C A R D I

Medium Term Plan
2014-2016

Improving Lives Through Agricultural Research

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The CARDI MTP 2014-2016

Executive Summary

The MTP, 2014-2016, follows a proven path to achieving success for the Institute and, by extension, the sector. The previous MTP, 2011-2013, built on various principles articulated in the previous MTP. This approach was prudent and successful in that the programmes implemented were responsive to the Region's mandate and major priorities. In moving forward, the MTP, 2014-2016, seeks to consolidate the previous work programmes.

The preparation of the MTP, 2014-2016, is premised on the following key foundational blocks:

- Ongoing trends in global economic development with relation to fluctuating oil and gas costs, the lingering effects of the global economic crisis, food availability and accessibility, volatile food prices and shifting consumer preferences and the effects of climate change for small islands and low lying coastal states. Collectively, these factors primarily impede the ability of Governments to fund research and development and require agencies to source other means of funding.
- The international *Agricultural Research for Development* (AR4D) agenda that is influenced by a number of agencies and organisations, led by the Consultative Group on International Agricultural Research (CGIAR), and are part of the global agricultural system. The primary goal of the AR4D is *to reduce poverty and hunger, improve human health and nutrition, and enhance ecosystem resilience through high quality international agricultural research, partnership and leadership.* This global community aims to improve public and private investments in agricultural research to better address food and nutrition security and poverty reduction. The system is focused on both requirements for development and, with increasing importance, on implementation of programmes and strategies.
- The critical food requirement since world population (primarily in developing countries) is expected to grow by 2.3 billion people between 2009 and 2050. This increase will require increased food production by 70 percent. However, food supply will also be influenced by post- harvest issues as well as the general management and proper

consumption of food. These issues will require a broadening of Research and Development initiatives.

- The forecasts that investment in research will not improve in the short term, and accordingly, research activities will require more collaboration and targeted interventions amongst existing entities.

The Regional Agricultural Agenda, which is evidenced in the various regional policy instruments, namely the Jagdeo Initiative, the Liliendall Declarations on Agriculture and Food Security and Climate Change and Development, Community Agriculture Policy, the Regional Food and Nutrition Policy, provides the framework for establishing the priorities and programmes of the Institute. Within that context, the Institute, which is the only R and D institution identified in the Revised Treaty of Chaguaramas, is well positioned to be the preferred institution to contribute to regional development in Agriculture. In this regard, the MTP is also driven by the mandate given to the Institute by the various national Governments in the Region.

In addition, CARDI places its development programme in the context of the overall regional development programme. With the development of a five year Strategic Plan for CARICOM, there is a mandate that requires regional institutions to facilitate a convergence between institutional policies and the CARICOM priorities.

The CARDI is also identified as the organization responsible for the coordination of the Agriculture, Food and Nutrition Cluster (the Cluster) which was established by the CARICOM Secretary General. It aims to:

- collectively support and promote the policies, strategies and programmes that are approved by COTED and ultimately, Heads of Government,

- reduce overlap among agencies involved in agriculture in the Region as well as to facilitate increased focus on priority activities.

The general direction of the current MTP is again guided by the overall strategic elements of the Institute's Vision, Mission and Core Values:

The CARDI Vision

The Center of Excellence in the Caribbean conducting research for development that creates wealth and competitiveness in the Region's agriculture.

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 Values

Integrity, professionalism and excellence in everything we do.

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

The strategic framework, that has informed the Institute's activities and functions during the last two medium term periods, continues to be relevant and valid for the MTP, 2014-2016. This strategic framework is defined by three Strategic Axes, namely Strategic Axis 1 – The Development of Sustainable Industries, Strategic Axis 2 – The Development of Strategic Linkages and Strategic Axis 3 – Institutional Strengthening.

Strategic Axis (SA) 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 optimisation of the use and conservation of the natural resources. The key programmes under this SA include:

- Commodity Development – Crops and Livestock
- Germplasm

- Emerging Issues
- Protected Agriculture
- Biotechnology Development
- Promotion of Science, technology and Innovation
- Technical Systems and Services
- Invasive Species Management
- Climate Change for Agriculture Development
- Soil Management
- Water Management

Strategic Axis (SA) 2 offers the platform for "working together" and the promotion of CARDI as the preferred agricultural research for development institution in CARICOM. Key programmes are

- Regional R & D Strategies
- Relationships with Key Institutions and Partners
- Membership Base of CARDI
- Branding CARDI as the Preferred R & D Institution in CARICOM

Strategic Axis (SA) **3** –seeks to mobilise the requisite resources and enhance the management of these resources to:

- Aggressively mobilise external resources
- Build the capacity of CARDI staff, its partners and stakeholders

- Mobilise and manage human and physical resources, as the conduit for attaining and efficiently utilizing the resources
- Enable delivery on SAs 1 and 2

The primary programmes under SA 3 are:

- Donor/Resource Agency Mobilisation
- Internal Revenue Generation
- Technical Assistance
- Human Resource Capacity
- Rebrand Human Capacity; Talent Management
- Maintenance
- Registry
- Administration/Operations
- Core and External Resource Management/FMIS
- Reports to Stakeholders/Agencies, etc

While the Programmes closely mirror those of the previous MTP, the MTP, 2014-2016, features a number of new Sub-programmes which include roots and Tubers – White (Irish) Potato; Bananas and Plantains, Coconuts, Value Chains, ICTs, Sustainable Intensification, Regional Sensitisation and Planning, Workshops, Internal Revenue Generation, Administration and Operations.

For each Programme, there are Institutional Expected Results which are complemented by Expected Results at the individual Unit level, which collectively allow for the attainment of the overall Institutional Expected Results.

In implementing the MTP, there is the recognition that there continues to be constraints to funding by the Member States. Consequently, during this current period, accessing of external financial resources and the generation of revenue are even more critical to the Institute being able to fulfil its ever increasing mandate. However, access to and use of Donor funds has shown significant change over the last three years. Specifically, Institutes have become subject to greater due diligence by Development Agencies and there is increasingly more importance on the achieved outputs/results leading to impact and outcomes.

The Institute will therefore adopt an internal strategy that recognizes the goal of creating and promoting an efficient, effective and self-sustainable CARDI. This will enable it to (a) be a Centre of Excellence for the generation, diffusion and application of knowledge along the appropriate components of selected Value Chains and (b) utilize to the fullest extent all of the human, technological and physical resources available to it.

In the case of the external strategy, the goal 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.

In terms of effective Governance, the Institute continues to be led by a triumvirate of power comprising:

- The Board of Governors, consisting of Ministers responsible for agriculture
- The Board of Directors, comprising primarily of representatives of the Ministers along with those from other development agencies, CARICOM Secretariat and research/education institutions.
- The Executive Director, who is responsible for implementing the mandates and decisions of the two Boards. The position is supported by three Committees namely Expected Results Profile, Management and Technical – and supervises three Divisions; Office of
- the Executive Director, Corporate Services and Technical Services.

A. Antecedents

Preamble

The Medium Term Plan (MTP), 2014-2016, follows a proven path to achieving success for the Institute and by extension, the sector. The previous MTP, 2011-2013, built on various principles outlined in the MTP 2008-2010. Therein, the Institute addressed the requirements of its stakeholders in both the public and private sectors. However, it is the successful achievement of the majority of its Expected Results that best established a case for continuation of existing principles and programmes.

In moving forward, the MTP, 2014-2016, will seek to consolidate the work that was established in the previous MTPs. Accordingly in the current MTP, the Institute has considered the issues, concerns and challenges that were encountered during the previous MTPs. These include:

- Increasing competition for and limited availability of both government and external donor funds
- The need to have operational a financial and accounting system that allows readily for transparency and accountability
- Increasing demand for technical support by stakeholders, particularly in new areas and commodities
- Ongoing calls for improved natural resource management including the growing concerns on the relationship between climate change and agricultural development
- Growing articulation for collaboration amongst regional, hemispheric and global entities involved in agricultural and rural development in the Region

Based on the aforementioned, the MTP, 2014-2016, will facilitate the Institute to magnify its efforts utilizing the following key principles:

- A continuing focus on institutional pillars: *bottom up/client led approach, working together and accountability and transparency*
- Seeking through an all inclusive process to have the strategic and programmatic framework internalised by key stakeholders to guide the development of work programmes , partnerships and ultimately donor funding

- Continuing work on a limited number of selected commodities and thematic areas, taking into consideration the expressed needs of stakeholders for expanded scope
- Strengthening its leadership role among development agencies in the Region and encouraging collaboration between the institutions
- Continuing an aggressive pursuance of externally funded resources
- Continuing submissions of funding proposals
- Consolidating the institutional restructuring process to facilitate, effective use of funds and accounting for same
- Effective functioning and use of the Institute's Financial Management Information System (FMIS)
- Consolidating of the role of science, technology and innovation in the development of the institutional work programme and the overall approach to sustainable transformation of the sector
- Strengthening and/or expansion of robust partnerships and relationships

The MTP, 2014-2016, is described in the following Sections.

2. INTRODUCTION AND BACKGROUND

2.1 Recent Trends:

Global Economic Development

Finance, **energy, food** and **climate change** are now having the greatest impact on the world's economy and consequently on the performance of the agricultural sector. The world economy though not yet fully recovered from the global financial crisis of 2007/8, is starting to show signs of growth again. Energy volatility has seen a prolonged fluctuation in oil and gas prices with most prices trending upwards in the last few years, with some reductions reported in 2013 as a result of movements in shale gas discoveries and increased emphasis on renewable energy. Food prices have continued to fluctuate but have generally been increasing especially in the Least Developed Countries. Climate change has led to many countries having to grapple with the problem of reducing greenhouse gas emissions while at the same time dealing with a proliferation of extreme weather events across the globe.

Finance

Fiscal measures taken by OECD countries in the wake of the financial crisis of 2007 have started to bear fruit. Nevertheless, growth is more robust among developing countries which, according to the OECD-FAO Agricultural Outlook 2010-2014, are expected to be the driving force behind predicted growth in agricultural production, consumption and trade. The October 2013 World Economic Outlook[1] Report of the International Monetary Fund (IMF) opines that global growth is still weak and there is a danger that the world economy could settle into a *subdued medium term growth trajectory*. In the Caribbean there are signals that many economies are in trouble, especially those dependent upon tourism, as economic recovery in the Region did not materialize as fast as governments had hoped.

[1] World Economic outlook: Transitions and Tensions. October 2013. A survey by the staff of the International Monetary Fund — Washington, DC.

Energy

Energy prices continue to fluctuate but are edging upwards as developing Regions pay more for fuel. The International Energy Agency (IEA) in its World Energy Outlook 2013[2] indicated that it expects global energy demand will grow to 2035. The share of fossil fuels in the world's energy mix is expected to fall from 82% to 76% in 2035. Nearly half of the net increase in electricity generation is expected to come from renewables. In the Region, apart from Trinidad and Tobago, the high cost of energy is one of the major drivers of recession in those Caribbean States now in negotiation with the IMF for bailout funds. The IEA's prediction of growth in renewables is worth further consideration by Caribbean governments. In this regard, the push by Barbados to become *the greenest economy in the region* is noteworthy.

Food and food prices

The food crisis of 2007/2008 is the backdrop to discussions on food and nutrition security. Since that well known price spike and attendant food shortages, short term price volatility across the world has increased considerably. The OECD-FAO Agricultural Outlook, 2010-2019, [3] indicated that as incomes rise in developing countries, diets are expected to slowly diversify away from staple foods towards increased meats and processed foods. In the Caribbean, the shift in consumer preferences to more processed foods has been accompanied by the near epidemic rise in nutrition-related non-communicable diseases (NCDs). This has implications for the Region's AR for D agenda which must now address the health aspects of improving food and nutrition security.

Climate change

Global energy-related CO_2 emissions increased by 1.4% to reach 31.6 gigatonnes (Gt) in 2012: a historic high. Non-OECD countries now account for 60% of global emissions, up from 45% in 2000. In the Caribbean, made up mostly of Small Island Developing States, which are particularly vulnerable to some of the more devastating effects of climate change, the pursuit of sustainable development models that are geared towards reducing their environmental footprint is underway. However, Trinidad and Tobago stands out in that it ranks 5th in the world in CO_2

[2] (http://www.worldenergyoutlook.org/media/weowebsite/factsheets/WEO2013_Factsheets.pdf
[3] http://www.oecd.org/site/oecd-faoagriculturaloutlook/45599621.pdf

emissions per capita. These facts highlight the need for the continued pursuit of low carbon development initiatives, including climate smart agriculture.

In addition, there is a growing call for increased focus on Sustainable Intensification. The primary focus of Sustainable Intensification is to increase food production from existing farm space with limited stress to the environment. With the call for increased food production in light of increasing population numbers, there must be proper management of inputs thereby ensuring an ability to sustain production of a range of crops over the long term.

2.2 Implications of the global economic environment for developing economies including the Caribbean

The 2013 World Bank Annual Report, which indicated that consequent to slower growth in China, GDP growth in East Asia and the Pacific is expected to slide to 7.3 percent in 2013 before rising in the subsequent two years. Growth in India and the rest of South Asia should improve slightly in 2013 to 5.2 percent. Growth also remains strong in much of Sub-Saharan Africa, where it is projected to rise to 4.9 percent in the short term. Growth increased in Latin America and the Caribbean to 3.3 percent. In the Middle East and North Africa, growth slowed to 2.5 percent as a result of continuing turmoil from the Arab Spring. Growth in Europe and Central Asia remains uneven. GDP in Latin America and the Caribbean grew by three percent in 2012. Growth is expected to remain robust, at around 3.5 percent, as strong domestic demand compensates for weak global economic conditions. The IMFs World Economic Outlook 2013 indicated weak activity in much of the Caribbean as tourism flows remain subdued and construction activity contracts. Consequently, resources from CARICOM Governments for agricultural research may be reduced. Accordingly, future investment growth in Caribbean agricultural research will be driven by non-government sources, e.g. donors and the private sector.

2.3 Recent Trends in Agricultural Research for Development

The international *Agricultural Research for Development* (AR for D) 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 a Consortium of International Agricultural Research Centres, established in April 2010 to coordinate and support the work of the 15 Centres it supports. The Consortium is an international organization that, together with the CGIAR Fund, advances international agricultural research for a food secure future by integrating and coordinating the efforts of those who fund research and those who do the research.

The Consortium is focused on results-oriented research, greater accountability to donors and a strong emphasis on collaboration and partnerships. One major outcome of this new structure has been the development of the CGIAR Research Programmes (CRPs) which align the research of the 15 Research Centres and their partners into efficient, coherent, multidisciplinary programs.

The biennial Global Conference on Agricultural Research for Development (GCARD) was initiated in 2010. Accordingly, GCARD 2 took place in October 2012 in Uruguay. Organized by GFAR, in partnership with the CGIAR and the Government of Uruguay, GCARD 2 set out to

move the process forward from WHAT transformation of AR for D is required, to HOW to implement the GCARD Road-Map and the difference it makes. The message of the Conference focused on better meeting the needs of smallholder farmers. [4] The 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 AR for D agenda, and by extension, the Caribbean regional AR for D agenda.

The future of AR4D: The Way Forward – A Roadmap

The GCARD Roadmap established 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. In 2010, it proposed a six-point plan for transforming AR for D 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 AR for D
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

With a strong focus on HOW to implement the above roadmap, GCARD 2:

[4] http://www.egfar.org/gcard

- Considered how AR for D systems can align with major development policies, such as, those of national Governments of the G8 and G20 and the establishment of post-2015 development goals.
- Repositioned women farmers' needs firmly at the centre of AR for D processes.
- Directly engaged the voices of youth into consideration of the issues involved.
- Developed and agreed collective actions, that will bring together diverse foresight analyses, to better understand future needs and priorities and help us all to shape the future we desire, particularly exploring the future for smallholder farming.
- Brought a range of innovative agricultural research-for-development agendas to centre stage: household nutrition, gender-based needs, attracting young people into agriculture, meeting the needs of communities shattered by protracted crises, linking farmers to markets, adapting to climate change impacts and fostering community-centred innovation were all addressed as key agendas alongside actions generating productive, sustainable and resilient agricultural production systems.
- Set out what is required for solid actions to track and stimulate investments and returns and make these more effective and comprehensive, linking public, private and civil mechanisms.
- Agreed practical concerted actions to develop required capacities at national, regional and global levels, providing a launch pad for a wide range of new partnerships and collective actions to deliver change, including the CRPs, the Tropical Agriculture Platform of FAO and partners, the Global Confederation of Higher Education Associations for the Agricultural and Life Sciences, the Gender in Agriculture Partnership and the New Extensionist focus of GFRAS and affirmed the need for the development and strengthening of robust partnerships to implement the Roadmap.

The critical food requirement context

World population is expected to grow by 2.3 billion people between 2009 and 2050. Nearly all of this growth is forecast to take place in developing countries, where sub-Saharan Africa's population will grow the fastest (+114 percent) and East and Southeast Asia's the slowest (+13 percent).

The projections show that feeding a world population of 9.1 billion people in 2050 would require raising overall food production by some 70 percent by 2050. Production in the developing countries will need to almost double. Annual cereal production, for instance, would have to grow by almost one billion tonnes and meat production by over 200 million tonnes to a total of 470 million tonnes in 2050. In this regard, the FAO-led Zero Hunger Challenge provides an important backdrop upon which to pin the Caribbean response to the global food shortage problem. Consequently, in pursuing these targets, the role of Good Agricultural Practices (GAPs) will be an ongoing focus. With emphasis on the need for safe and wholesome foods, producers must embrace GAPs.

Despite this focus, it is recognised that improved post-harvest practices will also contribute to the achievement of adequate food security levels. In addition, while food security initiatives are being pursued, there is often over consumption and wastage of food, which have the potential to mask the actual global food requirements. In the drive to feed an increasing global population, consideration should also be given to enhancing post-harvest practices as well as promoting healthy consumption practices and levels.

2.4 CARDI and the Caribbean Regional Agricultural Agenda

Increasingly, the state of agriculture is being determined variables outside of the sector. Thus, the increasing interdependence of related sectors is assuming more importance. For agriculture, the dynamics of the sector are often interwoven with elements of other sectors, such as, trade and industry, national security, health, tourism, education and finance. In this regard, in developing a research agenda, the dynamics of this inter-relationship must be taken into consideration.

However, investments in agricultural research are not expected to increase in the short term and rising energy costs are expected to negatively affect agricultural production and put increased pressure on food production systems to go 'green'. The need to grow more of the right foods from available land resources is dictated by population growth, unstable food prices, health and wellness concerns and the need to reduce poverty and hunger among the rural poor. Critically, climate change and resulting ecosystems degradation are going to affect the rural poor disproportionately. Landscape approaches, that take into consideration both the natural and socio-economic environment, are required to address these. Also, the changing structure and

function of international agricultural research is signalling the need for new and better partnerships that help to sustainably address food and nutrition security issues.
In this context, the following priorities will be addressed by this Medium Term Plan (MTP):

1. Resource mobilisation efforts that rely on partnerships with international centres and universities to increase the flow of donor resources to the Caribbean Region must be redoubled.
2. Promotion of climate-smart, low-carbon agriculture, including bio-fuels, recycling and farm-based input supply, to reduce agriculture's dependence on fossil fuels
3. Promotion of Sustainable Intensification as a major means of increasing food production from the limited land resources available in the Caribbean.
4. Attention to be given to high fibre complex carbohydrates, such as, roots and tubers to address the challenges associated with nutrition-related lifestyle diseases.
5. Placing of specific emphasis on climate change and the need to promote development resilient to climate impacts. This, coupled with Landscape approaches that address environmental and social concerns, in order to deliver sustainable development in the context of SIDS. In this paradigm, there will be emphasis on the role of women and youth as special efforts are made to engage with this demographic as part of a standard mechanism for stakeholder consultation.
6. Strengthening of collaboration and partnerships with national, regional and international organisations in order to promote innovation and the synergistic development and implementation of programmes and projects that improve food and nutrition security.
7. Comprehensive harnessing of the results from the successful implementation of programmes and projects to provide evidence for policy formulation and facilitate "upscaling".
8. Promotion of the application of value chain methodology as a means of understanding stakeholder relationships and the requirements for innovation in the sector so as to enhance agribusiness opportunities.
9. Robust application of ICTs as an absolute requirement to enable the above. In this regard, the innovative use of social media to promote food and agriculture concerns to various publics will be pursued. The use of open data platforms and other modalities to create mobile

applications that engage stakeholders and provide decision support tools for actors along the value chain will be mainstreamed.

B. CARDI Mandate

1. CARDI AND THE CSME

The thrust towards regional integration in CARICOM is driven by the principles outlined in the 2001 Revised Treaty of Chaguaramas establishing the CARICOM Single Market and Economy (CSME). The Single Development Vision (SDV), articulated to give effect to the CSME, identifies the agriculture-fisheries-forestry industry as one of the five economic drivers of the CSME. In this regard, the development initiative for agriculture must be designed to contribute to the goal of achieving: self-sustaining and spatially equitable economic growth; development of a full-employment economy; environmental protection and ecological sustainability; and democratic, transparent and participatory governance.

Policy Evolution

The 2001 Revised Treaty of Chaguaramas establishes the policy goals and objectives for agriculture in the Region. These policy goals and objectives were recently further articulated in the 2011 Community Agriculture Policy (CAP) positioned as the overarching framework policy for the development of the agriculture and food sector in CARICOM. The pillars of the CAP are:

1. Food and Nutrition Security;
2. Production-Trade (Value) Chains;
3. Sustainable development of natural resources (including forestry and fisheries), with a focus on building resilience to climate change impacts,
4. Rural modernization and youth and women programmes;
5. A modern agricultural knowledge and information system

The CAP takes into consideration the 2004 Jagdeo Initiative (JI), which was a response to the need to reposition agriculture. This emerged into a Strategy for the Alleviation of Key Binding Constraints (KBCs), with a focus on nine distinct yet inter-related areas for urgent and concerted actions.

The CAP was also developed within the context of the 2009 Heads of Government's Liliendaal Declarations on Agriculture and Food Security and Climate Change and Development. Generally, the Declarations sought to address issues related to agriculture and the effects of climate change in the Region. The Liliendaal Declarations on Agriculture and Food Security and Climate Change and Development were conceptualised:

- To signal and represent a re-commitment to pursue a strategic approach to transforming the agriculture sector into an internationally competitive sector with increased capacity to contribute to the sustainable development of the Region,
- To recognise and re-emphasize the dangers of climate change, which are already occurring in all Small Islands and Low-lying Coastal Developing States, such as, those in the Caribbean, and call for urgent, ambitious and decisive action by CARICOM states and the international community.

As a follow up to the Declarations, the CAP defines common agricultural goals and a strategic framework for policy implementation through functional cooperation. It also addresses common agricultural issues. The CAP encourages CARICOM Member States to link national policies to a more regional scope in a harmonised system. The intention was to synchronise national policies which would facilitate increased intra-regional cooperation, deepening of the integration process and strengthening of the CSME.

As a further commitment to agricultural development, in 2010 regional stakeholders validated the Regional Food and Nutrition Security Policy (RFNSP). This policy operationalises the commitment made by Heads of Government in the Liliendaal Declaration on Agriculture and Food Security. It is in alignment with national Food and Nutrition Security Policies and supports the overarching principles initially espoused in the Revised Treaty of Chaguaramas and the JI. In the RFNSP, there is a framework to promote national and regional focus on food and nutrition security issues, agricultural development policies, programmes and investments. A key element of the Policy is the acceptance that, in order to resolve diverse and interrelated problems, there must be complementary collaboration and coordination between agriculture and other sectors, such as, health, finance, trade, transport, tourism and education.

Regional Harmonisation and the Way Forward

The situation in CARICOM is also reflected at the Organisation of Eastern Caribbean States (OECS) sub-Region. In seeking to expedite the transformation process in the sub-Region, and consistent with the goal and the commitment of Member States under Article 20 of the Economic Union Protocol, the OECS Secretariat piloted a review of the existing 2009 Policy Framework and Strategic Plan for agriculture. The results of the review confirmed that the Policy Framework and Strategic Plan were well aligned to priorities and frameworks for the sector in the wider regional space.[5]

CARDI's Role

The various regional and sub-regional policies and initiatives are all aimed at transforming agriculture and achieving the various goals for the agricultural sector. In advancing the process the Region has initiated and begun to recognise advances in the sectors and there is a shift in philosophy from dwelling on the process of alleviating the KBCs on commodity specific basis thus allowing for more focused action. As an Institution of the Region, CARDI must therefore be committed to supporting the regional efforts as well as pioneering efforts at resuscitating the sector. The Institute will continue to play a lead role in addressing the targets identified by the Region.

CARDI is the only agriculture organisation identified under Article 21 of the Revised Treaty of Chaguaramas. It is the CARICOM Institute directly responsible for agricultural development by providing for, *inter-alia,* the research and development needs of the Region.

CARDI is well positioned to contribute to the development of the sector as purposed by the various regional initiatives. In positioning itself to tackle the regional challenges, CARDI holds fast to its mantra of a market driven approach to Research for Development. To spearhead the quest to advance the sector, CARDI must have a coordinated, focused and inclusive approach to its work.

As the Institute mandated to coordinate research for development activities for Agriculture in the CSME, CARDI's focus and work activities are framed by the two official CSME policies

[5] Revised OECS Regional Plan of Action for Agriculture, 2012 – 2022. Retrieved from http://www.iica.int/Eng/regiones/caribe/ECS/IICADocuments/OECS_RegionalPlanAction.pdf

relating directly to agriculture, - the CAP and RFNSP. As articulated in the CAP, the goal is "*to effect a fundamental transformation of the agricultural sector of the Community by diversifying agricultural production, intensifying agro-industrial development, expanding agri-business, strengthening the linkages between the agricultural sector and other sectors of the Caribbean Single Market (CSM) and generally conducting agricultural production on a market-oriented, internationally competitive and environmentally sound basis."*[6]

CARDI is also identified as the organ responsible for the coordination of the Agriculture, Food and Nutrition Cluster. The Cluster was established by the CARICOM Secretary General to collectively support and promote the policies, strategies and programmes that are approved by the COTED and the Heads of Government. The Cluster seeks to reduce overlaps among agencies involved in agriculture in the Region as well as to facilitate increased focus on priority activities within the Region. CARDI therefore plays a key role in providing leadership to the agencies as collectively they drive the development of the sector.

In addition, CARDI places its development programme in the context of the overall regional development programme. With the development of a five year Strategic Plan for CARICOM, there is a mandate that requires regional institutions to facilitate a convergence between institutional policies and the CARICOM priorities. By extension, the work of CARDI is premised on and complemented by the work of individual Member States. This pursuance of common objectives and collaborative interventions is critical for both addressing the challenges and capturing of opportunities. In this regard, CARDI has acknowledged this thrust and has ensured this convergence in this current MTP.

As outlined previously, the major responsibility for carrying out of an effective Science and Technology programme within the Region is under the purview of CARDI. It is based on this commitment and focus that the Institute will serve as a major driver in contributing to addressing the various regional challenges and operationalising the regional pronouncements. The use of science and technology within the development and overall sector transformation movement must be innovative, targeted, timely, result driven, tangible and appropriate in order to achieve the set goals.

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[6] 2001. Revised Treaty of Chaguaramas establishing the Caribbean Community including the CARICOM Single Market and Economy. 2001 Caribbean Community (CARICOM) Secretariat

In charting a way forward in its current MTP, the Institute will consider the existing priorities and principles identified by the Region in the development of a framework within which the Institute will operate. As such, CARDI will engage in the requisite research for development focus that will contribute to creating a competitive, market driven, entrepreneurial, ICT enabled and sustainable 21st century agriculture sector.

2. **The Strategic Approach and Planning Process**

2.1 Introduction

The Institute's strategic approach to the MTP (2014 - 2014) is influenced by global and regional economic, environmental and social agenda that is intricately linked with agricultural science/technology in order to accomplish its Mission. In this context several themes including climate change, energy, ICT and Value Chains, are found as cross cutting themes across the spectrum of selected commodities. Further, the core values, pillars, etc which characterised CARDI's *modus operandi* in the last two MTPs.

Accordingly, the Institute will continue to strengthen its science systems to improve research outputs in terms of quality, relevance and impact, facilitating knowledge generation, diffusion and application**,** and enhancing rural prosperity. 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 and utilise innovation.

The CARDI Vision

The Center of Excellence in the Caribbean conducting research for development that creates wealth and competitiveness in the Region's agriculture.

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, timely 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.

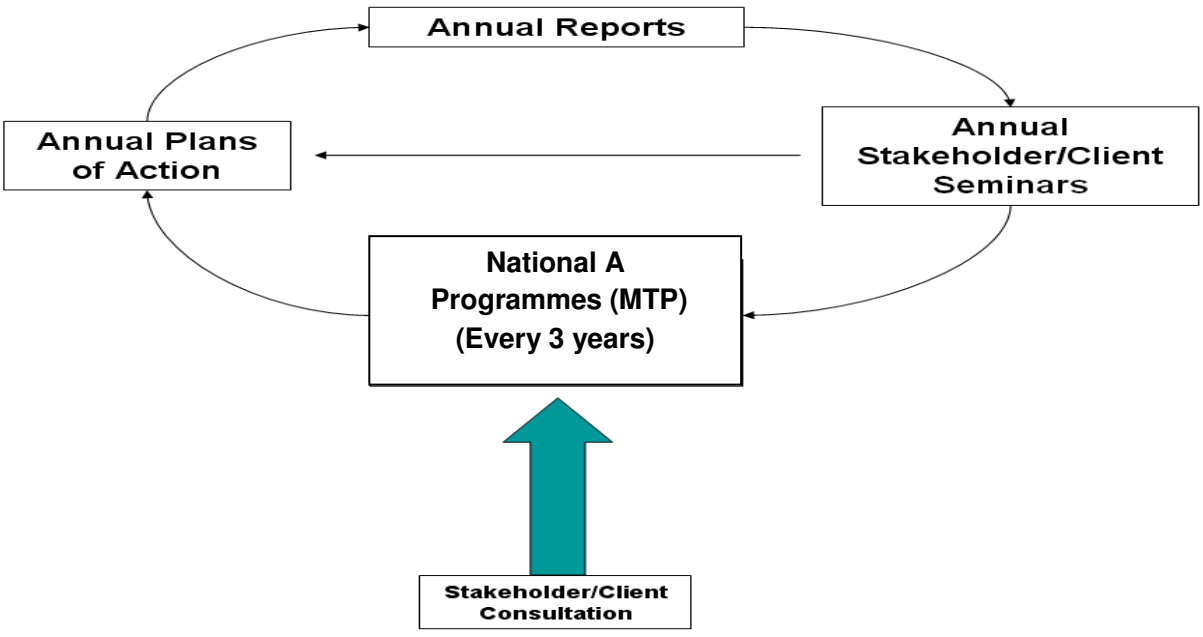


Figure 1: Bottom Up/Client Led Process

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 and Open Days to report on its performance (See Figure 2).

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 (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. That is, a holistic, integrated and seamless process.

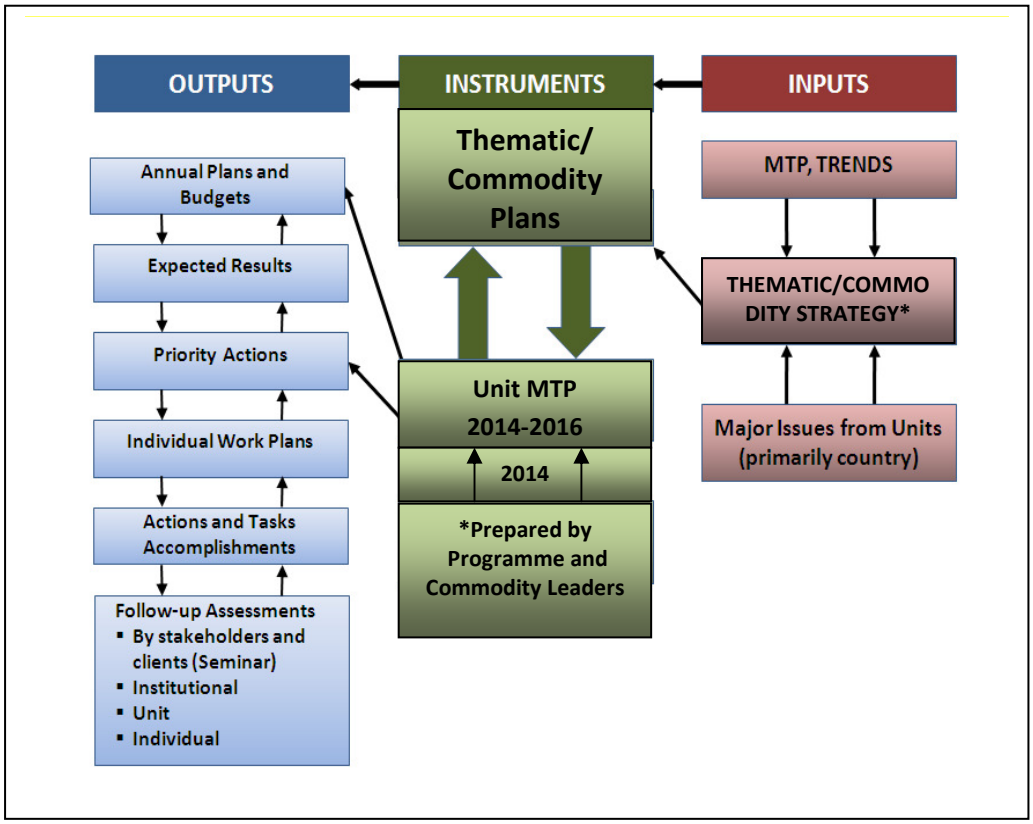


Figure 2: Accountability and Transparency

2.2.3 Working Together

The notion of 'working together' is an enhancement of the consultation process. It recognises that the Institute must collaborate with key strategic partners and stakeholders and share human, technical, physical and financial resources if it is to achieve its goals.

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

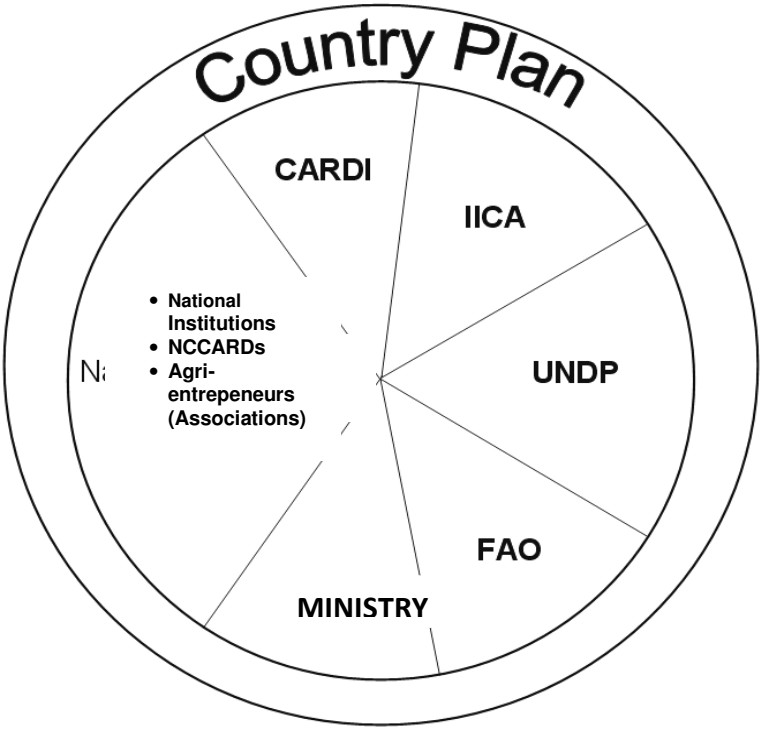


Figure 3: Working together (national level)

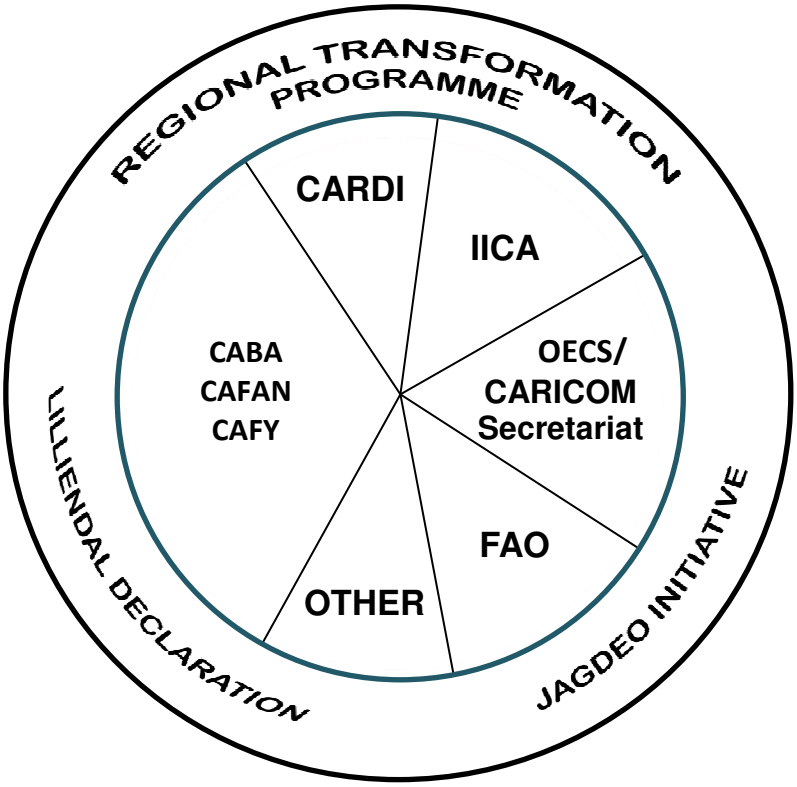


Figure 4: Working together (regional level)

C. ELEMENTS OF THE CARDI STRATEGIC FRAMEWORK

1. Introduction

The Strategic Framework that has informed the Institute's activities and functions during the last two medium term periods – MTP, 2008-2010, and MTP, 2011-2013, – continues to be relevant and valid for the MTP 2014-2016. This strategic framework is defined by the three Strategic Axes (SAs). These are Strategic Axis 1, '*The Development of Sustainable Industries*', Strategic Axis 2, '*The Development of Strategic Linkages*' and Strategic Axis 3, '*Institutional Strengthening*'. The determination of the contents and execution of these Strategic Axes are rooted in the antecedents (**Section A**) and the Mandate of the Institute (**Section B**) The achievement of the Expected Results, both at the institutional and unit levels, by the implementation of Priority Actions within these SAs will enable the Institute to contribute in the short-term to increases in the food supply of the Region, and, in the medium term, the stability of the agriculture sector and reduction in hunger and poverty. Such successes will, in time, enable CARDI to assist the sector becoming a significant driver to the sustainable development Agenda of the Region.

1.1 Defining the Elements of the Strategic Framework

As noted above, there are three SAs from which derive the rest of the elements of the MTP. Each Strategic Axis has two Focal Areas and each Focal Area has one or more Priority Areas. Each Priority Area in turn has one or more Programme. Sub-Programmes The hierarchical structure of the defining elements of the strategic framework is illustrated Sub-Programmes in Figure 5.

Similarly, 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).

Figure 5: Definition of elements of the strategic framework

The elements of the MTP 2014-2016 are presented in Table 1. This is amplified in Annex 1 which provides the definitions for the constituent SAs Focal Areas and Priority Areas. Table 1 shows that there are 12 Programmes and 34 Sub-programmes in SA 1. The corresponding numbers in SA 2 are four and six Programmes and Sub-programmes, respectively. In SA 3 there are nine Programmes and 21 Sub-programmes.

Table 1. Elements of MTP 2014 - 2016

CARIBBEAN AGRICULTURAL RESEARCH AND DEVELOPMENT INSTITUTE - ELEMENTS OF MTP 2014-2016					
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 economic technologies
					2. Value added products enhancements through the identification/ selection of suitable varieties and relevant post-harvest technologies
					3. Availability of quality planting material to facilitate higher productivity
					4. Availability of new/ improved production and post-harvest technologies through continuous generation and/or adaptation of new technologies.
					5. 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
				2. Cereals & grain legumes	1. Increased productivity and production of cereals and grain legumes from validated/ demonstrated and economic technologies
					2. Desired amounts of seeds for multiplication produced
					3. Availability of new/ improved production and post-harvest technologies through continuous generation and/or adaptation of new technologies.
					4. A cadre of knowledgeable and skilled stakeholders along the cereals and grain legumes value chain through capacity building programmes in production and post-harvest
				3. Hot pepper	1. Increased productivity and production of hot pepper from validated/ demonstrated and economic technologies for fresh and processed markets
					2. Landraces/varieties assessed for value added products

CARIBBEAN AGRICULTURAL RESEARCH AND DEVELOPMENT INSTITUTE - ELEMENTS OF MTP 2014-2016					
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	3. Hot pepper	3. Desired amounts of seeds of market-demanded varieties for multiplication produced
					4. Availability of new/ improved production and post-harvest technologies through continuous generation and/or adaptation of new technologies.
					5. 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. Bananas and plantains	1. Increased productivity and production of bananas and plantains from validated/ demonstrated and economic technologies
					2. Availability of quality planting material to facilitate higher productivity
					3. Availability of new/ improved production and post-harvest technologies through continuous generation and/or adaptation of new technologies.
					4. A cadre of knowledgeable and skilled stakeholders along the bananas and plantain value chain through capacity building programmes in production, post-harvest and value addition
				5. Coconuts	1. Increased productivity and production of coconuts 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 planting material to facilitate higher productivity
					4. Availability of new/ improved production and post-harvest technologies through continuous generation and/or adaptation of new technologies.

CARIBBEAN AGRICULTURAL RESEARCH AND DEVELOPMENT INSTITUTE - ELEMENTS OF MTP 2014-2016					
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	5. Coconuts	5. A cadre of knowledgeable and skilled stakeholders along the coconuts value chain through capacity building programmes in production and value addition
				6. Fruits and open-field vegetables	1. Increased productivity and production of fruits and vegetables from validated/ demonstrated and economic technologies
					2. Value added products enhancements through the identification/ selection of suitable varieties and relevant post-harvest technologies
					3. Greater amount of quality planting material available in a larger number of countries
					4. Availability of new/ improved production and post-harvest technologies through continuous generation and/or adaptation of new technologies.
					5. A cadre of knowledgeable and skilled stakeholders along the fruits and vegetables value chain through capacity building programmes in production, post-harvest and value addition
			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 economic 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

CARIBBEAN AGRICULTURAL RESEARCH AND DEVELOPMENT INSTITUTE - ELEMENTS OF MTP 2014-2016					
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	1.1.1.3 Germplasm	2. Animal genetic resource	1. Availability of semen, embryo and / or quality/ improved small ruminant breeding stock
			1.1.1.4 Emerging issues	1. Herbals	1. Information on recommendations for optimising commercial production of selected herbals
				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
				4. Value Chains	1. Actors knowledgeable in the processes and links in successful value chains
				5. ICTs	1. ICTs promoted to stakeholders as a mechanism for contributing to increased incomes in the agricultural sector
					2. CARDI's institutional operations enabled and led by ICTs
				6. Cross-border movement of germplasm	1. Harmonised protocols for the movement of plant and animal germplasm across the Region
			1.1.1.5 Protected Agriculture	1. Protected Agriculture systems development	1. Increased productivity and production through dissemination, adoption and application of validated/ demonstrated current best practices
					2. Availability of new/ improved production and post-harvest technologies through continuous generation and/or adaptation of new technologies
					3. 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

CARIBBEAN AGRICULTURAL RESEARCH AND DEVELOPMENT INSTITUTE - ELEMENTS OF MTP 2014-2016					
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	1.1.1.6 Biotechnology development	2. Biotechnology for crop commodities	1. At least one hybrid hot pepper variety developed
					2. DNA fingerprint profile of selected regional crops
			1.1.1.7 Promotion of Science, Technology and Innovation	1. Agriculture Science Technology and Innovation (ASTI)	1. Key actors in the innovation system trained in ASTI methodology and application
					2. ASTI stakeholder consultation process mainstreamed as CARDI methodology
				2 Sustainable Intensification (SI)	1. Suitability of SI for the Region assessed
			1.1.1.8 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. Enhanced market and trade oriented production systems determined through market information and analysis
				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
				5. Regional sensitization and planning workshops	1. At least one regional sensitization and planning workshop per year
	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

CARIBBEAN AGRICULTURAL RESEARCH AND DEVELOPMENT INSTITUTE - ELEMENTS OF MTP 2014-2016					
Strategic Axis	**Focal Area**	**Priority Area**	**Programme**	**Sub-Programme**	**Institutional Expected Results**
1. Development of Sustainable Industries	1. 2 Natural Resource Management	1.2.1 Risk management	1.2.1.1 Invasive species management	2. Coordination of approach	1. Protocols and processes for identification and mitigating effect of Invasive Species
					2. Invasive species networks and early warning and management systems
			1.2.1.2 Climate change for agriculture development	1. Adaptation	1. Varieties of commodities (important for regional FNS) adapted to climate change variability identified
					2. Facilitating relationship between knowledge of climate change factors through models and modelling
					3. Stored/ banks of adequate supplies of seeds and seedlings of landraces of staple food crops
				2. Mitigation	1. Climate smart systems evaluated
				3. Capacity/ Knowledge/ Information	1. Knowledgeable/ informed stakeholders on threats of climate change through capacity building and information dissemination
		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.

CARIBBEAN AGRICULTURAL RESEARCH AND DEVELOPMENT INSTITUTE - ELEMENTS OF MTP 2014-2016					
Strategic Axis	**Focal Area**	**Priority Area**	**Programme**	**Sub-Programme**	**Institutional Expected Results**
2. Development of Strategic Linkages	2.1 Partnership and Collaborative Initiatives	2.1.1 Build and maintain relationships	2.1.1.1 Regional R for D strategies	1. Development of R & D strategies	1. A Regional R&D strategy being promoted
				2. Coordination of initiatives to implement strategies	2. An integrated plan of action (involving key actors) that is operational
			2.1.1.2 Relationships with key institutions and partners	1. Implementation of actions in current relationships	1. Significant contribution to the work programme under at least six MOUs
				2. Development of new relationships	2. At least three new MOUs or renewal of old MOUs
			2.1.1.3 Membership base for CARDI	1. Membership base of CARDI	1. At least one other CARICOM territory becomes a member of CARDI
	2.2 Advocacy	2.2.1 Promotion of CARDI	2.2.1.1 Branding CARDI as preferred R&D institution in CARICOM	1. CARDI image enhancement	1. "New" agriculture promoted
					• Policy
					• Advocacy
					2. Communications & Outreach strategy operational
					• Traditional and New media
					• Exhibitions
					• Open Days/ Field Days
					3. Website actively managed
					4. Documents for public awareness (Annual Reports, Ministerial Updates, etc.) available

CARIBBEAN AGRICULTURAL RESEARCH AND DEVELOPMENT INSTITUTE - ELEMENTS OF MTP 2014-2016					
Strategic Axis	**Focal Area**	**Priority Area**	**Programme**	**Sub-Programme**	**Institutional Expected Results**
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 & mgmt.	1. The mobilisation of at least EC$40 million
				2. Implementation	2. A functional PIU with all the procedures and guidelines for implementation fully operational
				3. Monitoring and evaluation	3. Effective and efficient monitoring & evaluation systems
			3.1.1.2. Internal revenue generation	1.Technical assistance	1. Successful execution of activities earning administrative fees of at least 7% totalling EC$32 million
				2. Field station revenue	1. Produce sales **(research by-products**) valued EC$0.1 million
					2. Adequate gross revenue generated in accordance with plan
					3. One internal revenue generation unit operational
	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. Training programme (with appropriate tools) for CARDI staff and stakeholders available
				2. Leadership/ succession planning	1. CARDI succession plan operational
				3. Thematic/ Commodity Teams	1. At least three thematic and three commodity teams functional
				4. Centres of excellence	1. At least two thematic and three commodity virtual 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

CARIBBEAN AGRICULTURAL RESEARCH AND DEVELOPMENT INSTITUTE - ELEMENTS OF MTP 2014-2016					
Strategic Axis	**Focal Area**	**Priority Area**	**Programme**	**Sub-Programme**	**Institutional Expected Results**
3. Institutional Strengthening	3.2 Capacity building	3.2.2 Physical resources	3.2.2.1 Maintenance	1. Physical Maintenance upgrade	1. Ownership of all buildings/stations occupied by CARDI legally accredited to it
					2. Prioritised maintenance and replacement programmes of fixed assets, particularly buildings, available
					3. Assessment of required field and office equipment compared to that available for the purpose completed
					4. Goods and services available for the maintenance and/or operation of the Institute.
		3.2.3 Documentary resources	3.2.3.1 Registry	1. Maintenance and upgrade	1. A registry system that is consistent with the hierarchy of CARDI Strategic Framework operational at Headquarters and in at least five country units
		3.2.4 Financial resources	3.2.4.1 Administration and Operations	1. Financial Policy	1.Revised financial manual available
					2. Salaries and wages system/policies/guidelines implemented
					3. Supportive administrative processes available for the delivery of tasks/functions within the work programme
				2. Financial Administration	1. Administration of Salaries. Wages, etc effected in a timely and legal fashion
				3. Operations	1. Operations conducted effectively and efficiently
			3.2.4.2 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 continuously updated fixed asset register available
			3.2.4.3 Reports to stakeholders/agencies, etc.	1. Audit and other financial reports	1. The availability of Annual Audited Financial Accounts no later than three months after the end of the year
					2. The availability of three months (quarterly) management accounts no later than 15 days after the end of the previous month and donor financial reports no later than two months after termination of individual projects or as designated by the donor

2. Strategic Axes

The 'Strategic Axis' is the first tier of the hierarchical framework of the MTP and, accordingly, is the foundation upon which the MTP is constructed. As indicated above, there are three distinct but interdependent SAs.

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 for D support to the Region's agriculture. Therefore, consistent with the pillar of "working together" enunciated in Section B.2 above, the Institute has to work closely with allied agencies/institutions in pursuing its mandate.

Strategic Axis 2 offers the platform for "working together". Consequently, it facilitates (a) the promotion of CARDI as the preferred agricultural research for development institution in CARICOM and (b) the Institute's contribution to food and nutrition security and economic well-being of the peoples of the Region. Thus, in SA 2, CARDI will deliver on its mandate for the coordination of agricultural research for development within CARICOM. This is linked with its key aspect to maintain strong linkages with public and private institutions and other partners (in the Caribbean and globally) who can help CARDI to deliver the Expected Results for SA 1 and 3. This SA also promotes the "CARDI brand" and seeks to transform the public image of agriculture into a vibrant new industry. Through this Axis, the work of CARDI will be highlighted, ensuring that there is the recognition of the significant returns on investments in research.

Strategic Axis 3 aims to obtain suitable level of resources (quantum and quality) that is essential if the Institute is to successfully fulfil its mandate. As such, there are 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. In addition, this SA is the conduit for attaining the resources to

enable delivering on SA 1 and 2. Therefore, the programmes in SA 3 seek to mobilise the requisite resources and then to enhance and manage the resources.
The MTP 2014-2016 is, thus, purposefully structured to provide organic linkages among the three SA.

2.1 Highlights of new Programmes/ Sub-programmes in MTP 2014-2016

Programmes and Sub-programmes that constitute the MTP 2014-2016 are mostly the same as they were for MTP 2008-2010 and MTP 2011-2013. This is so because the basis/ rationale for identifying Programmes and Sub-programmes during the previous medium terms continues to remain valid and relevant. As such, the mandated commodities – Roots and Tubers, Hot Pepper, Cereals and Grain Legumes, Small Ruminants and vegetables under Protected Agriculture – remain on the CARICOM Priority Lists of Commodities.

While certain commodities may not be specifically identified on a regional level, the Institute recognises that there may be certain commodities with strong national importance that have not been prioritised. In such scenarios, once the commodity is captured under an overall group heading, this national priority can be addressed by the Institute depending on the availability of resources.

However, based on recent trends in agricultural research for development, regional imperatives and institutional needs, some necessary and significant revisions/ additions to the programmes/sub-programmes have been made in the MTP 2014-2016. The areas of changes are as follows:

- ***Roots and Tubers – White (Irish) Potato***: White (Irish) Potato is a staple food crop in the Region but they are mostly imported. Consequently, a couple of regional Governments have expressed the desire to produce the crop locally in order to reduce the foreign exchange for the importation. Therefore, white (Irish) Potato is included in this programme.
- ***Bananas and Plantains***: Bananas (Windward Islands) and plantains (Guyana) continue to be crops of economic importance. Production, however, is currently

seriously devastated by Black Sigatoka Disease (BSD, My*cosphaerella fijiensis Morelet*) and the potential for further loss, through possible invasion of Fusarium Wilt (Panama Disease) caused by *Fusarium oxysporium cubensis* –Tropical Race 4 (TR4), is real. A new Sub-programme for Bananas and Plantains has been introduced to deal with the management of these diseases.

- ***Coconuts***: There are efforts underway to revive the coconut industry in the Region. Following the successful CTA-sponsored and CARDI-executed Coconut Workshop during the Caribbean Week of Agriculture 2013 in Guyana, efforts have intensified to seek external resources for the revival. The major focus areas for the revival include new germplasm, plantation management, disease management and value added products, including commodities from the entire plans. CARDI can contribute to the effort in the areas of improved agronomic practices, new germplasm multiplication and disease management. Hence, the inclusion of Coconuts as a Sub-programme in the MTP 2014-2016.
- ***Value Chains***: Agricultural Value Chains (VC) are recognised as the most comprehensive mechanism for involving all relevant actors in the development of commodity industries. During the implementation of the MTP, 2011-2013, two VC projects were executed but as activities under different Sub-programmes. In recognition of the importance of this Emerging Area, a Sub-programme is created for it in the MTP 2014-2016.
- ***ICTs***: ICTs are becoming a companion to VC. Again, in recognition of the potential of ICTs as an invaluable tool in the development of VCs a Sub-programme has been designed for them.
- ***Sustainable Intensification***: According to The Montpellier Panel, 2013[7], Sustainable Intensification (SI) offers a practical pathway towards the goal of producing more food with less impact on the environment and intensifying food production while ensuring the natural resource base on which agriculture depends is sustained, and indeed improved, for future generations. Therefore, CARDI has included SI in its work programme so that the technology could be appropriately evaluated in the Region.

[7] The Montpellier Panel, 2013, Sustainable Intensification: A New Paradigm for African Agriculture, London

- ***Regional Sensitisation and Planning Workshops***: In the last two MTPs, Planning Workshops and other workshops were conducted under various Programmes/ Sub-programmes. In order to improve the efficiency and documentation of these workshops they would be consolidated in a Sub-programme under the Programme, Technical Systems and Services.
- ***Internal Revenue Generation***: Internal revenue generation has been given greater prominence in MTP 2014-2016 and is now a new programme. Field Station Revenue is a Sub-programme which would integrate the revenue from the sale of produce from research activities with gross revenue from dedicated activities in selected Country Units.
- **Administration and Operations:** Three new Sub-programmes have been created for the Programme, Administration and Operations with the view to give more focus to financial policy and administration, as well as the regular office and administration efforts. The three Sub-programmes are: Financial Policy, Financial Administration and Operations

2.2 Strategic Axis 1: Development of Sustainable Industries

Strategic Axis 1, Development of Sustainable Industries, defines the Institute's core mandate. The SA comprises two Focal Areas, viz. (1) "*Science, Technology and Innovation*" and (2) "*Natural Resource Management*". There is one Priority Area, "*Knowledge Generation, Diffusion and Application*" under Focal Area 1 and two Priority Areas, "*Risk Management*" and "*Soil and Water Management*" under Focal Area 2. These are shown in **Table 1**, together with the constituent Programmes (12) and Sub-programmes (34), as well as the Institutional Expected Results expected to be achieved from the execution of the Activities/ Priority Actions under these Programmes/ Sub-programmes.

Therefore, in this Section only the salient features of Strategic Axis 1 in the **Table** are highlighted.

Under the Focal Area, *Science, Technology and Innovation*, there is a common thread for the Institutional Expected Results (IER) for the Programmes Commodity Development - Crops and Livestock (inclusive of Feeds and Feeding Systems and Animal Genetic Resource) – and

Protected Agriculture Systems Development (See Table 1). These can be summarised as follows:

2.2.1 Focal Area: Science, Technology and Innovation

2.2.1.1 Priority Area: Knowledge Generation, Diffusion and Application

Programmes/ Sub-programmes:

1. ***Commodity Development – Crops/ Roots and Tubers/ Cereals and Grain Legume/ Hot Pepper/ Bananas and Plantains/ Coconuts/ Fruits and Vegetables***
2. ***Commodity Development – Livestock/ Small Ruminants***
3. ***Protected Agriculture/ Protected Agriculture Systems Development***

All these share common IERs as follows:

- Increased productivity and production from validated/ demonstrated and economic technologies
- 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 value chain through capacity building programmes in production, post-harvest and value addition

The following Programmes/ Sub-programmes also share the common IERs shown below.

1. ***Commodity Development – Crops/ Roots and Tubers/ Hot Pepper/ Coconuts/ Fruits and Vegetables***
2. ***Commodity Development – Livestock/ Small Ruminants***
   - Value added products enhancements and marketability through the identification/ selection of suitable varieties/ breeds and relevant post-harvest technologies

1. ***Commodity Development – Crops/ Roots and Tubers/ Cereals and Grain Legume/ Hot Pepper/ Bananas and Plantains/ Coconuts/ Fruits and Vegetables***
2. ***Germplasm/Animal Genetic Resource***
   - Availability of quality seeds, disease-free planting material and improved breeding stock to facilitate higher productivity

The Technical Systems and Services Programme represent an important avenue through the provision of a wide variety of support to the Units in the execution of the technical programmes. The focus on commodity development and germplasm transfer calls for a critical role to be played by the laboratory in Barbados as a regional certifying body. This will receive increased consideration in the current MTP. The constituent Sub-programmes and the IERs emanating from them are as presented below.

2.2.1 Focal Area: Science, Technology and Innovation

2.2.1.1 Priority Area: Knowledge Generation, Diffusion and Application

Programme: Technical Systems and Services

Sub-programmes and IERs:

1. ***Information and Communication***
   - Better access to information on the Institute's priority areas through appropriate hardware, software and processes
2. ***Marketing***
   - Enhanced market and trade oriented production systems determined through market information and analysis
3. ***Biometrics***
   - Higher scientific rigour in the design, analysis and reporting of the technical programme of CARDI and selected stakeholders
4. ***R for D Coordination***
   - Technical support and liaison services available to Country Units
5. ***Regional Sensitisation and Planning Workshops***
   - At least one regional sensitization and planning workshop per year

The second Focal Area of SA 1, *Natural Resource Management*, deals with the environmental/climatic context (limitations, constraints and opportunities) within which efficient regional agricultural production and productivity must occur. There are two Priority Areas embedded in this Focal Area, each with two Programmes. These Programmes and the supporting Sub-programmes and IERs follow.

2.2.2 Focal Area: Natural Resource Management

2.2.2.1 Priority Area: Risk Management

1. Programme: Invasive Species Management

Sub-programmes and IERs:

1. Control

- Knowledgeable/ informed population on threats of Invasive Species through information dissemination

2. Coordination of Approach

- Protocols and processes for identification and mitigating effect of Invasive Species
- Invasive Species networks and early warning and management systems

2. Programme: Climate Change for Agriculture Development

Sub-programmes and IERs:

1. Adaptation

- Varieties of commodities (important for regional FNS) adapted to climate change variability identified
- Relationship(s) between knowledge of climate change factors through models and modelling facilitated
- Adequate supplies of seeds and seedlings of landraces of staple food crops available in Banks

2. Mitigation

- Climate smart systems evaluated

3. Capacity/ Knowledge/ Information

- Knowledgeable/ informed stakeholders on threats of climate change through capacity building and information dissemination

2.2.2 Focal Area: Natural Resource Management

2.2.2.2 Priority Area: Soil and Water Management

1. Programme: Soil Management

Sub-programmes and IERs:

1. ***Soil Rejuvenation***
    - Productive capacity of degraded soils in the Caribbean, including mined-out soils in Jamaica, enhanced
2. ***Soil Conservation***
    - Soil conservation techniques extended to the wider farming community in the Caribbean

2. Programme: Water Management

Sub-programmes and IERs:

1. ***Water Harvesting, Distribution and Use***
    - Water harvesting technology, distribution and use extended to the wider farming community in the Caribbean
2. ***Soil Water Enhancement***
    - Soil water enhancement technologies developed for use by Caribbean farmers

2.3 Strategic Axis 2: Development of Strategic Linkages

This SA recognises the importance of CARDI's relationships with other Institutes, its stakeholders and the general public. The mobilisation of resources from a donor is a component of SA 3, but SA 2 is the prime mechanism to establish and maintain contact with Partners who can contribute or, complement and/or add value to CARDI's work programme. This SA also ensures that CARDI's visibility and positive image are maintained and/or enhanced.

There are two Focal Areas, "Partnerships and Collaborative *Linkages" and "Advocacy*".

2.3.1 Focal Area: Partnerships and Collaborative Linkages

This Focal Area ensures strong and appropriate partnerships between CARDI and relevant national, regional and international agencies with a common interest in agricultural R for D in the Caribbean.

Investments in R for D in the Region are limited by the resources available. Therefore, Institutes must seek partnerships to allow the required and requested work programmes to be executed. These partnerships, regional and extra regional, aim to ensure that work efforts are synergistic

and complementary and do not overlap. In the Caribbean, this is particularly critical with the limited available resources - human, technical, physical and financial.

2.3.1.1 Priority Area: Build and maintain relationships

This is the Priority Area within Focal Area 2.3.1 and has three programmes

1. Programme: Regional R for D strategies

CARDI is currently the chair of the Regional Agriculture Cluster which brings together all of the regional organisations working in agriculture. This includes farmer and agribusiness entities as well as tertiary training schools, resource providers, and R for D Institutes. The Cluster has a "Technical Working Group (TWG)" of Institutes whose primary focus is agriculture, as opposed to Institutes in areas, such as, environment and fisheries whose agriculture focus may be considered secondary. This TWG includes international Institutes, such as, FAO and IICA which, although headquartered outside of the Region, have a technical presence in CARICOM territories. At the beginning of 2014, the TWG agreed to a structure encompassing monthly meetings and focusing on a few selected high priority commodities.

CARDI has developed a regional strategy for coordination of R for D which has been noted by the Ministers of Agriculture at COTED (CARICOM Ministerial Council for Trade and Economic Development), and which will be operationalised via the Cluster and the inclusion of national partners.

Many important international entities are recognising CARDI's role as a potential focal point for integration and coordination of programmes, especially those which require R for D. These entities are also recognising CARDI's position at the forefront of emerging issues, such as, Value Chains, Climate Change, Protected Agriculture and ICTs.

Sub-programmes and IERs

1. ***Development of R for D strategies***
    - *A regional R for D strategy being promoted*
2. ***Coordination of initiatives to achieve strategies***
    - *An integrated plan of action (including key actors) that is operational*

2. Programme: Relationships with key institutions and partners

Over the 2011-2013 Medium Term Plan, CARDI identified a significant number of new Partners, many of whom made very important contributions to the work programme under that Plan. In addition to this, relationships continued with partners whom CARDI has been working with for a number of years. The number of partnerships is too numerous to list here but suffice to say that more than 20 useful partnerships are be identified. These Partners belong to both public and private sectors and include NGOs.

During 2014-2016, these partnerships will be kept alive and new partnerships will be identified. There will be some emphasis on new and strengthened partners within the CGIAR system.

Sub-programmes and IERs

1. **Implementation of actions in current relationships**
    - Significant contributions to the work programme under at least six MoUs
2. **Development of new relationships**
    - At least three new MOUs or renewal of old MOUs

3. Programme: Membership base for CARDI

The Agreement Establishing CARDI was signed in December 1974 by the Ministers of Agriculture of the then 12 Member Countries of CARICOM. The Agreement clearly specifies how a Member can leave, but is silent on new members joining. However, CARICOM has added new members and Associate Members from time to time and most of these have expressed some level of interest in joining CARDI. The CARICOM Secretariat has now established a protocol for new members to join CARDI. This protocol is being used for the Cayman Islands (a territory of the United Kingdom) and Suriname to become in 2014 the first new additional member of CARDI since its establishment in 1974. During the 2014-2016 MTP efforts will continue to facilitate other CARICOM Member States, such as, Bahamas to become members of CARICOM.

Sub-programme and IER

1. Membership base of CARDI

- At least one other CARICOM territory becomes a member of CARDI.

2.3.2 Focal Area: Advocacy

No matter how successful CARDI's R for D programmes are, if the results of these programmes are not communicated, CARDI's work will not be recognised as very effective and/or meaningful. This constraint will continue to be effectively overcome in the Priority Area, Promotion of CARDI.

2.3.2.1 Priority Area: Promotion of CARDI

This Priority Area has one Programme.

1. Programme: Promotion of CARDI

This Programme is very wide ranging and extends beyond the direct promotion of the Institute and its work. Agriculture, in the Caribbean and elsewhere, has changed and this "New" agriculture is being promoted to the public, some of whom may not understand the role of and function of the industry and many are not aware of the new innovations necessary to ensure a reasonable level of Food Sovereignty.

Besides the general public, there is also need to target the policy makers. The main policy makers at Government level include those from outside of the agricultural sector, e.g Education, Finance, Health, Tourism and Trade. These sectors have vitally important links with agriculture and it is recognised that the development/repositioning of agriculture is holistic and multi-sectoral. In this regard, awareness must include all of them.

For the general public, there is now a plethora of information media – new and traditional – none of which singly command the attention of everybody. CARDI's Advocacy Strategy will continue to include all avenues of communication. Therefore, public access to information emanating from the CARDI work programme, is a very important aspect of promotion.

This Programme also encompasses internal communication. This includes communication channels between staff and also making available to staff information to help plan and execute activities in SA 1 and 3.

Sub-programmes and IERs

1. ***Branding CARDI as preferred R&D institution in CARICOM:***
    - "New" agriculture promoted
        - Policy
        - Advocacy
    - Communications and Outreach Strategy operational
        - Traditional and New Media
        - Exhibitions
        - Open Days/Field Days
    - Electronic media actively managed
    - Documents for public awareness (Annual Reports, Ministerial Updates etc.) available

2.4 Strategic Axis 3: Institutional Strengthening

This SA aims to provide the Institute with the technical, financial, physical and administrative capacity to efficiently manage the achievement of the IERs in SAs 1 and 3. It also makes opportunity for improving the human capacity of its clients and as necessary, some of its Strategic Partners.

There are two Focal Areas – *Resource Mobilisation and Management* and *Capacity Building*. There is one Priority Area, and four Priority Areas within the first and second Focal Areas, respectively.

2.4.1 Focal Area: Resource Mobilisation and Management

The goal of the Focal Area is *'to procure 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 two Programmes and five sub-programmes as follows*:*

2.4.1.1 Priority Area: Income Generation

Programme 1

Donor/Resource Agency Mobilisation

Sub-programmes

- *Proposal Development and Management*
- *Implementation*
- *Monitoring and Evaluation*

Programme 2

Internal Revenue Generation

Sub-programmes

- Technical Assistance/Consultancy Services
- *Field Station Revenue*

Programme 1: Donor/Resource Agency Mobilisation

Sub-Programmes and IERs

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

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 to the accomplishment of regional food and nutrition security.

Increasing global trends dictate that proposals strategically include a portfolio of key themes including food security and nutrition, capacity building, climate resilience/environment, gender and youth, poverty alleviation, public and private sector partnerships (at global, interregional and intra-regional levels). Additionally that these themes translate to the formulation of effective policy. Within this context, the sub-programme will produce proposals through collective/team approaches in order to take advantage of the diverse in-house expertise where possible strategic public/private sector partnerships. In particular, the continued collaboration with regional entities, specifically the CARICOM Secretariat, will continue to be a major focus for the Institute.

The IER for this sub-programme is 'At least EC$40.0M mobilised by 2016'

Implementation

In order to ensure the effective, efficient and timely utilisation of obtained external resources, a Project Implementation Unit (PIU) has been established. The PIU has addressed the processes and procedures for implementation (including procurement, administration and report oversight).

The IER is 'A functional PIU with all the procedures and guidelines for project implementation fully operational'

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. Moreover that these systems would be compatible with external monitoring and evaluation requirements,

such as, the 6 Pillar Test. Subject to available financial resources, an Internal Auditor will be appointed.

The IER of this Sub-programme is 'Effective and efficient monitoring and evaluation systems'.

Programme 2: Internal Revenue Generation

The main aim of this Programme is the provision of services (including training, knowledge diffusion, partnership sustainability and linkages) to obtain urgently needed finances which will help the Institute to successfully carry out its mandate. Within this context, activities within the programme include workshop management, etc. The principal functions of this Programme are conducted within two sub-programmes which follow:

Sub-programmes and IERs

Technical Assistance/Consultancy Services

There are two dimensions to this sub-programme; 'Technical Assistance' which speaks to the delivery of advisory/support services for which financial reporting, in accordance with specified budget lines, is required along with the submission of technical reports/deliverables. The second (Consultancy services) attract 'lump sum' allocations for which outputs/deliverables are required but no financial reports. The former will be projected to attract a limited administrative fee while the latter is a straight income generation activity that accompanies the delivery of services. In addition, with its competence as a research and development leader in the sector, the Institute will increasingly engage Ministries and their relative Public Sector Investment Programmes (PSIP) for the delivery of technical assistance.

The Institute will also explore all options for providing Consultancy Services at negotiated prices.

The IER of the Sub-programme is:

- The successful execution of at least six events earning administrative fees of at least EC$32.0M

Field Station Revenue

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 revolving funds originally 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 least in a preliminary manner) which of the technologies developed by the Institute can be "scaled up" by agriculture-entrepreneurs.

In addition, the field station activities will also seek to include the commercial assessment of the efficacy of pesticides. This activity will provide an invaluable service to input suppliers as well as to primary producers.

The IERs for this sub-programme are:

- Product sales (research by-products) valued at least EC$0.1M
- Adequate gross revenue generated of approximately EC$ 0.8M
- Internal Revenue Generation Unit operational

2.4.2: Capacity Building

2.4.2.1: Priority Area 1: Human Resource Development

There are four Priority Areas viz Human Resource Development, Physical Resources, Documentary Resources and Financial Resources. The description of same follows.

Programme 1: Human Resource Capacity Building

Human Resource Capacity building continues to assess the skills needed for the Institute during 2014-2016. There are four Sub-programmes – Train staff, Stakeholders and clients, Leadership/Succession Planning, Thematic Commodity Teams and Centres of Excellence. In this regard, the Institute continues to try and attract the best suited skills to fill current and

anticipated functional needs at Headquarters and Country Units. At the same time, persons within the Institute with appropriate aptitude and skills needed to be trained so as to assume more technical and managerial responsibility.

In manifestation of its pillar, Working Together, the Institute continues to include in its training activities its stakeholders and partners. This continues to be a major area of focus for CARDI. There will be continued adaptation of the 'train the trainers' approach to technology transfer, for example, as this is embodied in the general philosophy of the 'farmer field school' concept. In addition, its relationships with the various universities will be strengthened and so interns and on-the-job trainees will form part of our transfer of knowledge to young technicians and professionals interested in the field of agriculture.

As the primary Institute in the Region for Research for Development in Agriculture the following will be continued:

- Accommodate and facilitate short term attachments of staff and of CARDI and its partners and stakeholders, to Universities and specialised AR4D institutions;

- Expose on a continuous basis administrative and technical staff to the relevant workshops, seminars and specialised short courses; so as to improve their technical management and leadership skills. This will allow for improvement in the conduct of meetings, workshops, seminars and public lectures.

CARDI has continued its relationships with the Universities of the West Indies, Florida and Wageningen. However, it is expected that CARDI will continue to expand to other universities in the area of undergraduate internships and in this regard, we would look at developing closer relations with other universities such as the University of Guyana, University of Technology, Jamaica and the University of Trinidad and Tobago.

CARDI will continue to recognise the outstanding student of the CSEC/CXC exam in the area of agriculture and would also look at recognizing the top CAPE student as well. In addition, at the country level, the Institute will seek to 'adopt' a secondary school to (a) facilitate increased exposure to the "new" agriculture and agricultural research, in particular the work of CARDI; and (b) to introduce young minds to sectoral dynamics and processes.

In the area of training tools used during the Institute's training initiatives will be made available to its partners and stakeholders.

The IERs for this Sub-programme are:

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. Training programme (with appropriate tools) for CARDI staff and stakeholders available
3. CARDI Succession Plan operational
4. At least three thematic and three commodity teams functional
5. At least two thematic and three commodity virtual Centres of Excellence operational
6. An updated and approved Human Resource Manual available
7. Performance management and assessment system operational
8. Awards system operational

Under the area of re-branding human capacity and talent management – this programme will include the continued management of the staff performance and development, the continuous review and revision of the Human Resource Manual as well as the integration of the Institute's Core Values to be in line with the three pillars of the MTP of - bottom-up/client-led; working together and accountability and transparency.

The Human Resource Manual and the new and revised policies will be made available to all staff. Continuous assessment of staff will be done via the implemented performance appraisal/management system. This tool will also be used as a guide to annually award staff whose performance have been outstanding for the period via the Chairman's Award.

2.4.2.2: Priority Area 2: Physical Resources

In the area of physical resources, the management and maintenance of the assets of the Institute are important. In this regard, CARDI will seek to ensure ownership of those buildings/stations

occupied by CARDI - legally accredited to it; that maintenance and upkeep are done on a regular basis.

2.4.2.3: Priority Area 3: Documentary Resources

Administration of Registry Services - A new system has been implemented in the areas of Services, more particularly related to Registry. This system of filing is in line with the MTP and its Strategic Axes. It has started out as a pilot project at HQ and will be rolled out to other offices as a pilot project in the first instance, prior to being incorporated into the Institute's new system of filing at HQ and its Country Units.

2.4.2.4: Priority Area 4: Financial Resources

During the MTP 2011 to 2013, CARDI made a significant investment in its Financial Management Information System (FMIS). The core of the FMIS is the accounting software Dynamics SL, which was "rolled out" to all CARDI countries during the period. The "roll out" linked all CARDI Units to a central accounting database. It afforded Country accounting and cheque printing facilities and the opportunity to have available real time, online financial information for all Units.

The full benefits of this accounting software has not yet been maximised as there are still some training, documentation and human re-engineering to be completed.

Some of these potential benefits are:

i) Up to date financial reports for decision making;
ii) Financial information being accessed directly by non-accounting personnel;
iii) Customised reports for externally funded projects;
iv) Updated internal controls and supportive systems (including Accounting Manual); and
v) Enhanced cash management information.

The efficiencies that the new accounting system affords will be realised during the early part of this MTP. This will be achieved through more focussed staff training and completion of the documentation of systems and procedures. To maximise the benefits of the FMIS, an active collaborative network of users will be initiated and supported.

With a shortfall in Core funding relative to expenses, there is a critical need for the Institute to

access additional resources. The link between strong and efficient financial management and the ability to attract resources through the management of externally funded projects has been established. This presents CARDI with an opportunity to earn income, to supplement Core, by demonstrating robust financial systems, controls and reporting. The "Six Pillar" test is therefore a target to be achieved in the first year of this MTP.

This Priority Area has three Programmes as follows:

Programme 1: Administration and Operations

The objective of this programme is to ensure that there is a communicated framework, procedures and controls that will guide the conduct of transactions and support operations, ensuring the accuracy and completeness of all tasks.

This will be achieved through the following three Sub-programmes:

i. ***Financial Policy*** – This sub-programme focuses on documentation of procedures and processes by updating the Accounting Manual. This will also include the formal addition to the manual of systems and controls developed since the Manual was last revised.

   The IERs for this Sub-programme are:

   - Revised Financial Manual available;
   - Salaries and wages system/policies/guidelines implemented; and
   - Supportive administrative process available for the delivery tasks/functions of/within the Work Programme.

ii. ***Financial Administration*** – This Sub-programme focuses on policy relating to emoluments and statutory obligations and supporting documentation for transactions. These have become critical in reporting in particular on External Resources. This Section will also encompass budgets as part of the administrative process.

The IER for this Sub-programme is:

- Administration of salaries, wages, etc. effected in a timely and legal fashion.

iii. ***Operations*** – This Sub-programme focuses on procurement policies as it relates to the Institute and Co-operative partners in the conduct of transactions. It focuses on the documentation, adherence to and communication of procurement guidelines.

The Expected Result for this Sub-programme is:

- Operations conducted effectively and efficiently.

Programme 2: Core and External Resource Management

The objective of this Programme is to capture and properly record the Institute's financial and related transactions. Also covered are treasury management and the procurement, recording and custody of Fixed Assets.
This will be achieved through the following three sub-programmes:

i. ***Accounting Database Management –***

The IER for this Sub-programme is:

- Timeliness and availability of financial information for decision making and reporting to all stakeholders.

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 its returns and service its needs

The IER 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 IER for this Sub-programme is:

- A Fixed Asset Register available.

Programme 3: Reports to Stakeholders/Agencies etc.

The objective of this Programme is to account to all stakeholders for the use and custody of resources under the control of the Institute. Therefore, it covers the provision of audit, other financial and management reports as well as supporting and /or complementary technical reports

This will achieved through one sub-programme as follows:

i. ***Audit, Financial Technical Reports*** –

The IERs for this Sub-programme are:

- The availability of Annual Audited Financial Accounts no later than three months after the end of the year; and
- The availability of quarterly management accounts no later than 15 days after the end of the previous month and donor financial reports no later than two months after termination of individual projects.`

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 Implementation Plan (IP) builds on the initiatives of the previous MTPs (2008-2010) and (2011 - 2013). Within these periods, 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. That is, a total team approach – within the Institute and between the Institute and all other actors in the agricultural and rural communities – is totally critical. On the side of the Institute, it made major efforts to better understand its internal and external clients, thus enhancing the chances of success. The start of this MTP coincides with the dip in financial fortunes of a number of the Member States of the Institute. Consequently, during this current period, accessing of external financial resources and the generation of revenue are even more important and critical to the Institute (as many other similar entities) being able to fulfil its ever increasing mandate.

In the above context, it is noteworthy that the access to and use of Donor funds have shown significant change over the last three years particularly. Firstly, Institutes, such as, CARDI, have become subject to greater due diligence with respect to their ability to effectively and efficiently manage Donors' financial resources. Secondly, there is more importance on the result(s) emanating from the use of the resources; that is, outputs must lead to impact and outcomes.

Accordingly, the Institute's external and internal strategies are aimed to both reflect this new paradigm and accelerate the rate of success. These strategies will be pursued as follows:

- The promotion of team work (intra and extra – CARDI), collaborative initiatives, networking, and industry evaluation systems following that for ASTI
- Donor/Resource Agency Mobilisation
- Internal Revenue Generation
- Financial and Asset Management
- Organisational Structure and Management Systems

- Human Resource Development and Management
- Continuous and Intensive Performance Monitoring and Evaluation

1.1 Strategic Considerations

In the previous MTPs, the Institute positioned itself to (i) obtain significant quantities of external (financial and human) resources; (ii) build capacity; and (iii) expand and strengthen partnerships as principal prerequisites for the generation, diffusion and application of knowledge. These will be strengthened/consolidated in this MTP. Further, they will be used as a platform from which the Institute can intensify its "scale up" activities and thus contribute to the conversion of the technology and results it has developed to full commercial levels. This will facilitate the adoption of its technologies to enable the "improvement of lives through agricultural research" and give further credence to its change in approach from R and D to R for D. 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 Strategy is the creation and promotion of an efficient, effective and self-sustainable CARDI, that positions itself to

a) be a regional clearing house (broker) and Centre of Excellence for the generation, diffusion and application of knowledge along the appropriate components of the Value Chains; and

b) utilise to the fullest extent possible all of the human, technological and physical resources available to it.

To achieve this position, the Institute will:

1. Continue to refine its consultation process to:
   (a) clearly prioritise the sustainable development needs of Member States, singly and collectively; and

(b) determine the requirements of selected industries (using the list of commodities agreed to by COTED) and selected enterprises (primarily SMEs) to contribute to their sustainability

2. Develop Thematic and Commodity teams working within virtual Centres of Excellence so as to make available a critical mass of knowledge to the Region
3. Prepare and utilise traditional and new media and technologies, including ICTs, so as to disseminate compendia of research for development activities and results for the Commodities and Thematic Areas in which it works
4. Strengthen its philosophy of staff excellence and development; leadership through training and external (attachments, meetings, sabbaticals) and internal (all inclusive by making use of Web2tools) exposure

The Internal mechanisms that will be introduced, emphasised and/or refined to facilitate the above will include:

- Meetings
    - Unit: Monthly
    - Institution: mid-year and annual meetings, generally using Web2tools.
- Reports

  Institutional: quarterly and annual, supported by Aide Memoires and, Technical Manuals
- Seminars and Workshops

  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 human, physical, technical and financial levels. At the functional level, this will include Internal Audits.

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 partners within the public and private sectors. This will "give life" to the pillar "*Working Together*" and allow for the sharing of information, human, technical, physical and financial resources within the framework of SA 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 in the Region to the productivity levels that guarantee projected levels of food and nutrition security. Therefore, the Institute will continue to pursue a deliberate strategy of *Working Together*: building partnerships and alliances with national, regional and international organizations to create the critical mass needed for the effective delivery of the required products and services and thus enhance the quality of life in the agricultural and rural sectors.

As such, this External Strategy will at all times highlight the reality that the effective and timely development of agriculture requires a team approach within the sector and between sectors. Further, it recognises that such development is of a nationalistic rather than sectoral nature. Similarly, responsibility is Governmental rather than Ministerial. Indeed, this exemplifies the concept of the Value Chain around which the conduct of the Institute's work programme is premised. (See Figure 6).

Adopting new technologies may not be enough to increase the productivity of agri – entrepreneurs unless the 'Value Chain' for their products is enhanced at the same time. The 'Value Chain' involves the full range of activities required to bring a product to market and includes all the different phases of production, processing, packaging, marketing and delivery to the consumer.

Although CARDI will be only involved in a few components (input supply, production and post harvest handling) of the Value Chain, it must ensure that its research outcomes contribute to improved and diversified Value Chains with improved institutions, policies, business environment, improved market information, and more equitable participation of people. This

should lead to increased production and consumption of food products, and increased income for major agrientreprenures- producers, processors and traders.

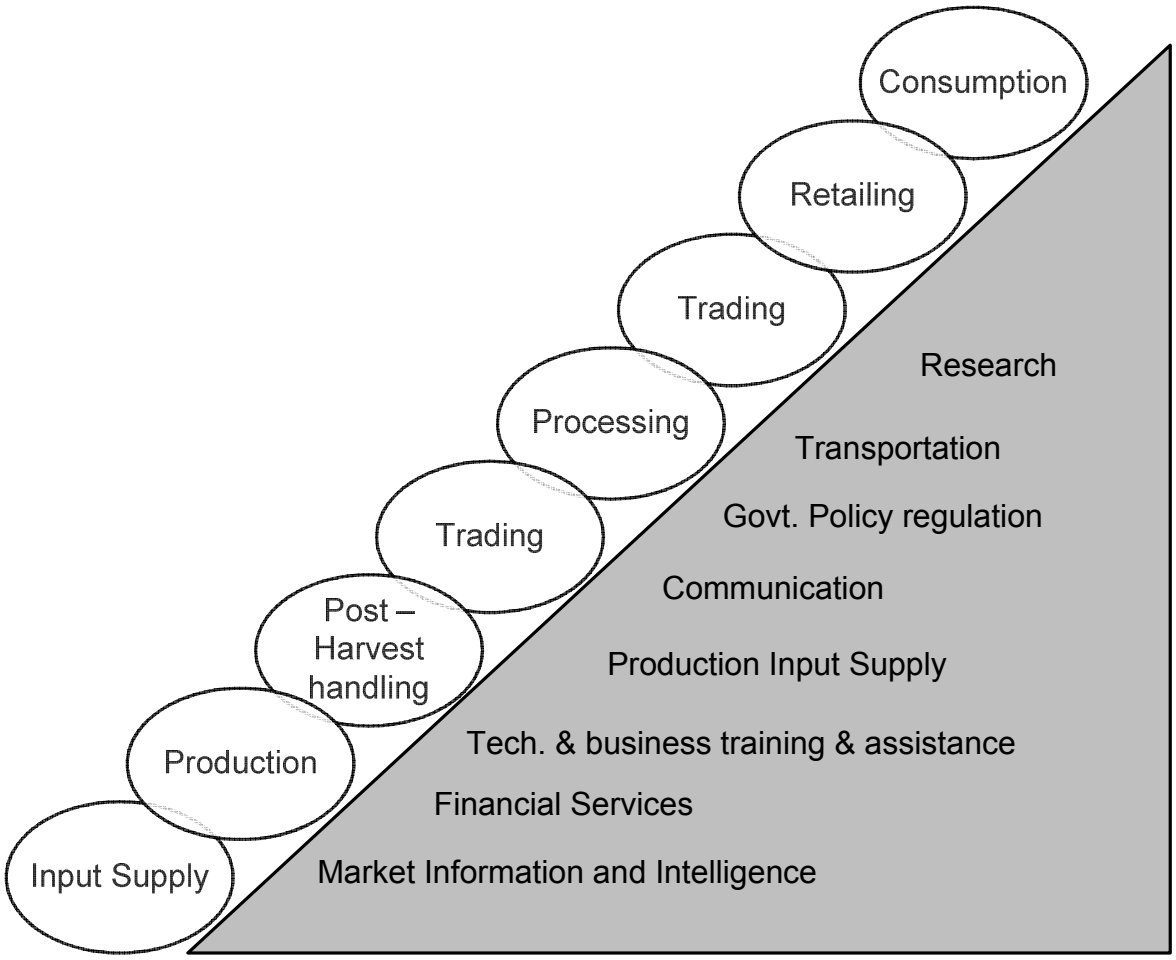


Figure 6: Typical agricultural Value Chain and associated business services

The aforementioned framework will continue to be informed by the ASTI system 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. At

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

At the Regional level, CARDI will continue to actively participate in and, Chair the Agriculture and Nutrition Cluster. The membership of this Cluster, which is endorsed by COTED and the Secretary General of CARICOM, is all embracing and reflects the span of coverage of the sector. However, within this membership is the TWG of public and private entities that are more directly involved with agricultural development.

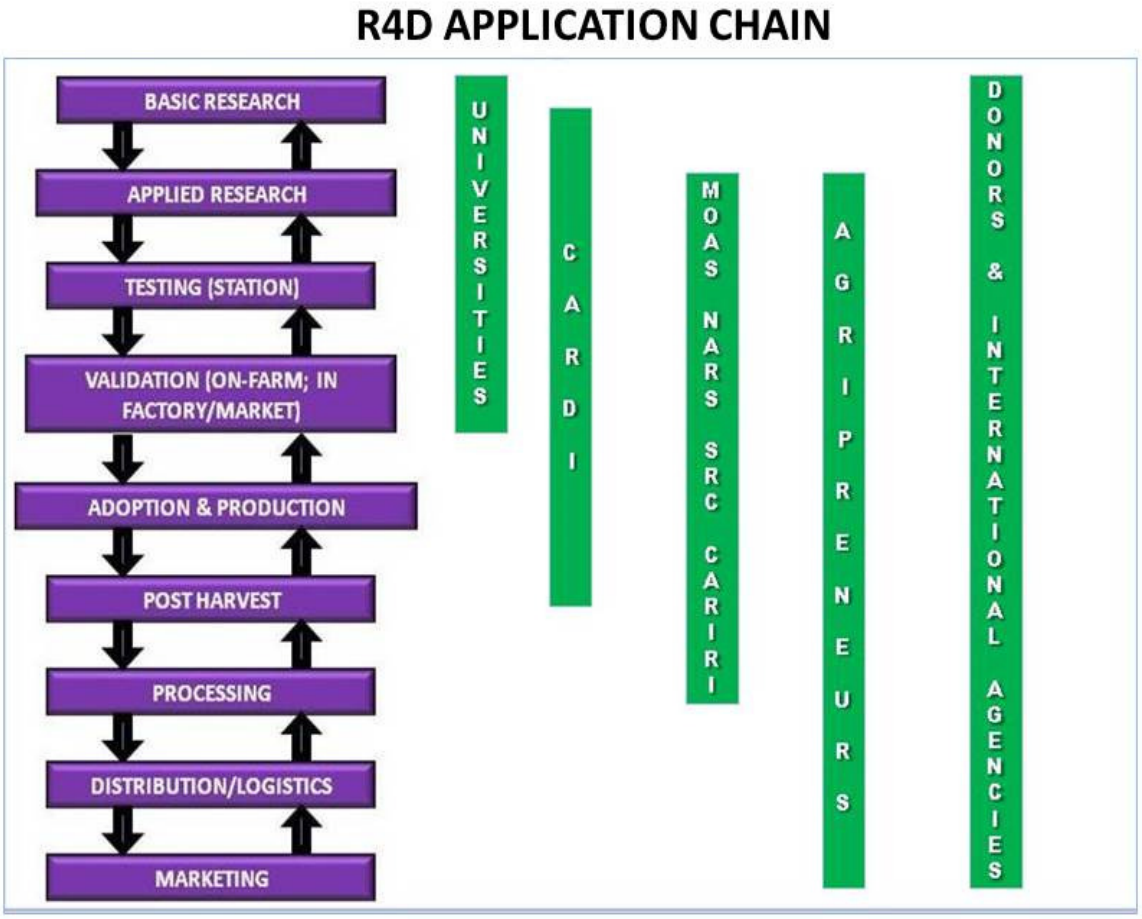
The major objectives are to optimise the support of the various actors within the value chains through:

- Synergy and complementarity of individual institutional work programmes
- Sharing of information
- Maximisation of the benefits accruing from the scarce available resources

The Institute will also continue to play a major role in (i) some of the other CARICOM Institutional Clusters, eg Water and Education, and (ii) the activities of the Technical Management Advisory Committees, especially that for Inadequate Research and Development, that have been established by COTED to oversee the alleviation of the KBCs within the JI.

At the institutional level, CARDI is working with Development Agencies, such as, CTA, FAO and IICA, Universities, e.g., University of Florence, University of Florida (UF),UG, University of Wageningen and UWI and National Research Institutes, such as, National Agriculture Research and Extension Institute (NAREI), Guyana, Scientific Research Council of Jamaica (SRC), Caribbean Industrial Research Institute (CARIRI), National Board for Agricultural and Forestry Research (CONIAF) of the Dominican Republic, Dominican Institute for Agricultural Research and Forestry (IDIAF) and entrepreneurial entities, such as, the Caribbean Farmers' Network (CaFAN) and the Caribbean Agribusiness Association (CABA),

Along with other entities, especially Ministries of Agriculture, these institutional relationships will serve to promote, develop and implement a Research for Development Application Chain on



a commodity-specific basis as is illustrated in Figure 7.

Figure: 7 Research for Development Application Chain

At the hemispheric level, CARDI will consolidate its relationships with the Tropical Agricultural Research and Higher Education Centre (CATIE), Brazilian Agricultural Research Corporation (EMBRAPA) and Honduras Foundation for Agricultural Research (FHIA). It will also strengthen its interactions with the various individual networks (PROCIS) and their umbrella organisations, FORAGRO.

At the global level, CARDI will promote a greater relationship with the CGIAR system.

- Holistically as a potential 'manager' in the Caribbean for the GFAR; and
- With its individual members, CIAT (CLAYUCA), CIMMYT and CIP (within the hemisphere) and IITA and ILRI in Africa

More importantly, CARDI will explore possibilities of being accredited as a CGIAR Centre in the Caribbean as distinct from Latin America and the Caribbean.

Further, it will continue to develop stronger programmes with institutions in African (Forum for Agricultural Research in Africa), Asia (Chinese Academy of Agricultural Sciences and the Indian Council for Agricultural Research) and the Pacific (Secretariat of the Pacific Community).

E. ORGANISATION AND MANAGEMENT

1. Introduction

During the last two MTPs, the Organisation and Management structure changed from one to reflect the Institute's almost totally dependency on CORE contributions from Member States to one in which External Resources dominated. During this current MTP, the structure is further modified so as to better comply with the recent conditions imposed by funding sources for the management of their resources and the impact consequent on the use of same. This revised organisation structure is described in the following sections.

2. Governance of CARDI

The Governance of CARDI is illustrated in Figure 8-

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 CARICOM Secretariat, the Universities of Guyana and the West Indies, together with Observers from the Caribbean Development Bank (CDB), Food and Agriculture Organisation (FAO) and Inter-American Institute for Cooperation on Agriculture (IICA) and Technical Centre for Rural Agriculture (CTA)
iii. The Executive Director: responsible for implementing the mandates and decisions of the Boards of Governors and Directors; is supported by three Committees:- Expected Results Profile, Management and Technical – and supervises three Divisions; Office of the Executive Director, Corporate Services and Technical Services

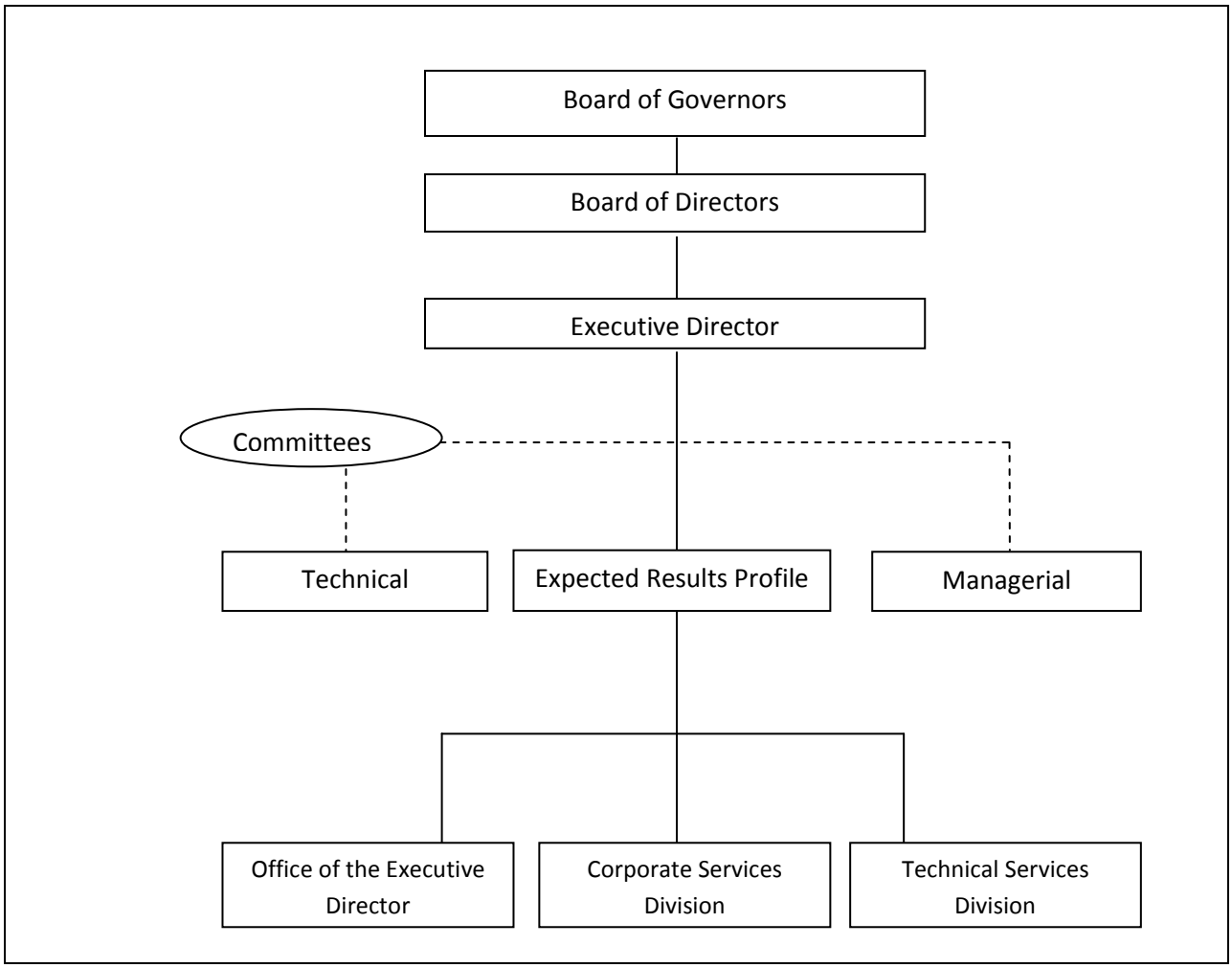


Figure: 8 Governance of CARDI

2.1 Office of the Executive Director (OED)

The OED is managed by the Executive Director with managerial support from three Committees and administrative support from an Executive Assistant. The three Committees are

1. Expected Results Profile – chaired by the Head, Resource Mobilisation and comprised of the Heads of Units with specific responsibility for ensuring that the Institute is organisationally, physically and intellectually prepared for the efficient and timely

implementation of projects especially, but not limited to, those funded by external resources.

2. Management – made up of the Managers of Corporate Services and Technical Services with the Executive Secretary providing administrative support. As needed, other members are co-opted. It oversees the management of the operations of the Institute
3. Technical – chaired by the Technical Services Manager and comprised of the Institute's professional staff. The Committee has the responsibility for ensuring the technical integrity of the Institute's Work Programme.

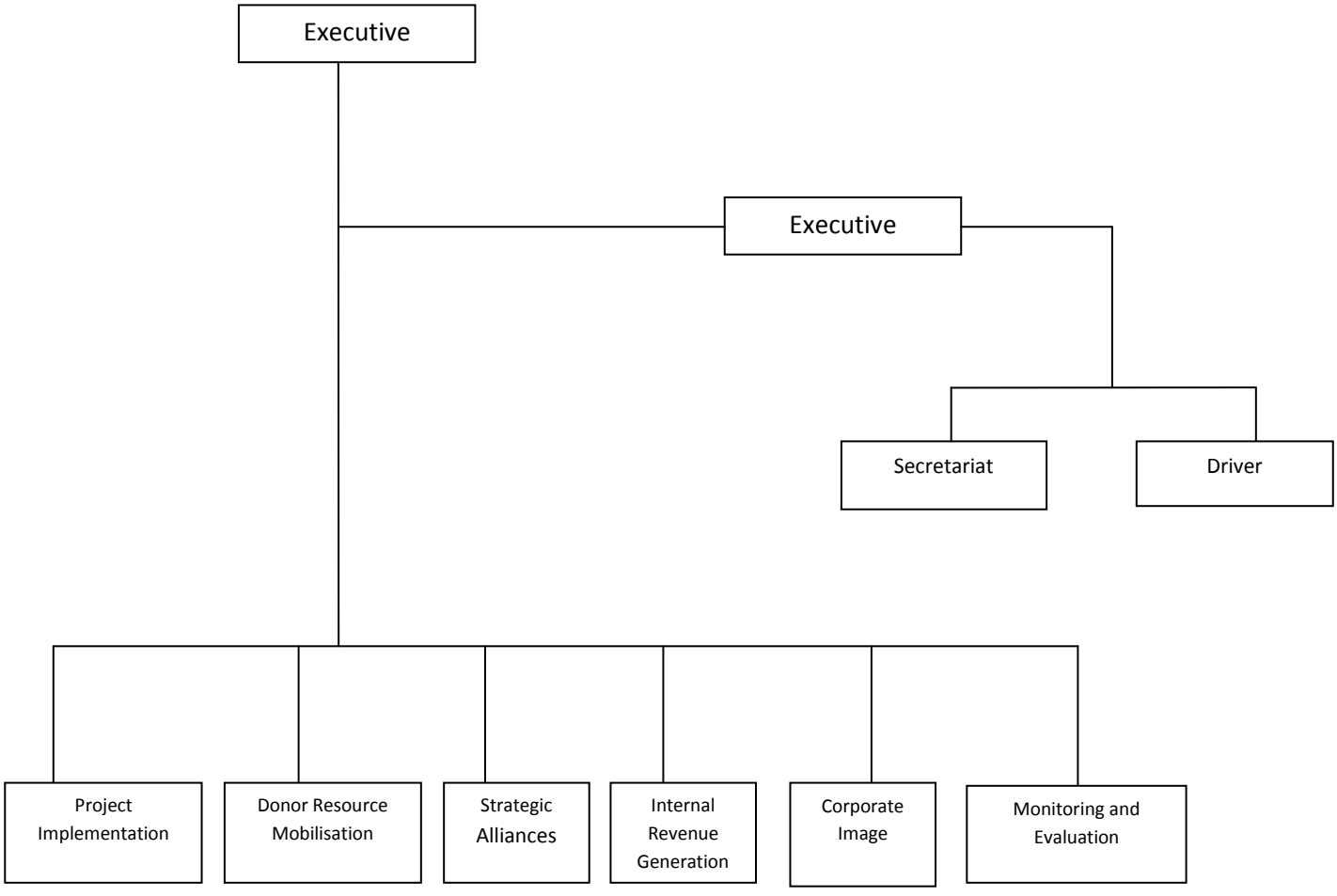


Figure: 9 Structure of the Office of the Executive Director

There are six Units within the Office of the Executive Director (See Figure 9)

1) Project Implementation – responsible for supervising, facilitating and intervening logistically in the implementation of externally funded projects.

2) Resource Mobilisation– responsible for identifying potential opportunities for obtaining external resources and preparing the documentation for successfully accessing these resources.

3) Strategic Alliances – responsible for the development and maintenance of critical relationships that will create, develop and manage mutual benefits.

4) Monitoring and Evaluation – responsible for (a) ongoing monitoring (physical and financial, including internal audit) of the Institute's activities and (b) evaluating impact of pre-agreed selected activities.

5) Corporate Image – responsible for the creation and enhancement of the Institute's image in keeping with CARDI's identification as the singular regional agricultural research and development institute (Revised Treaty of Chaguaramas). This includes maintenance of standards for the Institute's documentation and the conduct of Internal and Public lectures.

6) Internal Revenue Generation – responsible for (a) identifying, documenting and managing under-utilised human, technical and physical resources in order to create opportunities for generating revenue and (b) reviewing the procurement requirements and procedures so as to minimise expenditure levels.

3. Technical Services Division

The Technical Services Division is coordinated by the Technical Services Manager, with support of the Technical Coordinator, OECS.(See Figure 10) There are three 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 OECS sub group of Country Offices

b) Science and Technology Support – comprising the Scientific Officer and the Commodity and Thematic Leaders and is responsible for:

i. Ensuring that CARDI is kept at the "cutting edge" of the methodology, findings etc in the processes for the conduct of science, technology and innovation in relation to agricultural research for development; and

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

c) Technical Support Services – responsible for:

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

ii. Providing support in the following areas: Marketing, Biometrics, Information Technology, and

iii. Providing logistic support and coordination

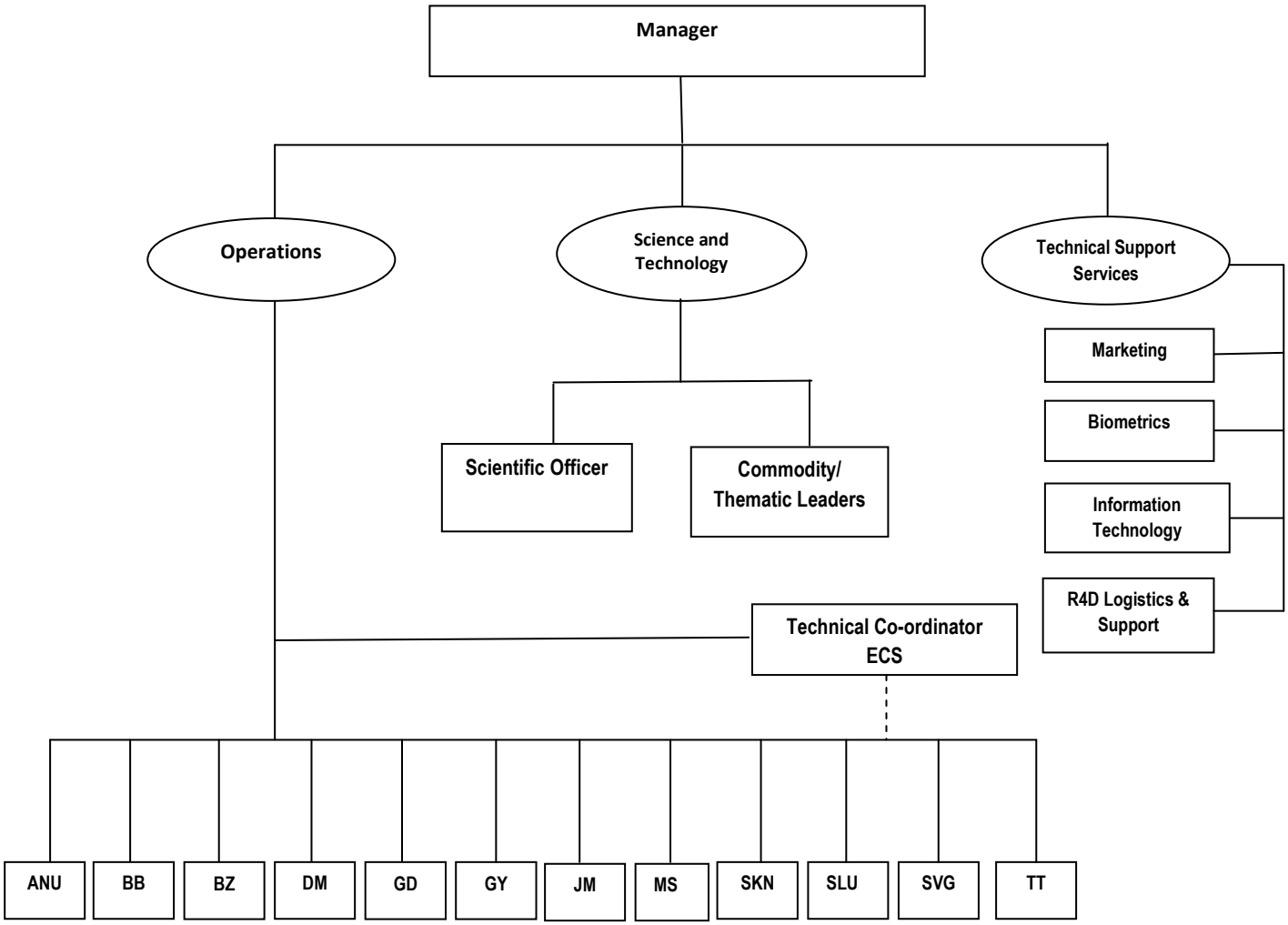


Figure 10: Structure of Technical Services Division

4. Corporate Services

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

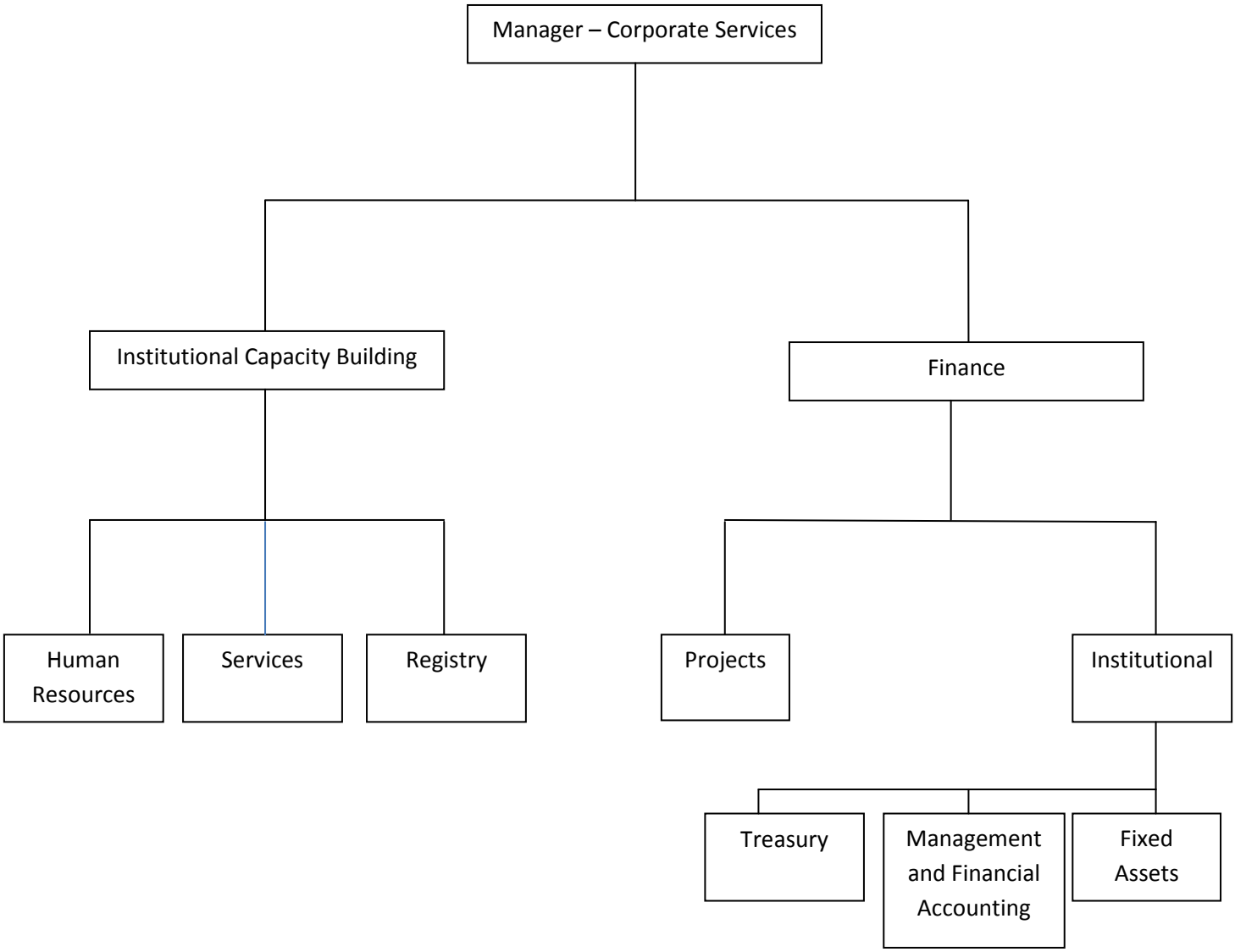


Figure: 11 Structure of Corporate Services Division

a) Institutional Capacity Building – responsible for the:

i. Determination, maintenance and enhancement 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, viz, management and financial accounting, treasury and fixed assets.

5. Financing the MTP

The Income Expenditure Statement for the Medium Term Plan, 2014 to 2016, is presented in Table 2 with supporting information in Annexes 2 and 3. The critical aspects of Core financing during the period of the MTP are that (a) Member Governments would make their contributions (as the approved schedules) in a predictable manner and (b) that arrears of contributions will be paid on a predetermined scheduled. Special attention is drawn to the fact that it is proposed that staff liabilities (arrears since 2004) will be paid in 2015 and further liabilities for the period 2007-2013,(based on negotiations in 2015) will be paid in 2016. The parameters are set out in the assumptions shown in Section 5.1. The budgets show a deficit in core funding for the period of the MTP of $7.69Mn. for which financing has been identified.

5.1 Budget

The budget for the Medium Term Plan, 2014 to 2016, shows a total of $ 53.2Mn in Income and $60.9Mn.in Expenditure for the three-year period. (See Table 2) . There is therefore a core deficit of $7.69Mn.for the period which can be financed through outstanding arrears, advance payments by some Governments and revenue generation from internal efforts.

Table: 2 Summary Income Statement MTP Budget (2014-2016) EC$000's

Medium Term Plan 2014-2016

Budget

EC$000's

	2013	2014	2015	2016	Total
CORE					
Revenue					
Govt Contribution Current	**6,568**	**5,970**	**6,016**	**6,388**	**18,374**
Expenditure					
Personnel costs	**6,047**	**6,429**	**7,102**	**8,028**	**21,559**
Admin expenses	877	1,357	1,199	1,218	3,774
Sub-total - staff/admin.	**6,924**	**7,786**	**8,301**	**9,246**	**25,333**
Operating Core	1,203	363	720	735	1,818
Total Core Expenditure	**8,127**	**8,149**	**9,021**	**9,981**	**27,151**
Net Deficit Core	**(1,559)**	**(2,179)**	**(3,005)**	**(3,593)**	**(8,777)**
Total Other Income	**132**	**716**	**119**	**254**	**1,089**
Net Defict after Other Income	**(1,427)**	**(1,463)**	**(2,886)**	**(3,339)**	**(7,688)**
EXTERNAL					

RESOURCES					
Inflows	5,733	10,674	10,500	12,600	33,774
Total Inflows	**5,733**	**10,674**	**10,500**	**12,600**	**33,774**
Outflows					
Operating	4,786	10,674	8,400	12,180	31,254
Total Outflows	**4,786**	**10,674**	**8,400**	**12,180**	**31,254**
Net Surplus/(Deficit) External Resources	**947**	**0**	**2,100**	**420**	**2,520**
Net Surplus/(Deficit) Core & External Resources	**(480)**	**(1,463)**	**(786)**	**(2,919)**	**(5,168)**
FINANCING OF CORE BUDGET					
Advance Trinidad & Tobago Contributions	480	1,463	856	2,000	4,319
Advance Jamaica Contributions			856	0	856
Payment of staff Liabilities			(712)	(2,621)	(3,333)
Payment of Arrears			1,456	2,621	4,077
Revenue Generation			430	380	810
Management Fees - Project Implementation				700	700
Other - (Guyana arrears)				259	259
Total Inflows	**480**	**1,463**	**2,886**	**3,339**	**7,688**

On average, 63% of the total financing requirements will be provided from External Resources. This source of funding continues to drive the operational efforts of the Institute.

The distribution of expenditure from **core** (which totals EC$27.2Mn over the period) is shown in Table: 3

Table 3: Core Expenditure distribution

Expenditure	**%**
Personnel	79
Administration	14
Operating	7
Total	**100**

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

- Governments of Barbados, Belize, Grenada, Montserrat, St Kitts and Nevis, St Lucia, and Trinidad and Tobago continue to make their contributions as per agreement: Antigua and Barbuda, Dominica, Jamaica and St Vincent and the Grenadines will pay as was experienced in 2013 and 2014, 71%, 18%, 87% and 90%, respectively of their core contributions;
- Conditions for Guyana's re-activation have been re-negotiated but not finalised and their contribution has been included from 2015;
- Cayman Islands has been included from the last quarter of 2014;
- Member states in arrears will pay $4.1Mn (of the total $10.43owing) in arrears over the period to contribute to covering budget deficits and liabilities to staff; (See Table 4)
- Staff salary negotiations (2005 to 2013) to be concluded in 2015 (assumed 15% increase in 2013);
- Internally generated revenue will be at EC$0.3 Mn in 2014, EC$0.4 Mn in 2015 and EC$0.4 Mn in 2016,
- Personnel costs in 2016 reflect a negotiated 15% increase in staff salaries;

5.2 Source of Funds

As shown the sources 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 budgeted quota contributions increased from EC$7.66 Mn per annum in 2014 to EC$8.54Mn in 2015 through the addition of Cayman Islands as well as the re-engagement of Guyana.An average of 91.2% of quota contributions for Medium Term were considered collectable on the basis of the assumptions made above.

Secondly, there is the revenue generation aspect of CARDI's operations. Funds from Revenue Generating Projects are included after the deduction of relevant costs and are therefore net Revenues.

2. External Resources – Of these resources mobilised, EC$33.8Mn is expected to be utilised over the period of the medium term, financing the bulk of the operational work of the Institute.

5.2 Financial Position

The Balance Sheet over the Medium Term shows a fairly stable situation for Non Current Assets as there is minimal investment in Fixed Assests. However through external sources there is some investment in equipment.

Members receiveables decline in line with the proposed payments for staff arrears and budget financing. Total Assets remain at an average of $11.5 Mn.

Liabilities show a slow but steady decrease as more funds are mobilised with time. In particular amounts due to employees and accounts payable are targeted by closer Working Capital Management.

5.3 Financial Overview

CARDI's absorptive capacity for funds mobilised from external sources is directly related to the Institute's ability to secure the budgeted funding from Member Governments. The ability to implement the Work Programme is dependent on its being able to fund the Core costs of the Institute as a critical mass of resources both human and physical are required.

The Institute's viability is therefore dependent on both core and external resources

Table 4: Summarised Balance Sheets (2014 to 2016)

Medium Term Plan
Budgeted Balance Sheets

Medium Term Plan

Budgeted Balance Sheets

For the year ended December 31……..

	2013	2014	2015	2016
Non -current assets	2,176,848	2,050,783	2,095,963	2,130,529
Current Assets	9,721,499	8,989,180	10,220,251	9,401,578
Total Assets	**11,898,347**	**11,039,963**	**12,316,214**	**11,532,107**
Non Current Liabilities	1,145,801	758,846	543,035	347,695
Total Current Liabilities	6,891,106	3,126,975	3,966,079	4,122,438
Total Liabilities	8,036,907	3,885,821	4,509,114	4,470,133
Accumulated Fund	3,861,440	7,154,142	7,807,100	7,061,974
Total Liabilities and Funds	**11,898,347**	**11,039,963**	**12,316,214**	**11,532,107**

ANNEX: 1

DEFINITIONS OF STRATEGIC AXES,
FOCAL AREAS AND PRIORITY AREAS

HIERARCHICAL ELEMENTS OF THE MTP FRAMEWORK	GOAL	OBJECTIVE	EXPECTED RESULTS
STRATEGIC AXIS 1:	Commercially viable commodity	To increase productivity and	• Improved information on key aspects of

HIERARCHICAL ELEMENTS OF THE MTP FRAMEWORK	**GOAL**	**OBJECTIVE**	**EXPECTED RESULTS**
DEVELOPMENT OF SUSTAINABLE INDUSTRIES	based industries	competitiveness of agribusiness enterprises	production and consumer preferences • Increased availability of improved plant and animal genetic resources • Improved food production and post-harvest systems
*<u>FOCAL AREA 1.1</u>***:***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
<u>Priority Area</u>: Knowledge generation, diffusion and application	Technologically sound and innovative agri-food production and post harvest	To promote the awareness and application of modern, innovative and appropriate	• Increased usage of improved production and post harvest technologies amongst agri-food producers

HIERARCHICAL ELEMENTS OF THE MTP FRAMEWORK	**GOAL**	**OBJECTIVE**	**EXPECTED RESULTS**
	systems	techniques within the agri-food sector	
FOCAL AREA 1.2:*NATURAL RESOURCE MANAGEMENT*	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

HIERARCHICAL ELEMENTS OF THE MTP FRAMEWORK	**GOAL**	**OBJECTIVE**	**EXPECTED RESULTS**
STRATEGIC AXIS 2: DEVELOPMENT OF STRATEGIC LINKAGES	Efficient collaborative network of stakeholders, collaborators and strategic partners within the public and private sectors	To establish formalised relationships with stakeholders, collaborators and strategic partners	• MOUs, Contracts project 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	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

HIERARCHICAL ELEMENTS OF THE MTP FRAMEWORK	**GOAL**	**OBJECTIVE**	**EXPECTED RESULTS**
	and private sectors		• 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	• Suitable quantum of resources available and managed for the work programme

HIERARCHICAL ELEMENTS OF THE MTP FRAMEWORK	GOAL	OBJECTIVE	EXPECTED RESULTS
		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: *CAPACITY BUILDING*	A strong organised institution with capable human resources, financial strength and earning capacity	To build a strong competent R&D institution with sufficient resources to carry out its mandate	• Action plan for human 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:	Buildings	To ensure that the	• A comfortable and

HIERARCHICAL ELEMENTS OF THE MTP FRAMEWORK	GOAL	OBJECTIVE	EXPECTED RESULTS
Physical Resources	Maintained in line with good Health and Safety Standards.	aesthetic of the buildings housing CARDI's Units at HQ and Countries are enhanced.	worker friendly environment for staff to work.
Priority Area 3: Documentary Resources	An efficient functioning registry system.	To establish and manage an Institute-wide registry system consistent with the strategic framework	• Efficient storage and retrieval system for institutional documents available
Priority Area 4: 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

HIERARCHICAL ELEMENTS OF THE MTP FRAMEWORK	GOAL	OBJECTIVE	EXPECTED RESULTS
			reports prepared

Medium Term Plan 2014 - 2016

Budget

EC$000's

	%	2013	%	2014	%	2015	%	2016	%	Total
CORE										
Revenue										

Govt Contribution	**Current**	**100**	**6,568**	**100**	**5,970**	**100**	**6,016**	**100**	**6,388**	**100**	**18,374**
Expenditure											
Personnel costs	Professional	39	3,156	41	3,308	39	3,558	41	4,025	40	10,891
Personnel costs	Technical	29	2,375	33	2,671	34	3,019	34	3,426	34	9,116
Personnel costs	Casual	6	516	5	450	6	525	6	577	5	1,552
Sub total - Staff costs		**74**	**6,047**	**79**	**6,429**	**79**	**7,102**	**81**	**8,028**	**79**	**21,559**
Admin expenses		11	877	17	1,357	13	1,199	12	1,218	14	3,774
Sub-total - staff/admin.		**85**	**6,924**	**96**	**7,786**	**92**	**8,301**	**93**	**9,246**	**93**	**25,333**
Operating	Core	15	1,203	4	363	8	720	7	735	7	1,818
Total Core Expenditure		**100**	**8,127**	**100**	**8,149**	**100**	**9,021**	**100**	**9,981**	**100**	**27,151**
Net Deficit Core			**(1,559)**		**(2,179)**		**(3,005)**		**(3,593)**		**(8,777)**
Other Income											
Revenue Generation		100	132	0	0	100	119	100	254	34	373
Management Fees- Caribbean Food Corp.		0	0	100	716	0	0	0	0	66	716
Total Other Income		**100**	**132**	**0**	**716**	**100**	**119**	**100**	**254**	**100**	**1,089**
Net Defict after Other Income			**(1,427)**		**(1,463)**		**(2,886)**		**(3,339)**		**(7,688)**
EXTERNAL RESOURCES											
Inflows		100	5,733	100	10,674	100	10,500	100	12,600	100	33,774
Total Inflows		**100**	**5,733**	**100**	**10,674**	**100**	**10,500**	**100**	**12,600**	**100**	**33,774**
Outflows											
Operating		100	4,786	100	10,674	100	8,400	97	12,180	100	31,254
Total Outflows		**100**	**4,786**	**100**	**10,674**	**100**	**8,400**	**97**	**12,180**	**100**	**31,254**
Net Surplus/(Deficit) External Resources			**947**		**0**		**2,100**		**420**		**2,520**
TOTAL-CORE & EXTERNAL RESOURCES											
Core Revenue		54	6,700	39	6,686	37	6,135	35	6,642	37	19,463
External Resources Inflows		46	5,733	61	10,674	63	10,500	65	12,600	63	33,774
Total Inflows		**100**	**12,433**	**100**	**17,360**	**100**	**16,635**	**100**	**19,242**	**100**	**53,237**
Expenditure/Outflows											
Total Core Expenditure		63	8,127	43	8,149	52	9,021	45	9,981	46	27,151
Operating - External Resources		37	4,786	57	10,674	48	8,400	55	12,180	54	31,254
Total Expenditure/Outflows		**100**	**12,913**	**100**	**18,823**	**100**	**17,421**	**100**	**22,161**	**100**	**58,405**
Net Surplus/(Deficit) Core & External Resources			**(480)**		**(1,463)**		**(786)**	**0**	**(2,919)**		**(5,168)**
FINANCING OF CORE BUDGET											
Advance Trinidad & Tobago Contributions			480		1,463		856		2,000		4,319
Advance Jamaica Contributions							856		0		856
Payment of staff Liabilities							(712)		(2,621)		(3,333)
Payment of Arrears							1,456		2,621		4,077
Revenue Generation							430		380		810
Management Fees - Project Implementation									700		700
Other - (Guyana arrears)									259		259
Total Inflows			**480**		**1,463**		**2,886**		**3,339**	**0**	**7,688**

ANNEX 3

Medium Term Plan
Budgeted Balance Sheets

For the year ended December 31……..

	2013	2014	2015	2016
Non -current assets				

Leasehold Properties	397,895	398,910	378,965	360,017
Buildings	677,887	643,993	611,793	581,203
Equipment	773,020	740,718	777,346	807,611
Motor Vehicles	257,621	193,216	250,216	300,173
Livestock	70,425	73,946	77,643	81,525
Total Non -current assets	2,176,848	2,050,783	2,095,963	2,130,529
Current Assets				
Cash	4,108,886	2,227,380	3,904,817	3,986,767
Fixed Deposits	478,059	501,962	527,060	553,413
Accounts Receivable				
Member Governments	4,535,868	5,796,868	5,419,868	4,563,740
Other	503,808	377,856	283,392	212,544
Pre-paid expenses	94,878	85,114	85,114	85,114
Total Current Assets	9,721,499	8,989,180	10,220,251	9,401,578
Total Assets	**11,898,347**	**11,039,963**	**12,316,214**	**11,532,107**
Non Current Liabilities				
Net long-term liabilities	1,145,801	758,846	543,035	347,695
Total Non Current Liabilities	1,145,801	758,846	543,035	347,695
Current Liabilities				
Bank Overdraft	22,134	652,174	652,174	652,174
Accounts Payable & Accrued Liabilities	1,775,226	1,331,420	998,565	748,924
Due to Employees	712,470	712,470	0	0
Current portion of long-term liabilities	386,955	215,811	195,340	181,340
Deferred Revenue	3,994,321	215,100	2,120,000	2,540,000
Total Current Liabilities	6,891,106	3,126,975	3,966,079	4,122,438
Total Liabilities	8,036,907	3,885,821	4,509,114	4,470,133
Accumulated Fund	3,861,440	7,154,142	7,807,100	7,061,974
Total Liabilities and Funds	**11,898,347**	**11,039,963**	**12,316,214**	**11,532,107**