' - ***Friends of CARDI***	To contribute to increased resource flows into CARDI	• Signed agreement for "Friends of CARDI"
2.2 FOCAL AREA: Advocacy		
2.2.1 PRIORITY AREA: Promotion of CARDI		
PROMOTION OF THE 'NEW' AGRICULTURE - ***Public Lecture Series***	To sensitise stakeholders and the general public to contemporary issues in the 'New Agriculture'	• At least three public lectures organised across the Institute annually

BRANDING CARDI AS PREFERRED AGRICULTURAL R&D INSTITUTION IN CARICOM - ***Communication and Outreach Strategy***	To publicise CARDI activities through the proactive engagement of stakeholders and the public through the media and other outreach mechanisms	• CARDI brand developed
		• Media coverage of CARDI events
		• Publications, posters
		• Print and broadcast media presentations
2.2 FOCAL AREA: Advocacy		
2.2.1 PRIORITY AREA: Promotion of CARDI		
Programme / *Sub-programme*	**Objectives**	**Expected Results**
BRANDING CARDI AS PREFERRED AGRICULTURAL R&D INSTITUTION IN CARICOM - ***Website Management***	To promote CARDI's image to the world through the management of an informative and current website	• A dynamic website which is updated at least weekly promoting CARDI to the world
BRANDING CARDI AS PREFERRED AGRICULTURAL R&D INSTITUTION IN CARICOM - ***Workshop Management***	To facilitate the smooth execution of internally and externally based seminars/conferences through the development and implementation of an efficient and effective system.	• Workshops successfully executed with minimal hindrances.
BRANDING CARDI AS PREFERRED AGRICULTURAL R&D INSTITUTION IN CARICOM - ***Workshop Management***	To oversee negotiations and secure workshop venues and accommodation for participants at favourable rates.	• Favourable negotiated contract signed.
		• Workshop venue and accommodation secured for at least 8 seminars/conferences per year
	To develop and coordinate the dissemination of targeted information packages to participants and media kits to media houses where necessary.	• Information packages developed and disseminated to participants
		• Media Kits developed and disseminated to Media houses.

3. STRATEGIC AXIS 3: INSTITUTIONAL STRENGTHENING 3.1 FOCAL AREA: Resource Mobilisation and Management 3.1.1 PRIORITY AREA: Income Generation		
DONOR/ RESOURCE AGENCY MOBILISATION - ***Proposal Development and Management***	To submit project documents to potential donors/collaborators for the procurement of resources	• The mobilisation of at least EC$38.4 M
DONOR/ RESOURCE AGENCY MOBILISATION - ***Implementation, Monitoring and Evaluation***	To develop and implement a credible system for measuring/analysing the execution of the institute's POW	• Effective and efficient monitoring and evaluation systems • A functional PIU with all the procedures and guidelines for implementation fully operational
TECHNICAL ASSISTANCE	To facilitate the provision of technical support for the implementation of the institute's POW	• At least two events per year earning administrative fees of at least 7% conducted
CARDI COMMERCIAL ACTIVITIES	To increase CARDI's flow of income through commercial activity on station/rented facilities	• Commercial" activities on at least five field stations earning a total gross profit of no less than EC$0.5 million • At least two newly developed technologies passed on for "scaling up" by agriculturepreneurs
HUMAN RESOURCE CAPACITY - ***Train staff, stakeholders/ clients***	To ensure organised and co-ordinated training programmes for staff, stakeholders/ clients	• Portfolio of selected training programmes
HUMAN RESOURCE CAPACITY - ***Leadership/ succession planning***	To ensure sustainability of the institute's core capabilities	• Succession plan available
HUMAN RESOURCE CAPACITY - ***Thematic/ Commodity Teams***	To develop thematic and commodity specialist teams to address respective issues	• Operational Thematic and Commodity teams

HUMAN RESOURCE CAPACITY - ***Centres of Excellence***	To establish a portfolio of skills that is available to the wider agricultural sector	• Centres of excellence located in selected member countries
REBRAND HUMAN CAPACITY; TALENT MANAGEMENT - ***Core values***	To establish guidelines for which members of staff are to conduct themselves	• CARDI core values internalised by staff
REBRAND HUMAN CAPACITY; TALENT MANAGEMENT - ***Performance management process***	To facilitate the enhanced performance and achievements of staff	• System for the appraisal and rewarding of staff performance
REBRAND HUMAN CAPACITY; TALENT MANAGEMENT - ***Policies and procedures***	To ensure availability of up-to-date policy guidelines, including staff rules and regulations	• Manual of corporate reporting, management and networking systems
MAINTENANCE - ***Physical upgrade***	To ensure that the aesthetic of the buildings housing CARDI's Units at HQ and Countries are enhanced.	• Physical Plant Upgrade Resources, Safety and Security
ADMINISTRATION/ OPERATIONS - ***Security***	To ensure property security for staff and physical assets of CARDI's property.	• All staff are housed in a safe and secure environment. CARDI's physical assets are all accounted for at HQ and Country Units.
ADMINISTRATION/ OPERATIONS - ***Registry***	To ensure that all Registry services are in keeping with modern practices.	• All modern technologies for effective records management are available.
ADMINISTRATION/ OPERATIONS - ***General Administrations***	To provide general office and administration support, including personnel and office practices, to the offices	• All personnel administration services are in line with the policies and procedures of the Institute • General office and administration tasks completed

3.2 FOCAL AREA: Capacity Building **3.2.3 PRIORITY AREA: Financial Resources**		
CORE AND EXTERNAL RESOURCES MANAGEMENT/ FMIS - ***Accounting Database Management***	To improve the timeliness and availability of financial information for decision making and reporting to all stakeholders.	• CARDI's Financial management systems updated and harmonised to promote accuracy, transparency and timeliness of financial information.
CORE AND EXTERNAL RESOURCES MANAGEMENT/ FMIS - ***Treasury Management***	To manage the availability, security and disbursement of the cash resources and investments of the institute to maximise returns and service the needs of the institute	• Financial and other resources managed
CORE AND EXTERNAL RESOURCES MANAGEMENT/ FMIS - ***Fixed Asset Management***	To account for and track the Institute's Fixed Assets for the purpose of accounting, preventative maintenance and physical security.	• Fixed Asset register available
REPORTS TO STAKEHOLDERS/ AGENCIES, ETC. - ***Audit, Financial, Technical Reports***	To account for the use and custody of resources under the control of the Institute to all stakeholders.	• Audited financial statement available
		• Monthly management accounts and donor reports prepared

ANNEX 3

EXTERNAL NETWORK FOR THE IMPLEMENTATION OF CARDI'S PROGRAMMES

Element: Commodity Chain	Description	CARDI Collaborative Institutions
Market demand	Information on characteristics of the market	CARDI, National Marketing Entities, CABA
Supply response	Addresses issue of reaction by researchers/producers in response to market information	CARDI, Universities, NARIs, Research Institutions
Input supplies	Inputs/resources required to meet supply response	CARDI, Donors, Collaborators, Stakeholders
Production /systems	The entire range of commodity production inputs and services on station and on farm	CARDI
Harvest/Post harvest systems	Activities including crop harvest, slaughtering, cleaning, storage etc	CARDI, National Marketing Entities
Market for primary products	The availability of commodities in primary form	CARDI, National Marketing Entities
Market for value added products	The availability of commodities in processed form	CARIRI, processors in the private sector, CABA
Consumers	The final consumption of products and services and feedback	National marketing entities

ANNEX 4

Summarised MTP Budget
January – December 2011- 2013

Medium Term Plan
Budgeted Balance Sheets
For the year ended December 31.....

		%	2010	%	2011	%	2012	%	2013	%	Total
CORE											
Revenue											
Govt Contribution	Current	88	5,594	93	6,595	93	6,899	93	7,203	93	20,697
Revenue Generation		12	736	7	500	7	525	7	567	7	1,592
Total Core Revenue		**100**	**6,330**	**100**	**7,095**	**100**	**7,424**	**100**	**7,770**	**100**	**22,289**
Expenditure											
Personnel costs	Professional	41	2,956	39	2,966	39	3,181	39	3,277	39	9,424
Personnel costs	Technical	33	2,409	32	2,445	32	2,644	33	2,745	32	7,834
Personnel costs	Casual	7	464	6	480	6	499	6	499	6	1,478
Sub total - Staff costs		**81**	**5,829**	**77**	**5,891**	**77**	**6,324**	**78**	**6,521**	**77**	**18,736**
Admin expenses		12	847	12	901	12	954	11	962	12	2,817
Sub-total - staff/admin.		**93**	**6,676**	**89**	**6,792**	**89**	**7,278**	**89**	**7,483**	**89**	**21,553**
Operating	Core	7	521	11	870	11	892	11	914	11	2,676
Total Core Expenditure		**100**	**7,197**	**100**	**7,662**	**100**	**8,170**	**100**	**8,397**	**100**	**24,229**
Net Surplus/(Deficit) Core			**(867)**		**(567)**		**(746)**		**(627)**		**(1,940)**
EXTERNAL RESOURCES											
Inflows		100	4,414	100	9,362	100	12,162	100	16,826	100	38,350
Total Inflows		**100**	**4,414**	**100**	**9,362**	**100**	**12,162**	**100**	**16,826**	**100**	**38,350**
Outflows											
Operating		100	2,544	100	9,362	100	12,162	100	16,826	100	38,350
Total Outflows		**100**	**2,544**	**100**	**9,362**	**100**	**12,162**	**100**	**16,826**	**100**	**38,350**
Net Surplus/(Deficit) External Resources			**1,870**		**0**		**0**		**0**		**0**
TOTAL-CORE AND EXTERNAL RESOURCES											
Core Revenue		59	6,330	43	7,095	38	7,424	32	7,770	37	22,289
External Resources Inflows		41	4,414	57	9,362	62	12,162	68	16,826	63	38,350
Total Inflows		**100**	**10,744**	**100**	**16,457**	**100**	**19,586**	**100**	**24,596**	**100**	**60,639**
Expenditure/Outflows											
Total Core Expenditure		74	7,197	45	7,662	40	8,170	33	8,397	39	24,229
Operating - External Resources		26	2,544	55	9,362	60	12,162	67	16,826	61	38,350
Total Expenditure/Outflows		**100**	**9,741**	**100**	**17,024**	**100**	**20,332**	**100**	**25,223**	**100**	**62,579**
Net Surplus/(Deficit) Core and External Resources			**1,003**		**(567)**		**(746)**	**0**	**(627)**		**(1,940)**

Medium Term Plan
Budgeted Balance Sheets

For the year ended December 31……..

	2010	2011	2012	2013
Non -current assets				
Freehold Land	170,787	170,787	170,787	170,787
Leasehold Properties	418,804	398,910	378,965	360,017
Buildings	796,520	756,694	718,859	682,916
Equipment	474,841	472,357	535,821	590,239
Motor Vehicles	159,905	279,905	336,905	269,524
Livestock	108,780	114,219	119,930	125,927
Total Non -current assets	2,129,637	2,022,085	2,090,480	2,028,623
Current Assets				
Cash	2,837,482	886,689	924,111	1,102,138
Fixed Deposits	487,801	512,191	537,801	564,691
Accounts Receivable				
Member Governments	4,083,359	4,199,459	3,849,459	3,699,459
Other	330,984	248,238	186,179	139,634
Pre-paid expenses	89,912	67,434	50,576	37,932
Total Current Assets	7,829,538	5,914,011	5,548,126	5,543,854
Total Assets	**9,959,175**	**7,936,096**	**7,638,606**	**7,572,477**
Non Current Liabilities				
Net long-term liabilities	454,020	302,680	151,340	0
Total Non Current Liabilities	454,020	302,680	151,340	0
Current Liabilities				
Bank Overdraft	954,473	652,174	652,174	652,174
Accounts Payable & Accrued Liabilities	2,795,903	2,096,927	1,572,695	1,179,521
Due to Employees	913,466	456,733	0	0
Current portion of long-term liabilities	386,955	151,340	151,340	151,340
Deferred Revenue	1,996,230	1,197,738	958,190	766,552
Total Current Liabilities	7,047,027	4,554,912	3,334,399	2,749,587
Total Liabilities	7,501,047	4,857,592	3,485,739	2,749,587
Accumulated Fund	2,458,128	3,078,504	4,152,867	4,822,890
Total Liabilities and Funds	**9,959,175**	**7,936,096**	**7,638,606**	**7,572,477**

CARDI

CALCULATION OF PORTION OF ARREARS TO MEET BUDGET DEFICIT OVER PERIOD OF MTP 2011 TO 2013
(EC$)
STATUS as at 31/12/10

Budget Deficit 1940,000

	COUNTRY	ARREARS AMOUNT	PORTION TO MEET BUDGET DEFICIT
		$000's	$
1	ANTIGUA & BARBUDA	2,720.6	726,352
2	BARBADOS	0.0	0
3	BELIZE	0.0	0
4	DOMINICA	836.5	223,331
5	GRENADA	223.6	59,697
6	JAMAICA	2,407.0	642,626
7	MONTSERRAT	0.0	0
8	ST KITTS/NEVIS	0.0	0
9	ST LUCIA	0.0	0
10	ST VINCENT & THE GRENADINES.	1,078.7	287,994
11	TRINIDAD & TOBAGO	0.0	0
	TOTAL	**7,266.4**	**1940,000**