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Medium Term Plan

2008-2010

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LIST OF ACRONYMS

ASTI	Agricultural, Science and Technology Innovation
CABA	Caribbean Agribusiness Association
CACHE	Caribbean Council for Higher Education in Agriculture
CaFAN	Caribbean Farmers Network
CARDI	Caribbean Agricultural Research and Development Institute
CARIRI	Caribbean Research Industrial Institute
CGIAR	Consultative Group on International Agricultural Research
CISWG	Caribbean Invasive Species Working Group
CR	Country Representative
CSME	Caribbean Single Market Economy
CTA	Technical Centre for Agriculture and Rural Development
FAO	Food and Agriculture Organisation of the United Nations
FORAGRO	Regional Farmers for Research in Agriculture
IAST	Institute of Applied Science and Technology
IICA	Inter-American Institute for Co-operation on Agriculture
The Initiative	The Jagdeo Initiative
MTP	Medium Term Plan
NARI	National Agricultural Research Institute
NCCARD	National Co-ordinating Committee for Agricultural Research and Development
NRM	Natural Resource Management
RTP	Regional Transformation Programme
STI	Science, Technology and Innovation
TIS	Technology and Innovation Systems
UNDP	United Nation Development Programme

EXECUTIVE SUMMARY

Over the last 5-10 years, many events have singularly and collectively contributed to a renewed sense of urgency and importance to the agricultural sector. Some of the more demanding factors include material disasters as occasioned by climate change, increased demand for food, especially by the rapidly developing Asian countries, increasing use of agricultural products for food and non-food items, such as, fuel and fibre.

Indeed, initiatives at the global, hemispheric and regional level unequivocally link performance of the agricultural sector to food security, poverty alleviation, economic and rural development.

In the Caribbean, the highest political Forum, the Conference of Heads of Government now recognises Agriculture as a major economic driver in its Development Agenda particularly with respect to ameliorating food prices/cost of living, poverty and hunger. However, this requires a “New” Agriculture that:

- Spans the entire value (food and non-food) chains
- Develops direct and indirect linkages with the other productive sectors and, is market oriented
- Requires significant quantum of human capital that is technologically trained
- Is significantly influenced by appropriate technological processes and measures

As expressed in the Jagdeo Initiative (The Initiative), for the “New” Agriculture to be developed, a properly functional and integrated regional Technology and Innovation Systems (TIS) is needed.

It is in this context, the Caribbean Agricultural Research and Development Institute (CARDI), as the only regional agricultural institution identified in the Revised Treaty of Chaguaramas (Chapter 12), has a key role to play in the implementation and co-ordination of the TIS.

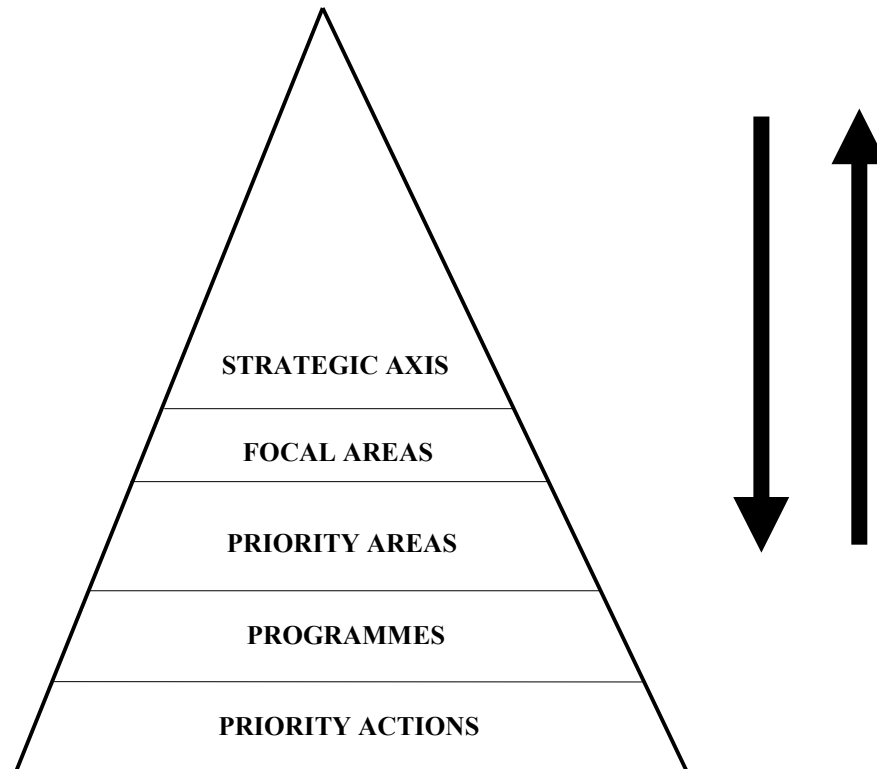
The approach adopted by CARDI (utilised elsewhere by institutions including IICA, and more recently FAO) for the fulfilment of its vision and mission is based on three pillars; *bottom up/client led, working together, transparency and accountability.*

ELEMENTS OF THE STRATEGIC FRAMEWORK

In fulfilment of its role, and in the context of the demand for a ‘New Agriculture’, CARDI developed its 2008-009 Medium Term Plan (MTP) on the basis of three Strategic Axes:

- Strategic Axis 1: The Development of Sustainable Industries
- Strategic Axis 2: The Development of Strategic Linkages
- Strategic Axis 2: Institutional Strengthening

Each Strategic Axis defines a hierarchical framework of Focal Areas, Priority Areas, Programmes and Priority Actions as shown below.



The bottom-up/client led approach adopted by the Institute within the strategic planning process dictated that Priority Actions (defined within respective programmes) were developed through consultations at the national level.

Strategic Axis 1: Development of Sustainable Industries

The entire CARDI portfolio is driven by Strategic Axis 1, which expresses the core functional elements of CARDI's mandate and is directly linked to food production. Strategic Axis 1 comprises two Focal Areas, 'Science, Technology and Innovation' and 'Natural Resource Management'.

Focal Area 1: Science, Technology and Innovation (ST&I)

The ST&I Focal Area involves the application of science, technology and innovation to food production and productivity with the sole Priority Area being 'Technology Generation, and Transfer'. This is a reflection of its direct linkage to food production and productivity.

Within this Focal Area, Strategic Axis 1 has given considerable weight/prominence to crop and livestock commodity development programmes and the Priority Actions which directly influence productivity and increased production. Four core commodity groups have been identified within the commodity programmes:

- Root crops (mainly cassava and sweet potato)
- Small ruminants
- Hot pepper
- Cereal and grain legumes

Focal Area 2: Natural Resource Management (NRM)

The NRM Focal Area addresses environmental limitations, constraints and opportunities that influence the attainment of sustained and efficient production and productivity. The Priority Areas identified in this focal area are:

- Invasive species
- Climate change
- Biotechnology

The Programmes include support to invasive species initiatives Coordinated of Climate Change and Disaster Management, and Biotechnology development.

Strategic Axis 2: Development of Strategic Linkages

Strategic Axis 2 addresses relationships of the Institute involving the stakeholders, as well as current and potential collaborators, partners and donors. This initiative is facilitated by a promotional/information process designed to demonstrate the Institute's achievements, capabilities and the environment within which it functions.

Strategic Axis 2 comprises two Focal Areas: *'Partnerships and Collaborative Initiatives'* and *'Advocacy'*.

Focal Area 1: Partnerships and Collaborative Initiatives

This Focal Area has two Priority Areas: *'Build and Maintain Relationships'* and *'Establish the Friends of CARDI'*.

Focal Area 2: Advocacy

The *'Advocacy'* Focal Area seeks to promote/establish CARDI as a credible, lead regional R & D institution. There are two Priority Areas: *'Re-branding and Promotion of CARDI'* and *'Website Development'*.

Strategic Axis 3: Institutional Strengthening

This Axis addresses the building of a strong, organised and capable Institute that, with time, will have recognised regional Centres of Excellence in R&D. There are two Focal Areas: *'Income Generation'*, and *'Capacity Building'*.

Focal Area 1: Income Generation

The goal of the *'Income Generation'* Focal Area is to attain suitable financial, human and other resources for the implementation of the Institute's MTP. There are two Priority Areas: *'Resource Mobilisation'* and *'Revenue Generation'* and *'Technical Assistance'*.

Focal Area 2: Capacity Building

The ‘*Capacity Building*’ comprises activities aimed at developing an institution with capable human resources, financial strength and earning capacity

Priority Areas within this Focal Area are:

- Human Resource Development
- Staff Motivation
- Cultural Change
- Organisation Development

Implementing the MTP

The Institute has employed external and internal strategies to implement its MTP. Each of these strategies is defined by the portfolio of activities located within Strategic Axes 2 and 3 respectively.

The external strategy seeks to establish an efficient collaborative network of stakeholders, collaborators and strategic partnerships within the public and private sectors in order to share information, physical and financial resources and specifically:

- requires the use of collaborative mechanisms (e.g., networking, ASTI)
- involves the institute’s stakeholders and strategic partners along the research/commodity chain
- is implemented at the regional, hemispheric and global levels

The internal strategy addresses organisation in addition to resource (e.g. financial, human) capacity, management and efficiency. The goal of the internal implementation strategy is the creation and promotion of an efficient and effective CARDI. In this regard, three management centres are identified:

- Office of the Executive Director with functions including:
 - Resource mobilisation and evaluation
 - Strategic alliances
 - Public relations

- Technical services
 - Country Units
 - Biometrics
 - Marketing
 - Information & Communication

- Corporate Services
 - Administrative services and human resource development
 - Finance management

A balanced budget of EC\$26.8Mn is the estimated provision for implementing the MTP over the three year period. In this regard, the budget will be financed through:

- Subventions from member governments
- Donor funds
- Proceeds from the sale of products and services
- Accrued interest

1. ANTECEDENTS

Three distinct phenomena have had a major influence on global food production over the last 5-10 years. Firstly, climatic changes and resulting increased incidence of natural disasters. Secondly, the expanding utilisation of agricultural products for fuel and fibre (in addition to food). Thirdly, the growing demand for own produced food products by most populous and increasingly affluent developing countries in Asia. Many of these countries now consume more and export less of the basic foods that they produce.

For example, aggregate exports/traded world output as a percentage of total global cereal and grain legumes production declined from 12.24 per cent in 2002 to 10.85 percent in 2005. Over the same period, traded rice (the most basic of the staples) declined from 0.6 per cent to 0.46 per cent of production. Projections are that this trend will continue for some time. The global ability to respond to the relative decline in food production, must be particularly interpreted within the context of land and technology resources. Indeed, with the available land for food production likely to decline (owing to climate changes and alternative uses), the need to increase productivity through the application of science and technology is mandatory.

This document represents CARDI's efforts over the period, 2008-2010, to assist its Member States to address the above issues. Accordingly, the document is structured to initially (Chapter 1) address the initiatives which give purpose and prominence to the CARDI mandate. Chapter 2 deals with CARDI, its mandate and its strategic approach to developing its Medium Term Plan (MTP). The elements of the strategic plan are presented and discussed in Chapter 3. Chapter 4 deals with the organisation and strategies (external & internal) for implementing the MTP. Issues regarding the financing of the MTP are discussed in Chapter 5.

1.1 Major Trends in Global Economic Development

The demand for energy has increasingly emerged as the prime catalyst of change in the global economic climate. In this regard, the price of oil (the world's major source of energy) increased from US\$27.60/barrel in 2000 to US\$120.00/barrel (and counting) in 2008. Moreover, concerns about the environment have accelerated the search for alternative sources of energy, primarily derived from agricultural commodities, particularly sugar, maize and sorghum. This, along with poor harvests in major producing countries, such as, Australia and New Zealand, has caused a reduction in food in the world. As such, net food importers, such as CARDI's member countries, cannot depend on imports for their food supply. Therefore, concerns of minimal levels of food security to minimise hunger have arisen.

The notion of food security suggests capable performance within the agricultural sector, suitable food nutrition, poverty alleviation, improved well being and overall development. In this regard within the last decade, the importance of agriculture to sustainable economic, social as well as environmental development and good governance has become increasingly apparent.

This need for food security has been implicitly recognised within the United Nation's Millennium Development Goals (MDGs), the most comprehensive set of developmental ideas 'which form a blue print agreed to by all the world's countries and all the world's leading development institutions' for the alleviation of poverty and improvement in the human well being. The achievement of at least six of the eight MDGs is highly dependent on sustainable, modern and organised agricultural and rural sectors. Additionally, the FAO Programme for Food Security and Hunger formally recognised the importance of agriculture in reducing both hunger and poverty. Meanwhile, the World Development Report, 2008, called for 'greater investment in agriculture in developing countries' and for 'the sector to be placed at the centre of the development agenda if the goals of halving extreme poverty and hunger by 2015 were to be realised'.

At the Hemispheric level, the Heads of State and Governments of the Americas - at their Summit in Quebec City in 2001, identified agriculture as being critical to sustained development with particular reference to social development, rural prosperity and governance. The Heads restated this position at their meetings in Monterrey (2004) and Mar del Plata, Argentina (2006). The latter meeting linked rural and agricultural development to investment, wealth creation and rural prosperity.

In 2003, the Hemispheric Ministers of Agriculture agreed on the Agro Plan, 2003-2015, as the mechanism for implementing the decisions of the Heads. In that context, the Inter American Institute for Cooperation on Agriculture (IICA) highlighted the importance of agriculture to the Development Agenda in the publication; "Agriculture is more than Food on the Table" which showed significant increases in the sector's contribution to GDP when the backward and forward linkages were taken into consideration.

1.2 The Development Agenda in the Caribbean and the Role of Agriculture

The Regional Transformation Programme (*RTP*), for Agriculture was formulated in 1996. Unfortunately the RTP has made minimal progress. This document identified several factors that were challenges and threats to Regional Agriculture. These were as follows:

- Reduced preferential access for the main agricultural commodities
- Penetration of Domestic Markets by imports

- Lack of confidence by farmers in the marketing system
- Inadequate agricultural infrastructure
- Land availability and land tenure
- Increasing degradation of Rural Natural Resources
- Limited human resource development
- Weakness of Institutions dealing with agriculture
- Food and Nutrition Security.

A very tangible expression of this lack of progress is the rising consumer imports over the period (Table 1). Furthermore, the Region currently has a food import bill approaching US\$2Billion. Several factors have contributed to this trend and must be considered in order for the problem to be suitably addressed.

Table 1: Regional Imports for 2004 - 2006

Value of CARICOM's Total Imports by SITC Sections:			
2004 – 2006			
	US\$ '000		
S.I.T.C. Sections	2004	2005	2006
All sections	13,744,177	16,690,045	17,418,526
Food and live animals chiefly for food	1,563,134	1,824,052	1,768,981
Beverages and tobacco	202,396	262,678	255,118
Crude materials, inedible, except fuels	288,663	476,760	496,011
Mineral fuels, lubricants and related materials	2,960,350	4,562,733	4,594,674
Animal and vegetable oils, fats and waxes	80,078	78,254	80,770
Chemicals and related products, not elsewhere specified	1,186,172	1,513,788	1,602,861
Manufactured goods classified chiefly by material	2,152,840	2,274,808	2,379,717
Machinery and transport equipment	3,994,505	3,924,779	4,344,270
Miscellaneous manufactured articles	1,231,730	1,677,871	1,613,669
Commodities and transactions not classified elsewhere	84,310	94,323	282,453

Note: 2006 Excludes data from Antigua and Barbuda and Grenada

Source: The Caribbean Community Secretariat

However, the CARICOM Revised Treaty of Chaguaramas recognises agriculture as an important pillar for sustainable development. Chapter 4, Part 2 amplifies this by stating that a “fundamental transformation of the agricultural sector towards market-oriented, internationally competitive and

environmentally sound production of agricultural products” is critical. This philosophy is restated in the document “Towards a Single Economy and a Single Development Vision, 2006” which identifies agriculture along with energy, sustainable tourism, export services and innovation, as a major economic driver in the Region’s development agenda. To give tangible expression to the above, the Jagdeo Initiative was conceptualised in 2000, as an instrument to ‘kick start’ the RTP and facilitate the implementation of the Community Agricultural Policy (CAP). The Jagdeo Initiative identified ten key binding constraints to the development of regional agriculture as follows:

- Limited financing and inadequate new investment
- Outdated and inefficient agriculture health and food safety systems
- Inadequate research and development
- Fragmented and disorganized private sector
- Inefficient land and water distribution and management systems
- Deficient and uncoordinated risk management measures including praedial larceny
- Inadequate transportation system particularly for perishables
- Weak and non-integrated information and intelligence systems
- Weak marketing systems, linkages and participation in growth markets
- Lack of skilled human resources

This Initiative has attained more importance and indeed urgency with:

- The inauguration of the Single Market in January 2006
- The very rapid and substantial increases in food prices; because of external stimuli related *inter alia* to energy and increased wealth in highly populated Asian countries
- The details of the Trade Agreements, especially the recently concluded Economic Partnership Agreement
- The increased incidence and severity of natural disasters which is placing additional pressures on availability of food and, thus, increasing the possibilities of pockets of hunger
- The need to attain acceptable levels of food (particularly protein) security and minimise increases in hunger and poverty

The research confirmed that food items represented a significant share of household expenditure ranging from 21.4% in Antigua& Barbuda to 53.6% in St. Vincent and the Grenadines. Consequently, rising food prices has contributed significantly to the increased cost of living. Data from Central Bank of Trinidad

and Tobago have consistently borne this out. The dominant basic food items (along with their added value forms) are meat, fish, milk, cereals (rice, corn, wheat), root crops and vegetables.

1.3 Caribbean Agriculture and the Technology & Innovation Systems

One of the Initiative's Key Binding Constraints, Inadequate Research and Development, recognises that, for agriculture to achieve this new dimension, technology and innovation, including the use of information, is critical, indeed mandatory.

The Conference of Heads of Government of CARICOM now recognises that Agriculture is a major economic driver in its Development Agenda, particularly with respect to ameliorating food prices/cost of living, poverty and hunger. However, this requires a "New" Agriculture that:

- Spans the entire value (food and *non*-food) chains
- Develops direct and indirect linkages with the other productive sectors and, is market oriented
- Requires significant quantum of human capital that is technologically trained
- Is significantly influenced by appropriate technological processes and measures

For the "New" Agriculture to be developed, a properly functional and integrated regional Technology and Innovation Systems (TIS) is needed. Therefore, as the only regional agricultural institution identified in the Revised Treaty of Chaguaramas (Chapter 2, Article 21) the Caribbean Agricultural Research and Development Institute (CARDI), has a key role in the implementation and coordination of the region's agricultural research and development initiative.

2. THE CARDI MANDATE

Over the years, the Caribbean agricultural agenda has continued to be guided/driven by the sequence of initiatives/reports following the declaration of the Treaty of Chaguaramas, July, 1973. These include the RTP, and ‘The Initiative’, which was conceptualised to hasten its implementation. Some highlights of the regional agricultural strategy are captured by Norman Girvan’s ‘priorities for regional action’ that are summarised as follows:

- The upgrading of facilities for intra-regional agricultural trade and transport
- The strengthening of regional collaboration in agricultural Research & Development as well as increased funding for regional bodies
- Evaluation of investment opportunities
- Market intelligence-Sharing of information with respect to the demand and supply of agricultural commodities

The implementation of these actions places emphasis on the generation of appropriate technology products and services in areas of:

- Post harvest (including cleaning, storage, sorting, packaging)
- Improved/state of the art analytical and (germplasm) storage equipment, capacity building etc.
- Information management and distribution

The above actions, when interpreted along with The Initiative’s Key Binding Constraints and the need to increase productivity and production, give urgency and definition to a major role of CARDI in support of the attainment of regional food security and the overall development of Caribbean people. As discussed, mechanisms originating from the spirit of the Revised Treaty of Chaguaramas, that fosters the development of the CSME, must spearhead/facilitate this process.

The CARDI Vision

The vision of CARDI must understandably be influenced by the environment within which it operates and the mandate placed upon the institute to promote the economic wellbeing of the people who reside in that environment.

In this regard, CARDI’s vision is summarised as follows:

To be the centre of excellence in the Caribbean for the provision and application of research and development in agriculture and rural enhancement.

The CARDI Mission

The CARDI Mission is to contribute to the sustainable economic well being of Caribbean people by the generation and transfer of appropriate technology through research and development within the agricultural value chain.

2.1 CARDI and the Technology & Innovation System (TIS)

The application of science and technology within the production transformation process must be innovative and appropriate to be effective. This process must be initiated with an appreciation and understanding of the characteristics and demands of the environment within which it must be applied. The technology generation and transfer process which comprises four distinct but sequential steps are described as follows:

- *Technology generation or adaptation.* This is a basic stage at which a technology (system, variety, breed etc.) is identified or selected for application within the environment. This is normally an ‘on-station’ activity
- *Testing.* Replicas of the technology are tested on station for desired characteristics and recording of performance observations
- *Validation.* This exercise represents the first attempt to take the technology to the wider environment where it is exposed to alternative ecozones, production scales and overall practical applications. This is an ‘on-farm’ activity. This exercise may be followed by the need to return to the field station or promote/expand the application of the technology. Follow up activities may include the preparation of tech-packs, conducting demonstration exercises, etc
- *Adoption:* This stage defines the end of the (‘phase’ 1 process) process. It essentially involves the utilisation of the technology by end users (e.g. farmers). This process as perhaps validation is facilitated through collaborative initiatives (e.g. with the extension service system)
- This process is cyclical in nature as feed-back from extension workers and farmers is continuously needed to restart the ‘technology generation or adaptation’ exercise

In summary, the TIS infers that an efficient evaluation of the source and supply of technology must be implemented and adapted to the peculiarities of the environment. A major responsibility for carrying out of an effective TIS within the region is CARDI’s responsibility as the sole regional R & D institution

amongst CARICOM member countries. This accords with the objectives set out in Article 3 of the Agreement Establishing CARDI as follows:

- (a) to provide for the research and development needs of the agriculture of the Region as identified in national plans and policies;
- (b) to provide an appropriate research and development service to the agricultural sector of Member States;
- (c) to provide and extend the application of new technologies in production, processing, storage and distribution of agricultural products of Member States;
- (d) to provide for the co-ordination and integration of the research and development efforts of Member States where this is possible and desirable.

2.2 The Strategic Approach and Planning Process

The tried and tested strategic approach adopted by CARDI (utilised elsewhere by institutions including IICA, and more recently FAO) for the fulfilment of its vision and mission is based on three pillars; *bottom up/client led, working together, transparency and accountability*. They aptly define the Institute's approach to the selection, processing and delivery of its technology products and services.

2.2.1 Bottom up/client led

The bottom up/client driven 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 allows for 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.

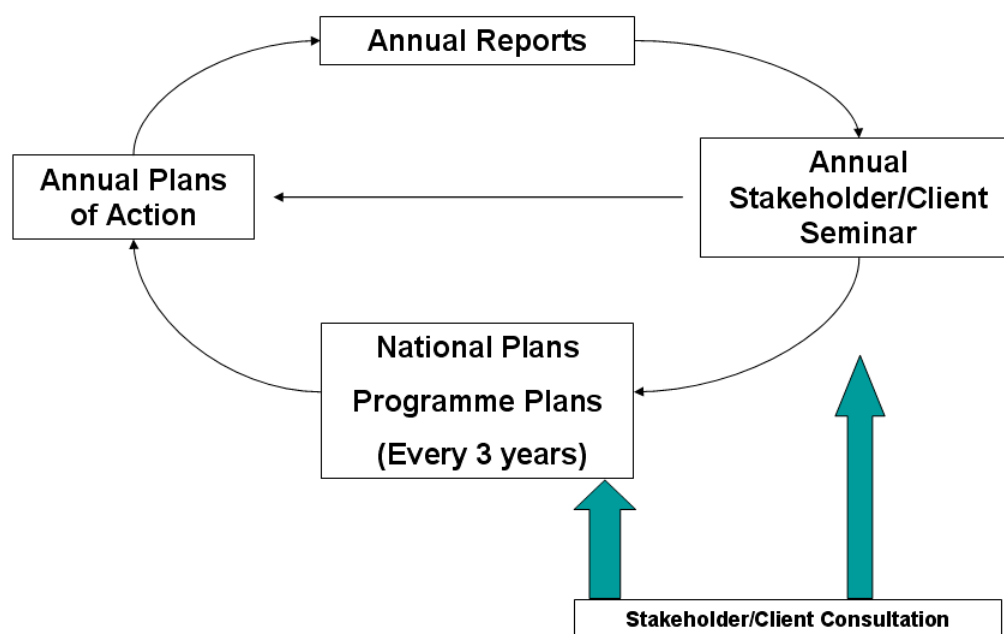


Figure 1: Bottom Up/Client Led Process

The consultation process includes key players drawn from the private and public sectors. An important benefit of the consultation process conducted by the Institute has been the plenary sessions that allowed for suggestions/needs/ideas from the major players within agriculture and its related sectors. Therefore, this consultation process, once properly conducted, is a well designed technology generation plan which would deliver the products demanded by the Institute's clients. The Institute employed/utilised this process at two stages of its medium term planning process. Initially, to develop the 'first cut' medium

term portfolio and consequently, to obtain reactions prior to the finalisation of its portfolio at national and regional levels.

2.2.2 Accountability & Transparency

It is essential that CARDI's actions be transparent and accountable to its Member Countries that, to date, provide the majority of its finances; all its clients (whose demands CARDI must internalise and effectively satisfy); its Strategic Partners and Donors (on which CARDI requests technical and complementary financial resources).

To facilitate the achievement of this transparency and accountability, the Institute will prepare Annual Reports and hold National Annual Seminars to report on its performance (See Figure 1). The Annual Reports will be for each country and the Institute as a whole. The latter will include audited accounts.

Within the above context and in the interest of its own professional sustainability, the operations of the institute must be carried out with clarity and credibility. This is exemplified in Figure 2, which links the Programmes/MTP 2008-2010 (prepared by Consultations, Section 2.1.1) to the development of Annual Plans and Budgets, the listing of Priority Sections (by Units and Individuals), the development of Individual Work Programmes and subsequently, their Annual Performance Evaluations.

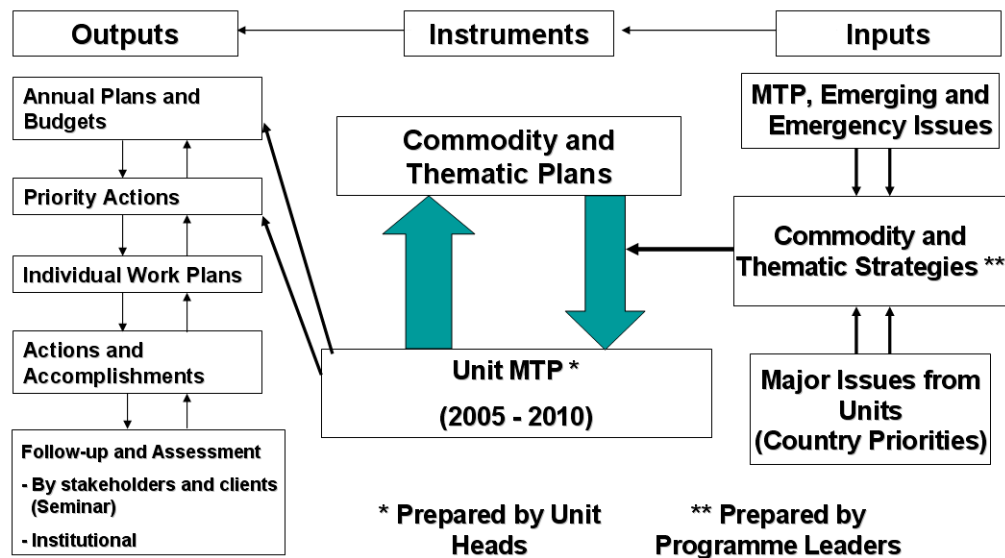


Figure 2: Accountability and Transparency

2.2.3 Working Together

The notion of ‘working together’ is an enhancement of the consultation process. It recognises that the institution has a much better chance of achieving its goals if it collaborates with key Strategic Partners and stakeholders and share 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.

2.2.4 Portfolio Development and Expected Regional Impact

The foregoing sections (2.2.1-2.2.3) address the foundation elements which guide the planning process. In developing the portfolio therefore, consideration has been given to:

- Resource limitations
- The locus of core activities in light of the expected dissemination of results and benefits that must accrue regionally

The recognition of both elements dictates that, for optimal effect, the positioning of each R&D action must indeed be bottom up/ client led. This is facilitated by the consultation process which identifies the principal commodities and themes within radar of the national agricultural development plans. CARDI has further addressed the implementation of key activities selected from the consultation process through its system of Commodity Leaders (Figure 8). Within this context, the Commodity Leaders reconfirm the identified Priority Actions (Chapter 3) by:

- Checking for overlaps and critical contribution to the overall CARDI portfolio
- Ensuring congruence and the sharing of information/results with comparable national programmes

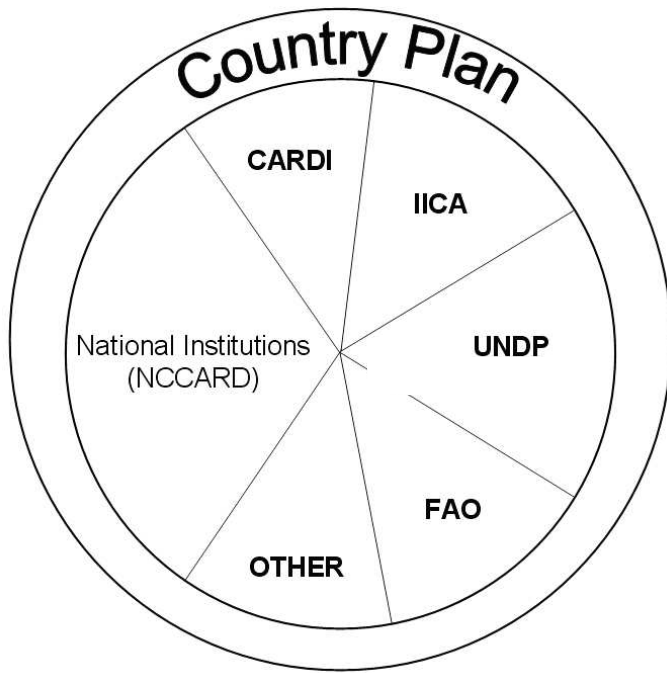


Figure 3: Working Together (National Level)

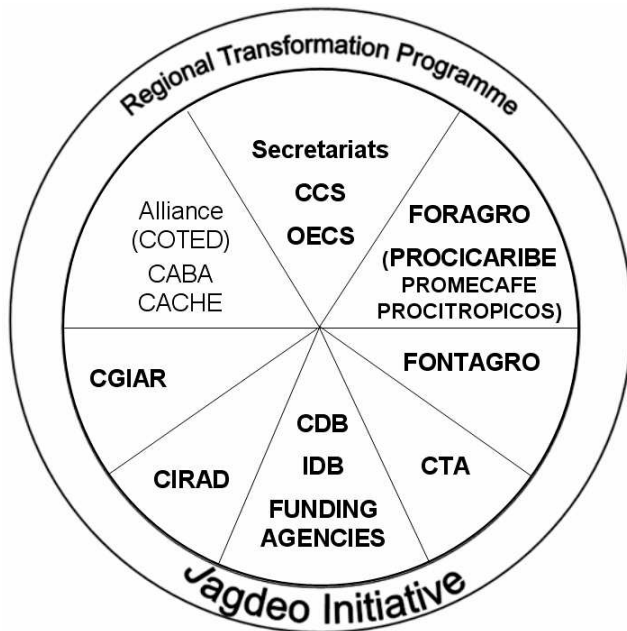


Figure 4: Working Together (Regional Level)

3. ELEMENTS OF THE CARDI STRATEGIC FRAMEWORK

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**). Implementation of Priority Actions within these Strategic Axes will lead 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.

3.1 Defining the Elements of the Strategic Framework

Each Strategic Axis defines a hierarchical framework of Focal Areas, Priority Areas, Programmes and Priority Actions as illustrated in Figure 5.

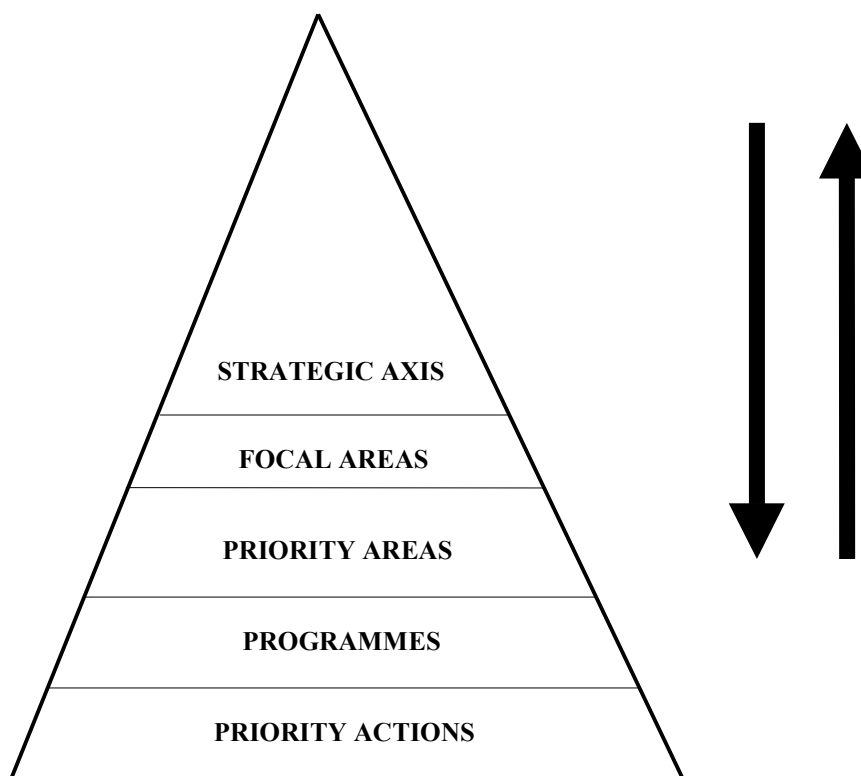


Figure 5: Hierarchy of CARDI Strategic Framework

The ‘*Strategic Axes*’ are the first tier of the hierarchical framework of the MTP and, accordingly, is the foundation upon which the portfolio is constructed. They are deliberately selected based on CARDI’s interpretation of the antecedents relative to the repositioning of agriculture. They drive the Institute’s initiatives in the conduct of its mandate. As a consequence, each Strategic Axis is described by goals, objectives, activities and expected outputs at the institutional level (See Annex 1). Within the context of the hierarchical framework, each Strategic Axis has two Focal Areas and (with the exception of Strategic Axis 1 with one Focal Area) each Focal Area has at least two Priority Areas. Additionally, each Priority Area has at least 2 Programmes, while the programmes comprise related Priority Actions (See Annex 2).

3.2 Defining the Strategic Axes

As indicated above, there are three distinctly separate but interdependent Strategic Axes. Given CARDI’s resource requirements and limitations, the implementation of the Priority Actions assumes the input of its stakeholders and collaborators in the generation and transfer of technology.

There are two principal considerations for dealing with the issue of technology transfer. One, the Institute promotes/gets involved in an expansive training programme for its staff and selected agents and representatives of farmers’ groups. The other is the Institute’s acceleration of technology transfer (as opposed to research) activities on selected farms in its core commodity areas. Each of these considerations are defined and pursued within the elements of Strategic Axis 2. The actualisation of these considerations will assist the Region in hastening the achievement of an acceptable level of food security.

A suitable level of resources (quantum and quality) is essential if the Institute is to successfully fulfil its mandate. Accordingly, Strategic Axis 3 comprises programmes which address the strengthening of the Institute’s capacity to deliver the expected results inferred within Strategic Axis 1.

3.2.1 Strategic Axis 1: Development of Sustainable Industries

All of CARDI’s activities are driven by Strategic Axis 1, which expresses the core functional elements of the Institute’s mandate and is directly linked to food production and use. Strategic Axis 1 comprises two Focal Areas, viz, ‘*Science, Technology and Innovation*’ and ‘*Natural Resource Management*’.

3.2.1.1 Focal Area: Science, Technology & Innovation (ST & I)

This first Focal Area involves the application of science, technology and innovation to food production and productivity with the sole Priority Area being ‘*Technology Generation, and Transfer*’. The following six Programmes are located in this Priority Area.

- Commodity Development (Crops)
- Commodity Development (Livestock)
- Emerging Issues
- Soil Water Management
- Development of Germplasm Banks
- Systems and Services (Information, biometrics, marketing)

Each Programme comprises a number of Priority Actions (as for all Strategic Axes) which are carried out to satisfy the goals and objectives of this Focal Area and the achievement of the expected results.

Emphasis has been given to crop and livestock commodity development programmes and the Priority Actions which directly influence productivity and increased production. Four core commodity groups were identified during the consultation process for regional action. These are:

- Cereals and grain legumes
- Root crops (mainly cassava and sweet potato)
- Small ruminants
- Hot pepper

However, there are some commodities that are important to a few Member Countries. These are within the groups, fruits and dairy.

Within the commodities chosen Priority Actions of direct production related significance were identified:

Crops

- Develop and/or improve varieties (hot pepper)
- Produce breeder, nucleus and commercial seeds of the evaluated varieties and landraces
- Develop and transfer production technology packages
- Characterise and evaluate varieties for production and value added products
- Multiply and distribute disease-free planting material

Livestock

- Develop and distribute improved breeds of small ruminants
- Develop and transfer feed and feeding systems technologies especially forage-based systems

Emerging Issues

- Validate and transfer production technologies and technical packages for “undercover systems”
- Investigate and transfer commercial seedling and vegetable production techniques under shade house.
- Determine and implement requirements for protecting CARDI’s Intellectual Property

Systems and Services

- Determine market trends and identify characteristics of the varieties required for fresh and value added products

Additionally, the cross cutting themes, soil and water management, development of germplasm banks and systems and services are included amongst the programmes within this Priority Area.

3.2.1.2 Focal Area: Natural Resource Management

This second Focal Area speaks to environmental limitations, constraints and opportunities that influence the attainment of efficient production and productivity within the agricultural sector. There are three Priority Areas identified within this focal area:

- Invasive Species
- Climate Change
- Biotechnology

The Programmes described within the above Priority Areas are as follows:

- Support to invasive species, such as, the Caribbean Invasive Species Working Group.
- Co-ordinated programmes with climate change and disaster management
- Development of biotechnology programmes with other institutions

The above programmes address organisational/networking input in the Institute's natural resources portfolio in order to facilitate the execution of the associated technical programmes. The activities associated with these programmes (3.2.1.1) are included within the Technology Generation and Transfer Priority Area as cross cutting and thematic activities.

Accordingly, key Priority Actions identified within the above Focal Area are:

Invasive Species

- Lead actions within the Caribbean Invasive Species Working Group (CISWG) to implement the Caribbean Invasive Strategy
- Support MOAs' initiatives to manage invasive species, such as Red Palm Mite

Climate Change

- Determine (within climate dynamic zones) in identified land resources that could be competitive
- Evaluate potential selected commodities (within climate dynamic zones) as to their commercial suitability

Biotechnology

- Production of clean, disease-free planting material
- Genome map selected indigenous varieties and species, such as, Barbados Black Belly Sheep

3.2.2 Strategic Axis 2: Development of Strategic Linkages

Strategic Axis 2 addresses (i) relationships of the Institute with its stakeholders, as well as current and potential collaborators, partners and donors, and (ii) the implementation of a promotional/information process designed to demonstrate the Institute's achievements, capabilities and the environment within which it functions. There are two **Focal Areas**: '*Partnerships and Collaborative Linkages*' and '*Advocacy*'.

3.2.2.1: 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 Research and Development, disorganisation of the private sector and limited resources. Key Binding Constraints within The Initiative (Chapter 1) drive the selection of activities

within this Focal Area. There are two Priority Areas, viz Build and Maintain Relationships and Establish 'Friends of CARDI'. Their Programmes and Priority Actions facilitate the sharing of physical, financial, technical and information resources. The Programmes and Priority Actions within each Priority Area follow:

Priority Area 1: Build and maintain relationships

The Programmes are presented below along with the Key Priority Actions

Support to the development of regional R&D strategies

- Collaborate in the development and acceptance of Regional R&D strategy
- Develop initiatives with regional agencies for evaluation of selected cultivars (e.g. Switch Grass, Castor Oil, Jatropha) with acceptable/economic biofuel yields

Develop/operationalise MOUs with key institutions and partners

- Develop/strengthen relationships with technical, academic, development and finance entities
- Develop/strengthen relationships with regional integration agencies e.g., CARICOM/CARIFORUM, OECS, UNECLAC

Consolidate and expand CARDI membership base

- Explore membership of CARDI with other CARICOM countries (Bahamas, Haiti and Suriname), and Associate Members, e.g., Cayman Islands

Priority Area 2: Establishing the 'Friends of CARDI' has one Programme

Develop guidelines for operations/areas of interest

- Lobbying potential individuals and entities to become members
- Preparation of instruments for describing and formalising relationships & agreements
- Establish and make operational at least two Chapters

3.2.2.2 Focal Area 2: Advocacy

This Focal Area seeks to promote the conversion of CARDI into a credible and the preferred R & D Institute in the Region. Advocacy is of key importance for CARDI to attract the positive attention of major decisions makers. CARDI must critically promote its past and present achievements/contributions, its role within the development of the 'new agriculture' and demonstrate unequivocally its overall

capacity to the widest possible national, regional and hemispheric audience. Of key importance are CARDI's member Governments. There are two Priority Areas in this Focal Areas, Re-branding and Promotion of CARDI and Website Development. The Programmes and Key Priority Actions follow:

Priority Area 1: Re-branding and Promotion of CARDI has four Programmes

- Development of strategies (media, communications, public relations)
- Promotion of R&D for the 'New agriculture'
- Publications
- Participation in exhibitions

The Key Priority Actions are:

- Design and Organise CARDI Lecture Series
- Policy formulation and co-ordination of CARDI publications and seminars
- Seminars, workshops, exhibitions, publications
- Promote and strengthen National Research Co-ordination committees
- Development of a CARDI flag

Priority Area 2: Website development has one Programme

- Development and management of website

The Key Priority Action is:

- Contribute material for the Units' web pages

3.2.3 Strategic Axis 3: Institutional Strengthening

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 a critical minimum of financial, technical, physical and human resources. In this context, Axis 3 aims to always ensure this critical mass and thus targets '*Income Generation*' and '*Capacity Building*' as its two Focal Areas.

3.2.3.1 Focal Area 1: Income Generation

This Focal Area has two Priority Areas, viz Resource Mobilisation and Revenue Generation and Technical Assistance. These **Priority Areas** along with their respective **Programmes**.

Priority Area 1: Resource Mobilisation has three Programmes

- Identification and prioritisation of potential financial & human resource donors/collaborators
- Project development
- Monitoring and evaluation

The Key Priority Actions are

- Identification/listing of donors & collaborators
- Preparation of project documents
- Preparation of reporting formats for monitoring and evaluation

Priority Area 2: Revenue generation and technical assistance has two Programmes

- Consultancy services
- CARDI commercial production (seed/seedlings/other)

The Key Priority Actions are

- Consultancy services in several areas
- Technical support to CARDI field station projects
- Produce and market various crops and livestock commodities produced by the CARDI Field Station

3.2.3.2 Focal Area 2: Capacity Building

The organisation recognises the need to build capacity in order to strengthen the quality of its human resources, as well as those of its key clients to develop the capacity to successfully implement its Programmes, especially in Strategic Axis 1.

At the Institute level, CARDI is committed to the continued development of its staff equipping them with the required skills, knowledge and training that would enable them to perform both and effectively. The Institute also considers it necessary to identify key performance indicators for all units and staff. In addition, linkages and networking with other like Institutions at national, regional and international levels.

There are four Priority Areas

Priority Area 1: Human Resource Development has three Programmes

- Pool of experts/centres of excellence
- Leadership, development/succession planning
- Training/In-house attachments

The Key Priority Actions are

- In-house Training and development of in-house training programmes(on-the-job rotation, understudy and mentoring)
- Attachments to Universities for hands-on training
- Attendance at Courses and Programs for development/upgrade of skills

Priority Area 2: Staff Motivation has three Programmes

- Performance management
- Reward & recognition
- Celebration of Achievements

The Key Priority Actions are

- Development and implementation of performance appraisal and rewarding systems
- Implement performance management system
- Oversee the practice of CARDI core values at all levels

Priority Area 3: Culture Change has one Programme

- Definition/institutionalisation of core values

Priority Area 4: Organisation development has four Programmes

- Finance
- Administration
- Internal networking
- Knowledge management

Priority Actions within the Programmes of this Focal Area are:

- Preparation and implementation of finance and administrative management systems
- Preparation of human resource manual
- Review and upgrade of information and knowledge management systems
- Recognise staff achievements in CARDI Update
- Submit financial data fortnightly
- Manage cash resources including projected cash flows
- Update/maintain Fixed Asset Register

4. IMPLEMENTATION PLAN

The objective of this Chapter is to present the Institute's plan to achieve at the targets associated with the Expected Results from the implementation of the Priority Actions identified in Strategic Axes 1 to 3. The plan recognises that the successful implementation of the Priority Actions and consequently the MTP depend on the availability of CARDI's human, physical – including field station and financial resources along with the full commitment of its stakeholders and strategic partners.

The Institute's external and internal strategies as well as selected mechanisms employed are discussed. The Key issues addressed include:

- The pursuit of collaborative initiatives, networking and industry evaluation systems (e.g. ASTI)
- Internal performance evaluation and monitoring systems
- Organisational structure and management systems
- Human resource development
- Financing

4.1 Strategic Considerations

The implementation of the 2008-2010 MTP recognises two dimensions. Given the global signals (**Chapter 1**), the first positions the Institute on a 'war footing' by reaching for the 'low hanging fruit' to attain short term/immediate impact. The second dimension proposes investments that would ensure medium and long term sustainability and impact. For their success, both dimensions require the optimisation of available resources, guided by technical and financial integrity, knowledge of all the various elements and a meticulous sense of timing. Accordingly, the following factors are catered for in the implementation of the MTP:

- The availability/accessibility of needed critical financial resources
- The availability of a critical mass of human resource skills
- The renewed interest and sense of urgency of key stakeholders in the agricultural sector
- Aggressive advocacy to promote improved regional infrastructure, within the CSME, e.g., transportation and movement of genetic material
- Promotion of the Institute's work
- Promotion of a radically new spirit of awareness, enthusiasm, purpose and urgency amongst its internal and external clients

The external and internal strategies to facilitate the achievement of the above follow:

4.2 External Strategy

The goal of the external strategy is the establishment of an efficient collaborative network of stakeholders, collaborators and strategic partnerships within the public and private sectors. This strategy, which will enable the sharing of information, physical and financial resources, will be achieved within the framework of Strategic Axis 2.

CARDI recognizes that in the new global environment, no single institution acting alone can bring about the changes required to transform the agricultural and rural sectors to the productivity levels that guarantee acceptable levels of regional food and nutrition security. Therefore, the Institute is pursuing a deliberate strategy of building partnerships with national, regional and international organizations to create the critical mass needed for the effective delivery of the required products and services. One of the fundamentals of this process, which is also a pillar of CARDI's new approach to agricultural development, is working together.

This new philosophical framework is informed by the Agricultural Science, Technology and Innovation system (ASTI) in which CARDI's core business is conducted. The ASTI, which is promoted by the Technical Centre for Rural Cooperation on Agriculture, is defined by the complex interactions of enterprises, organisations and related sectors, as well as institutional behaviours. These determine the extent and rate at which information and knowledge are produced, transferred and utilised. It is a conceptual framework in which the stakeholders in agriculture and related sectors are embedded and which allows for the comprehensive understanding of their interactions. It is a thinking system that recognises the important role that science and technology, applied to agriculture, must play in stimulating innovation. The creation of the environment that leads to innovation is therefore a central theme in the ASTI approach to improving the agri-food sector.

The methodology produces strategic stakeholder interactions that facilitate information sharing, policy development and critically, a shared development vision. This approach demands that CARDI takes a proactive role in building strong partnership arrangements, since it is impossible for the institute to achieve its mandate otherwise. The ASTI system will be utilized at the Commodity level through the Value Chain (Commodity Development) that is presented in Figure 6.

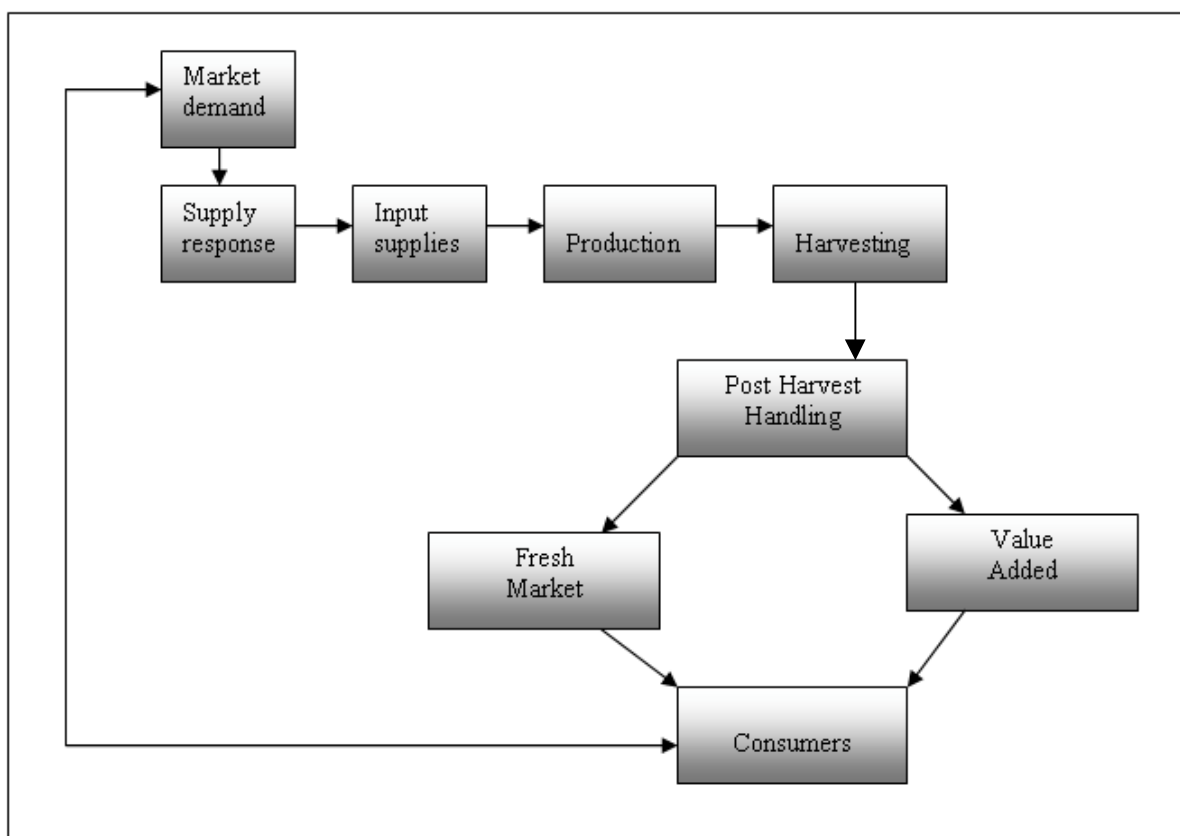


Figure 6: Commodity Development Chain

At the national level, CARDI will promote the conduct of the functions that are articulated for the National Coordinating Committee for Agricultural Research and Development (NCCARDs) within the National Alliances where they exist. CARDI recognises that some countries may have other established bodies carrying out NCCARD functions and will work within that framework.

At the institutional level, CARDI is working with UWI (The Faculty of Science and Agriculture) 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.

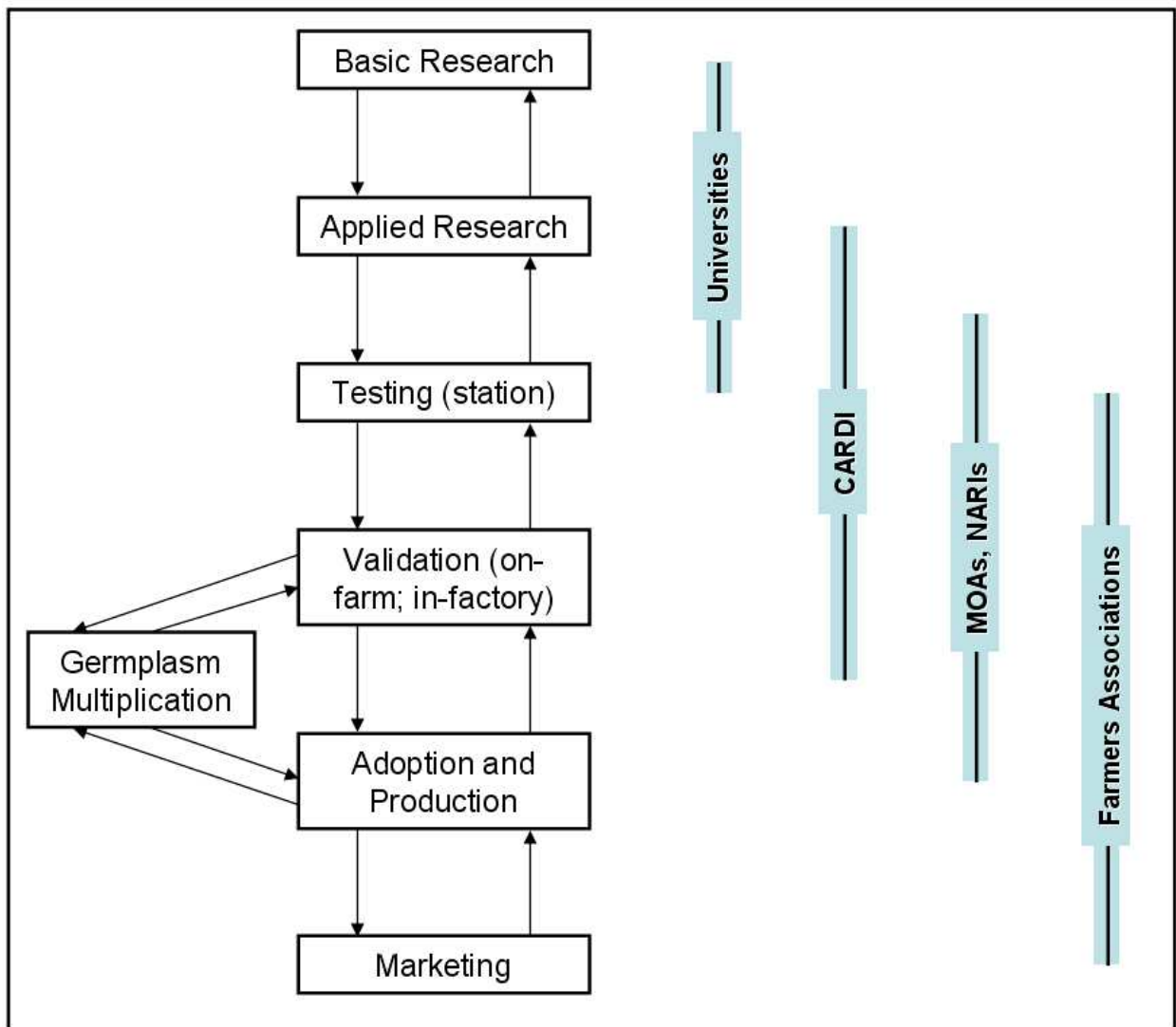


Figure 7: Research Development and Application Chain

At the regional, hemispheric and global levels, CARDI will consolidate its relationships with Agri-entrepreneurial Associations – Caribbean Agribusiness Association (CABA) and CaFAN, Research Network Systems – PROCIS, FORAGRO and CGIAR; the University system – Caribbean Council for Higher Education in Agriculture (CACHE) and Value Added Research entities, such as, SRC (Jamaica), CARIRI (Trinidad and Tobago) and IAST (Guyana).

4.2.1 Promotion

In its pursuit and development of strategic partnerships, CARDI’s clients must be constantly informed, not only of its plans and progress but of its achievements. In this regard, the Institute will take advantage of opportunities (including seminars, exhibitions, media representations et.) to demonstrate its strengths and promote its image. It will utilise fully its inherent advantage of having a physical presence in each

Member Country. This allows it to be a broker of information processes and technology which will benefit the Member Countries singly and collectively.

4.3 Internal Strategy

The goal of the internal implementation strategy is the creation and promotion of an efficient and effective CARDI. It emphasises the human resource infrastructure and will feature total inclusiveness - across all staff levels and locations, trust and team work at both the planning and implementation stages.

The all inclusive planning process that was followed and is now institutionalised, will be instrumental in the success of the implementation strategy. For example, ' *Priority Actions* ', the foundation of the hierarchical structure, were determined at Unit levels with consultations at the country level. This was assisted by in-house/plenary discussions, including the CARDI planning workshop where Priority Actions were grouped within successive upper elements of the hierarchy. This process is continuous and evolving with constant dialogue and feed-back amongst CARDI personnel, strategic partners and clients. Confirmed priority actions have been linked to the performance evaluation system at the Unit and individual levels.

Other parameters, facilitating implementation that are included in the overall planning process are the use of the Project Cycle format with expected outputs, responsibility matrix (which identifies the internal with external collaborative strategic linkage), time schedules and budget.

This team work is manifested by mandatory monthly/bimonthly meetings at the Unit level. In addition, commodity/thematic teams are developed and/or strengthened.

Follow up internal mechanisms which are part of the internal strategy are discussed.

4.3.1 Reporting

The reports will effectively emphasise findings and results obtained from scientific and non scientific activities and events. They will include:

- Periodical (monthly, quarterly, annual) reports, manuals etc.
- Mission notes/reports
- Aide memoires

The information obtained through the above process represents the core of the internal strategy as it facilitates knowledge management (**Strategic Axis 3**), continuity in planning and feedback.

4.3.2 Monitoring and Evaluation (M&E)

Essentially, the M&E mechanism, which seeks synergy between what is planned and what is actually implemented, is enhanced by the reporting process. It is a technical, managerial and financial internal audit which addresses operational systems associated with the implementation of the MTP (**Strategic Axis 3**). The M&E function is therefore a critical feed into the planning and implementation process.

4.3.3 Seminars and Workshops

This will continue to be an in-house mechanism for training and dialogue (**Section 3.5**). For example, monthly seminars organised by the CARDI Publications and Seminars Committee allow for presentations/updates of scientific and non-scientific activities conducted mainly by (but not confined to) CARDI personnel. In this regard, the seminars target work done within CARDI as well as topical regional and thematic issues (e.g. the CSME, Trade, intellectual property rights, etc.). Additionally, each Country Representative will be required to periodically describe in detail and defend CARDI's national programmes at internal workshops. At the Commodity level, there will be annual/biennial workshops, led by the Commodity leaders, to report on CARDI's activities and introduce new findings to the Wider Commodity Community.

4.4 Organisation & Management

The overall institutional planning and implementation mechanism is organised within a background of regional awareness/initiatives, viz, the 'New Agriculture', food security and food safety, poverty reduction and the growing emphasis on the environment. This is the rationalisation for a new and reorganised CARDI (Figures 8, 9, 10, 11).

4.4.1 Organisational structure

The Institute has identified three management Centres (See Figure 8) viz:

- The Office of the Executive Director / Executive Strategic Support
- Technical Services
- Corporate Services

It is a relatively flat structure and provides for a level of guidance, supervision and monitoring that is critical to the successful implementation of the MTP.

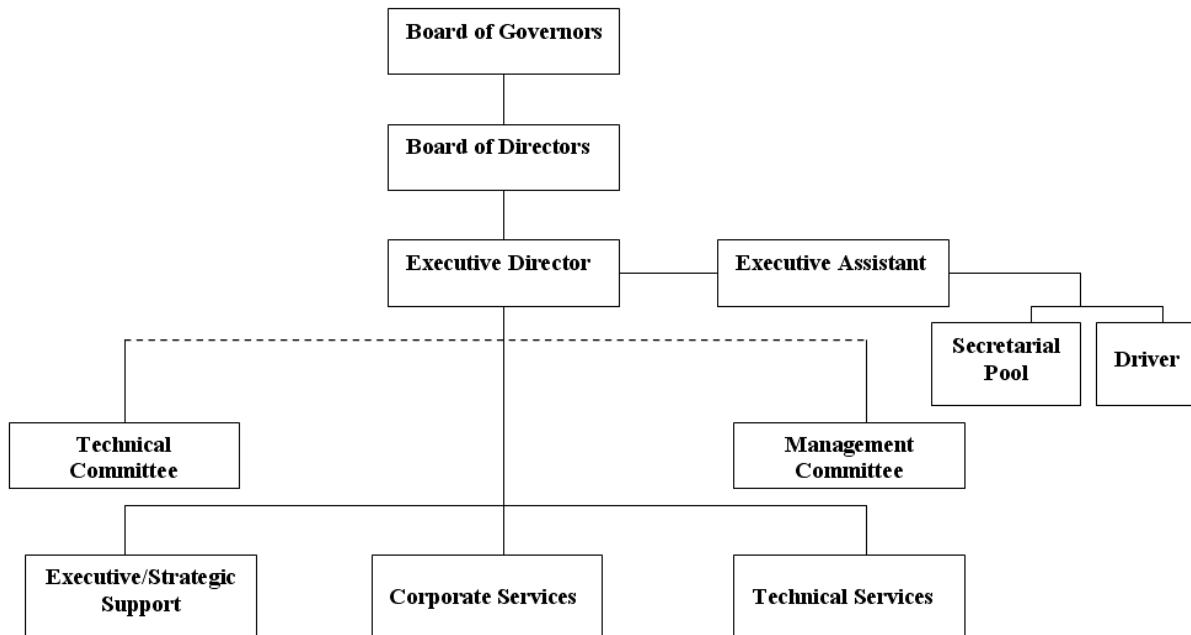


Figure 8: CARDI Functional Chart

4.4.1.1 Office of the Executive Director (Executive Strategic Support)

The Office of Executive Director (Figure 9) comprises the Units, Monitoring and Evaluation, Corporate Image, Strategic Alliances and Internal Audit. These Units are supportive but critical to the conduct of CARDI’s technical work and the enhancement of its image with the wider public.

The Executive Director is supported by two Committees, Management and Technical. The Management Committee comprises the Managers, Technical Services and Corporate Services, the Executive Director and the Executive Assistance as the Ex Officio Secretary.

The Technical Committee comprises the Professionals at Headquarters and the Trinidad and Tobago Unit. Depending on the topic to be discussed, additional Country Representative(s) (CR(s)) will be invited. It is at this forum that the CR(s) will defend their national programmes. It is chaired by the Technical Services Manager and has the responsibility for ensuring the scientific integrity (including research methodology) of the Institute’s work and the synergy/integration of activities between Units.

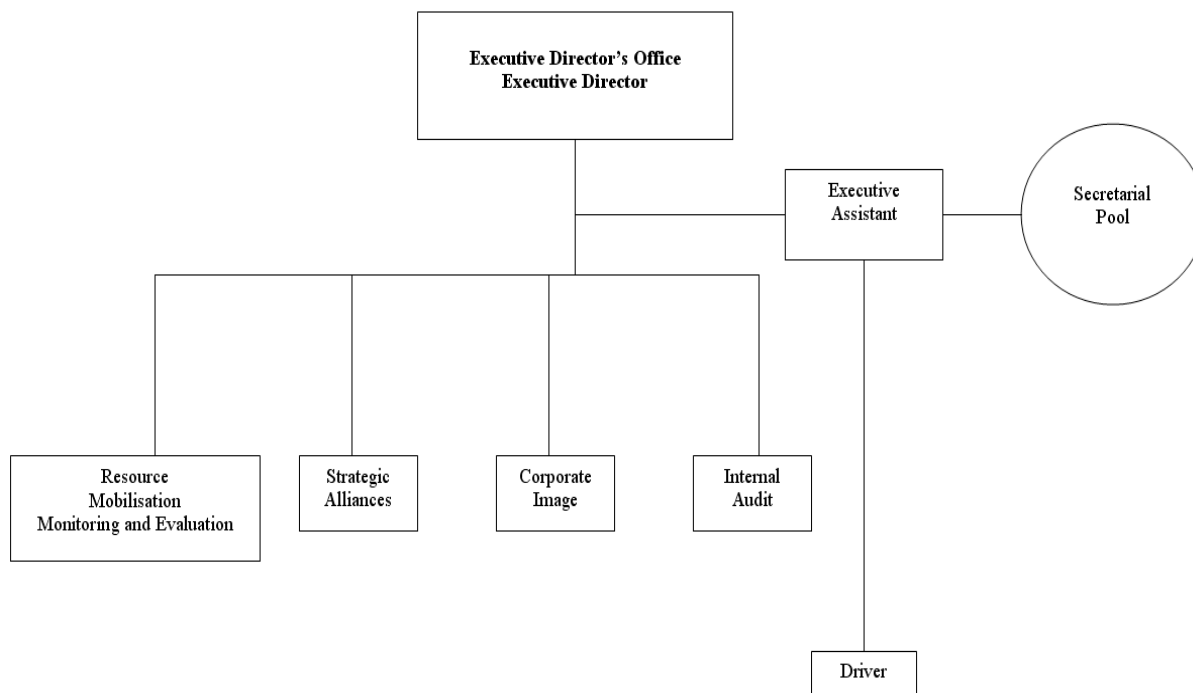


Figure 9: Functional Chart - Office of Executive Director

4.4.1.2 Technical Services

This Division is managed by the Technical Services Manager. There are 11 Country Units managed by nine Country Representatives. There is one Country Representative for Dominica and Antigua and Barbuda and also for Montserrat and St. Kitts and Nevis, share one Country Representative.

In addition, there is a Coordinator for technical activities and programmes for the OECS Units. This is to ease the technical supervision burden of the Manager. These Country Units are supported at Headquarters by the Information and Marketing, Biometrics and Information and Communications Units (See Figure 10).

Commodity leaders have been assigned to the Institute's core commodities, hot pepper, sweet potato and small ruminants. They will lead teams that will be responsible for the planning, development and implementation of activities within each commodity area. Thematic specialists have been assigned to specific cross cutting themes (Refer to Annex 2).

The Commodity leaders and Thematic Specialists are charged with keeping CARDI at the “cutting edge” of technology in their respective areas.

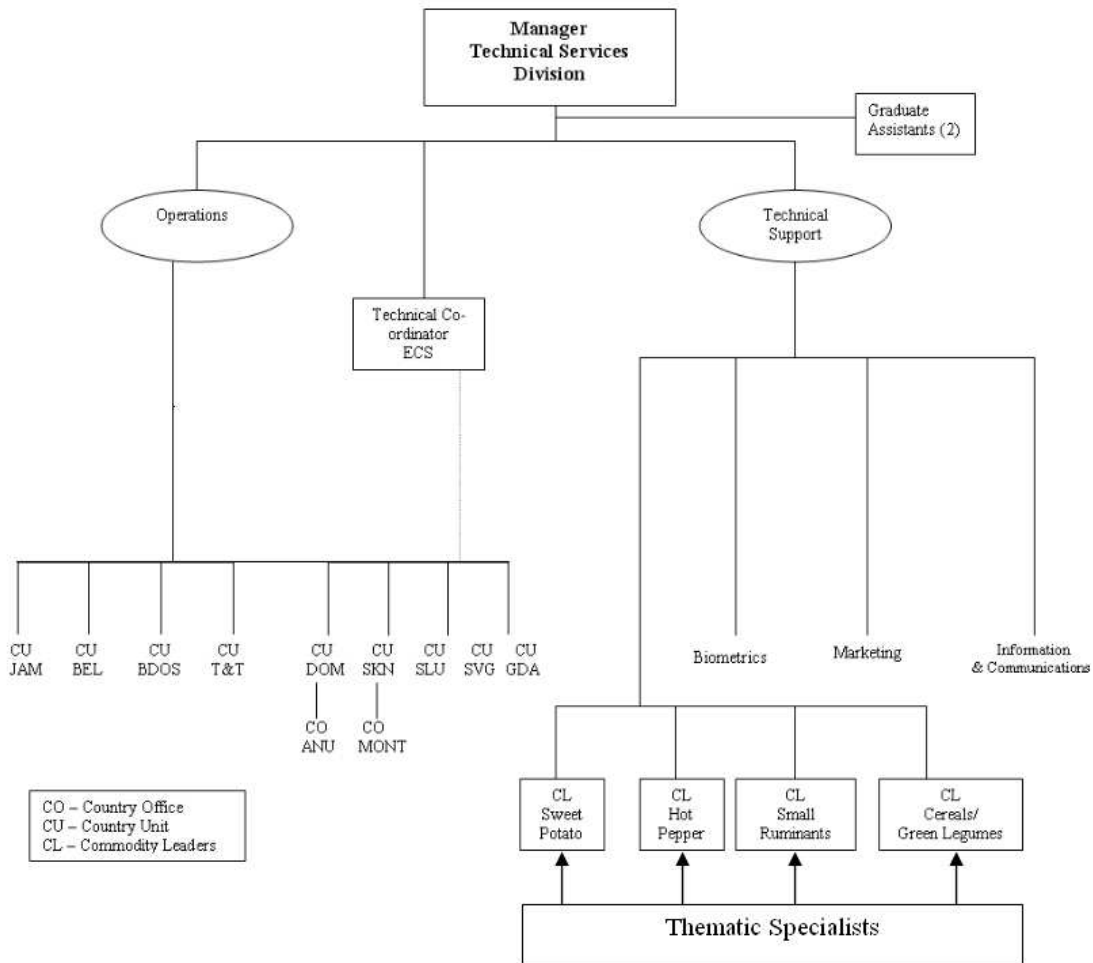


Figure 10: Functional Chart - Technical Services

4.4.1.3 Corporate Services

The Corporate Services Division is headed by a Manager and comprises the following Units, Human Resources Development (HRD Unit), Finance (including accounts) and Services (See Figure 11). The HRD Unit will emphasise the development aspect of its portfolio so as to ensure a trained cadre of professional and technical staff and to implement a Succession Planning Programme. It will also develop programmes to assist staff to prepare for and enjoy retirement. The Finance Unit will introduce systems to enable the “on time” availability of accounting data so as to allow proper financial management of the Institute and the availability of audited accounts no later than March/April of the following year.

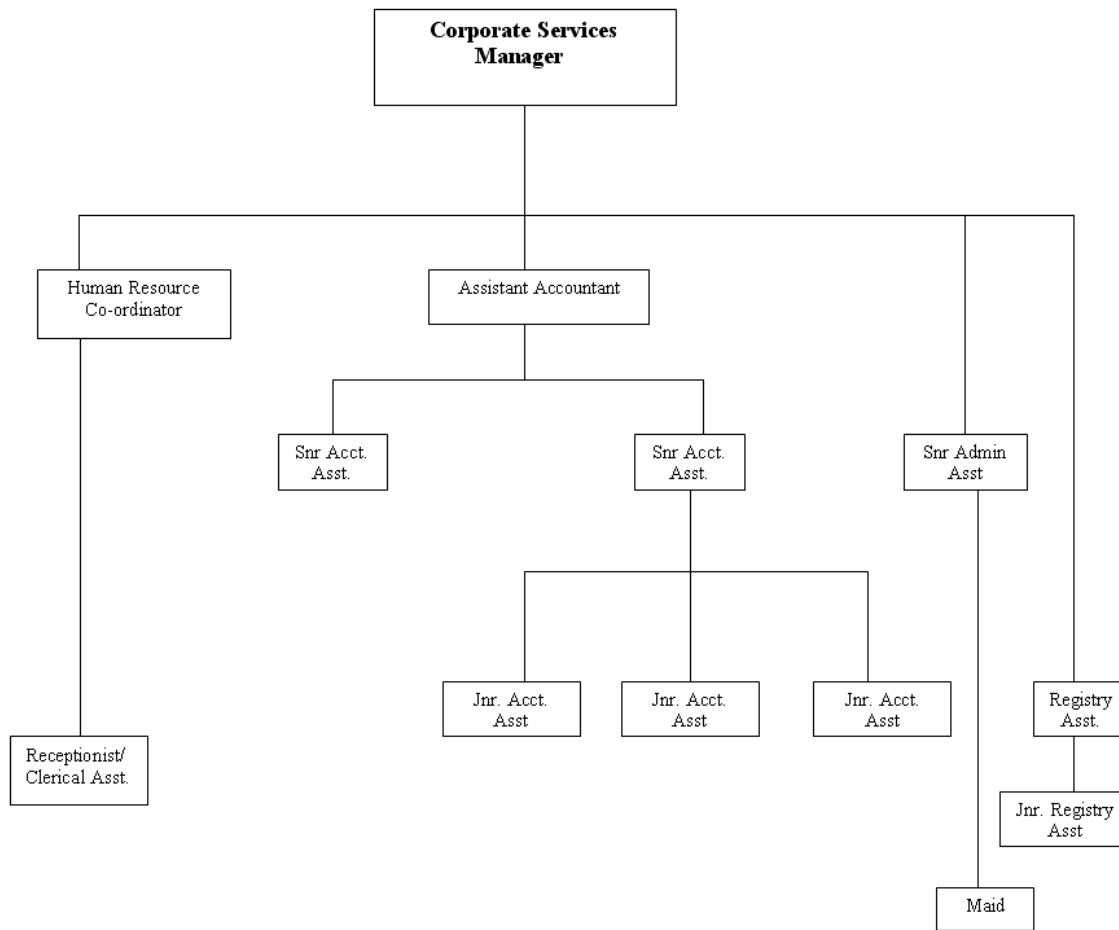


Figure 11: Functional Chart - Corporate Services

4.5 Financing the MTP

The budget for the MTP 2008 to 2010, recognises that the core budget has been frozen for the past 12 years and is unlikely to be increased during the period of this MTP. As such, there will be greater pressure on the Core budget due to increases in personnel and other fixed costs over the years. Consequently, working capital for operations is very limited. Therefore, significant emphasis is placed on resource mobilisation for financing the work programme and capital retooling (Strategic Axis 2).

The application for financing from the Petroleum Fund, once successful, will add significant sustainability to the Institute’s financial position. In aggregate, 80% of the financing emanate from core sources (country subventions and revenue generation) while the remaining 20% of the work programme is financed from external sources. Over the period, Government subventions collections will increase from

90% in 2008 to 92% by 2010. Revenue generation and external resources are expected to increase progressively, but more significantly

The distribution of expenditure from **core** is as follows:

Expenditure	%
Personnel	78
Administration	10
Operating	12
Total	100

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

1. Governments would continue to make timely contributions and collections will increase from 90% in 2008 to 92% by 2010
2. Generated revenue will increase by 5% per annum
3. An endowment fund would be established out of request from the Petroleum Fund. Annual interest on this fund is calculated at 5%, of which 67% will be used as operational funds, the balance to be re-invested in the fund
4. Personnel costs to be increased by 5% per annum (will be placed in a Holding Fund)
5. Administrative cost to be increased by 5% per annum
6. Capital expenditure will be financed from arrears

Source of Funds

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. However, historically, only 90% of this amount is collected. It is believed however, that with the renewed commitments made by member governments in recent meetings with CARDI’s management that this could rise to 92% by 2010.

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 as interest generated from savings accounts. This is expected to increase by 23% between 2008 and 2010.

From 2009, CARDI has made provision for interest accruing from an Endowment Fund. As detailed above, the budget provides for two-thirds of the interest derived from that Fund to meet operational and capital costs as from 2009.

While no provision has been made in the financing plan, it is possible, that in the period covered by the MTP, arrangements may crystallise resulting in new memberships in CARDI. Arrangements with the British Virgin Islands and Cayman Islands are examples of potential new arrangements.

2. **External Resources** – Co-operative programmes that showed a declining trend between 2003 and 2007, now show signs of an upswing. External Resources are expected to grow at conservative average rate of 12% per annum to 2010.

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.

Capital Budget

The capital budget will be funded from arrears and supplemented by funds received from the application to the Petroleum Fund. Funding from arrears will be used for capital expenditure, training, commercial projects and extraordinary activities.

LIST OF ANNEXES

Annex I
DEFINITIONS OF MTP HIERARCHICAL FRAMEWORK

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	<ul style="list-style-type: none"> 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
<i>FOCAL AREA 1.1:SCIENCE, TECHNOLOGY & INNOVATION</i>	Commercially viable/ environmentally sound commodity based industries	To establish To employ science and technology to established and emerging agriculture for increased agri-food production and industry development.	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Increased usage of improved production and post harvest technologies amongst agri-food producers
<i>FOCAL AREA 1.2:NATURAL RESOURCE MANAGMENT</i>	Commercially viable/ environmentally sound commodity based industries	To evaluate/understand the environmental elements in the context of their contribution & impact on agri-food production	<ul style="list-style-type: none"> 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: Invasive Species (IS)	Maintenance of an environment alert for and protected from the harmful effects of IS	To improve opportunities for awareness of global action for the identification and control of invasive species	<ul style="list-style-type: none"> Protocols for identification and control of IS Database of common and potential IS IS network IS Early warning and control systems

HIERARCHICAL ELEMENTS OF THE MTP FRAMEWORK	GOAL	OBJECTIVE	EXPECTED RESULTS
Priority Area: Climate Change	Participation in global networks for dealing with climate change issues and its effect on agriculture	To improve opportunities for awareness of global action for the projection and potential impacts of climate change	<ul style="list-style-type: none"> Action plans for disaster mitigation and management
Priority Area: Biotechnology	‘Cutting edge’ agri-food production, evaluation and management systems through the application of biotechnology	To upscale the quality of R&D and increase productivity the application of biotechnology	Protocols for improved: <ul style="list-style-type: none"> Micro-propagation systems Disease/pest management and control systems Germplasm multiplication & storage systems
STRATEGIC AXIS 2: DEVELOPMENT OF STRATEGIC LINKAGES	Efficient collaborative network of stakeholders, collaborators and strategic partners within the public & private sectors	To establish formalised relationships with stakeholders, collaborators and strategic partners	<ul style="list-style-type: none"> MOUs, Contracts project documents Access to other institutional resources Established partnership in the execution of the institute’s portfolio
<i>FOCAL AREA 2.1: PARTNERSHIPS & COLLABORATIVE LINKAGES</i>	Efficient collaborative network of stakeholders, collaborators and strategic partners within the public & private sectors	To pursue through collaborative initiatives the sharing of information, physical and financial resources	<ul style="list-style-type: none"> MOUs, Contracts, project documents Shared resources Attained CARDI deliverables
Priority Area: Build & Maintain Relationships with Donors, Key Stakeholders, Other R&D Institutions, Private Sector & Other Institutions	Efficient collaborative network of stakeholders, collaborators and strategic partners within the public & private sectors	To pursue/develop strategies for the collaborative delivery of technology products and services	<ul style="list-style-type: none"> MOUs, Contracts, project documents Established Research chains
Priority Area: Establish ‘Friends of CARDI’	A fully subscribed trust fund sustained by the ‘Friends of CARDI’	To mobilise alternative financial resources for the execution of the institute’s R&D programmes	<ul style="list-style-type: none"> Increased financial resources Established ‘Friends of CARDI’ Fund

HIERARCHICAL ELEMENTS OF THE MTP FRAMEWORK	GOAL	OBJECTIVE	EXPECTED RESULTS
<i>FOCAL AREA 2.2: ADVOCACY</i>	CARDI regarded as a credible, lead regional R&D institute and centre of excellence	To promote the philosophy and image of CARDI	<ul style="list-style-type: none"> Promotional literature including brochures, fact sheets, periodicals etc.
Priority Area: Re-branding & 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	<ul style="list-style-type: none"> Strategic plan for the re-branding/ promotion of CARDI
Priority Area: Website Development	Electronic data base of CARDI, its role, functions and achievements for perusal by global audiences	To present to the widest audience public information on the role, functions and achievements of CARDI	<ul style="list-style-type: none"> CARDI website
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	<ul style="list-style-type: none"> Portfolio of strategic and priority actions Implementation framework and schedule Increased access to resources
<i>FOCAL AREA 3.1: INCOME GENERATION</i>			
Priority Area: Resource Mobilisation	Availability of suitable financial, human and other physical resources required for the implementation of CARDI's work programme	To develop an efficient/effective system for the mobilisation of resources	<ul style="list-style-type: none"> Action plan for the mobilisation of resources
Priority Area: Revenue Generation & Technical Assistance	Increased Financial resources through the provision of technical assistance services	To increase the institute's financial resources through the provision/ marketing of technology products and services	<ul style="list-style-type: none"> Increased financial resources earned from the provision/sale of the institute's products and services
<i>FOCAL AREA 3.2: CAPACITY BUILDING</i>	A strong organised institution with	To build a strong competent R&D institution with	<ul style="list-style-type: none"> Action plan for human resource training & development

HIERARCHICAL ELEMENTS OF THE MTP FRAMEWORK	GOAL	OBJECTIVE	EXPECTED RESULTS
	capable human resources, financial strength and earning capacity	sufficient resources to carry out its mandate	
Priority Area: Human Resource Development	A qualified, competent human resource base and human resource development system	To improve the human resource skills within the institute	<ul style="list-style-type: none"> • Portfolio of selected training programmes
Priority Area: Staff Motivation	A highly motivated and progressive human resource base	To promote and maintain high institutional morale	<ul style="list-style-type: none"> • System for the appraisal and rewarding of staff performance
Priority Area: Culture Change	A CARDI workforce of positive attitudes, morale and enthusiasm	To develop and maintain good work attitude and a high standard of ethics within the institution	
Priority Area: Organisational Development	A strong institutional system of transparency, accountability and overall professionalism	To improve the capability and competence of	<ul style="list-style-type: none"> • Manual of corporate reporting, management and networking system

Annex II

STRATEGIC AXES, FOCAL AREAS, PRIORITY AREAS AND PROGRAMMES AND IDENTIFICATION OF LEADERS

Summary - Strategic Axes, Focal Areas, Priority Areas and Programmes and Identification of Leaders

Strategic Axis	Focal Area	Priority Area	Programme	Key Priority Actions
1: Development of Sustainable Industries (FHA)	1.1 Science, Technology and Innovation	1.1.1 Technology generation and transfer	1.1.1.1 Commodity development - Crops ^{1,2,3}	<p>Develop and/or improve varieties (hot pepper)</p> <p>Produce breeder, nucleus and commercial seeds of the evaluated varieties and landraces</p> <p>Develop and transfer production technology packages</p> <p>Characterise and evaluate varieties for production and value added products</p> <p>Multiply and distribute disease-free planting material</p> <p>Develop and distribute improved breeds of small ruminants</p>
			1.1.1.2 Commodity development - Livestock ⁴	<p>Develop and transfer feed and feeding systems technologies especially forage-based systems</p> <p>Identify and transfer sustainable practices for cultivating crops on reclaimed bauxite lands</p>
			1.1.1.3 Soil and water management	<p>Germplasm evaluation, production and management</p> <p>Determine market trends and identify characteristics of the varieties required for fresh and value added</p>
			1.1.1.4 Development of germplasm banks	<p>Validate and transfer production technologies and technical packages for “undercover systems”</p> <p>Investigate and transfer commercial seedling and vegetable production techniques under shade house</p> <p>Determine and implement requirements for protecting CARDI’s Intellectual Property</p>
			1.1.1.5 Systems and services (Biometrics, Information, Marketing)	

1.1.1.6 Emerging issues⁵

1.2. Natural Resource Management	1.2.1 Invasive species ⁶	1.2.1.1 Support to invasive species initiatives	Lead actions within the Caribbean Invasive Species Working Group(CISWG) to implement the Caribbean Invasive Strategy Support MOAs' initiatives to manage invasive species, such as Red Palm Mite
		1.2.2 Climate change ⁷	1.2.2.1 Coordinated climate change and disaster management
	1.2.3 Biotechnology ⁸	1.2.3.1 Development of biotechnology for priority commodities	Determine (within climate dynamic zones), commodities in identified land resources that could be competitive. Evaluate potential selected commodities (within climate dynamic zones) as to their commercial suitability Production of clean, disease free planting material Conduct of genome mapping
2. Development of Strategic Linkages (ED; BL)	2.1 Partnerships and Collaborative Initiatives	2.1.1 Build and maintain relationships	2.1.1.1 Support to development of regional R & D strategies
		2.1.1.2 Develop / Operationalise MOUs with key institutions and partners	Develop initiative with regional agencies for evaluation of selective cultivars Collaborate in the development and acceptance of Regional R&D strategy Develop/strengthen relationships with technical, academic, development and finance entities Develop/strengthen relationships with regional integration agencies e.g. CARICOM/CARIFORUM, OECS, UNECLAC

		2.1.1.3 Consolidate and expand membership base of CARDI	Explore membership of CARDI with other CARICOM countries (Bahamas, Haiti and Suriname) and Associate Members, e.g. Cayman Islands
	2.1.2 Establish "friends" of CARDI	2.1.2.1 Develop guidelines for operations, areas of interest and agree on functions	Lobbying potential individuals and entities to become members Preparation of instruments for describing and formalising relationships and agreements Establish and make operational at least two chapters
2.2 Advocacy	2.2.1 Re-Branding and promotion of CARDI	2.2.1.1 Development of strategies (media, etc)	Policy formation and co-ordination of CARDI publications and seminars
		2.2.1.2 Promotion of R & D for the 'New' agric	Seminars, workshop, exhibitions, publications Design and Organise CARDI Lecture Series Promote and strengthen National Research Co-ordination committees
		Publications	Development of a CARDI flag
		2.2.1.4 Participation in exhibitions	
	2.2.2 Website development	2.2.2.1 Development and management of website	Contribute material for the Units' web pages
3. Institutional Strengthening (CN; MW)	3.1 Income generation	3.1.1 Resource mobilisation	3.1.1.1 Identification and prioritisation of potential financial and human resource donors 3.1.1.2 Project development 3.1.1.3 Project monitoring and evaluation
			Identification/listing of donors and collaborations Preparation of project documents Preparation of reporting formats for monitoring and evaluation
	3.1.2 Revenue generation and technical assistance	3.1.2.1 Consultancy services / technical assistance	Technical support to CARDI field station Consultancy service in several areas

		3.1.2.2 CARDI commercial production	Technical support to CARDI field station projects Produce and market various crops and livestock commodities produced by the CARDI Field Station
3.2 Capacity building	3.2.1 Human resource development	3.2.1.1 Pool of experts / Centres of excellence	In-house training and development of in-house training programmes Attachments to Universities for hands-on training Attendance at Courses and Programs for development/upgrade of skills
		3.2.1.2 Leadership / Succession planning	Development and implementation of performance appraisal and rewarding systems
		3.2.1.3 Training	Definition of CARDI core values
	3.2.2 Staff motivation	3.2.2.1 Performance management	Development and implementation of performance appraisal and rewarding system
		3.2.2.2 Reward and recognition	Implement performance management system
	3.2.3 Cultural change	3.2.3.1 Definition of core values	Oversee the practice of CARDI core values at all values
	3.2.4 Organisation development	3.2.1.1 Finance	Preparation and implementation of finance and administrative management systems
		3.2.1.2 Administration	Preparation of human resource manual
		3.2.1.3 Internal networking	Review and upgrade of information and knowledge management systems
		3.2.1.4 Knowledge management	Recognise staff achievements in CARDI Update Submit financial data fortnightly Manage cash resources including projected cash flows Update/maintain Fixed Asset Register

Key commodities

¹Sweet potato - ANU, DOM, GND, JAM, MON, SKN, SLU, SVG

²Hot pepper - ANU, BDS, BLZ, DOM, GND, SKN, SLU, SVG

³Cereals and grain legumes - BLZ

⁴Small ruminants - ANU, BDS, JAM, SKN, SLU

