IICA Strategy for

BAHAMAS

2014-2018

Our Commitment: Results

Inter-American Institute for Cooperation on Agriculture

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I. **Introduction**.

The Inter-American Institute for Cooperation on Agriculture's Bahamas office is pleased to present the country strategy for the year 2015 – 2018. The IICA Country Strategy for the Bahamas will serve as a guide to channel the technical cooperation provided by the office over the next four years.

The country strategy reflects the needs of the agricultural sector, gathered through a consultative process with stakeholders in the agricultural sector, documents and publications and communications produced and released with main stakeholders. The stakeholders include the Ministry of Agriculture and Marine Resources (MAMR), the Bahamas Agricultural and Industrial Corporation (BAIC), The Bahamas Agriculture and Marine Science Institute (BAMSI) and other institutions of the public and private sector.

The technical cooperation actions in the 2014- 2018 Country Strategy are result-oriented and are linked to the four (4) instruments of action (Flagship Projects, Rapid Respond Actions, FonTC, Projects with external resources) outlined in the Mid-term Plan (MTP 2014- 2018).

To enable the countries to achieve these transformations, the Institute will focus its efforts on 11 contributions related to the strategic objectives of the 2010-2020 Strategic Plan, which are:

A. Strengthening the capabilities of the Member States at the national, regional, multinational and hemispheric levels to establish public policies and institutional frameworks in order to make agriculture more productive and competitive, improve management of rural territories, adapt to and mitigate the impact of climate change, and promote food and nutritional security.

B. Implementing, through public and private institutions, technological, institutional and business innovations aimed at boosting the productivity and competitiveness of agriculture and the production of basic foodstuffs of high nutritional quality.

C. Increasing the capabilities of the public and private sector to ensure agricultural health and food safety and thereby improve productivity, competitiveness and food security.

D. Strengthening the business and associative capabilities of the different stakeholders in the agricultural production chains.

E. Increasing the capacity for area-based social management24 among stakeholders in rural territories, especially those involved in family agriculture, in order to improve food security and rural well-being.

F. Enhancing the capabilities of different stakeholders of the agricultural chains and rural territories in the integrated management of water and sustainable use of soil for agriculture.

G. Increasing the capacity of public and private institutions to promote and implement measures for adapting agriculture to climate change and mitigating its effects, as well as promoting integrated risk management in agriculture.

H. Improving the efficacy and efficiency of food and nutritional security programs in the Member States

I. Ensuring that producers and consumers benefit from a greater use of native species, promising crops and native genetic resources with food potential.

II. . **Methodology.**

The method of formulating the country strategy was mainly done by SWOT analysis that were implemented in workshops in 7 islands.

i) Consultation with Producers, Processors and other private sector stakeholders

The development of the IICA Country Strategy was initiated by a Strengths, Weakness, Opportunity and Threat (S.W.O.T) session conducted on seven of the major islands of the Bahamas. The IICA country representative and National Technical Specialist along with a government official travelled to the islands of Grand Bahama, Andros, Abaco, Eleuthera, Exuma, Long Island, Acklins and New Providence to meet with farmers to conduct SWOT analysis and conduct an agricultural needs assessment for each island visited.

1) A Strength Weakness Opportunities and Threats (SWOT) analysis exercise was done with the participation and input of the stakeholders (farmers and agri-business persons) to determine the challenges and opportunities in the agriculture sector.

2) The method of consultation was an agri-business and associative analysis survey filled out by the stakeholders. The purpose of the survey was to determine the extent of production planning, marketing and the interaction and involvement each stakeholder has with associations and cooperatives.

Resulting from the S.W.O.T and stakeholder consultation, the IICA Bahamas office has identified six priority areas for technical cooperation. These are:

i) Institutional modernization and strengthening,
ii) Agribusiness and value chain development,
iii) Agrotourism development,
iv) Food security
v) Family agriculture
vi) Sustainable use of natural resources for agriculture.

ii) Consultation with Governmental, international and private stakeholders

We had various consultations and discussions to establish the priorities of the Ministry of Agriculture, the Bahamas Agricultural and Industrial Cooperation (BAIC), The Bahamas Agriculture and Marine Science Institute (BAMSI), Department of Cooperative Development

(DCD) to establish the current drive to position the agricultural sector as a leading economic force in the Bahamas.

Discussions were also held with the Ministry of Grand Bahama, Ministry of Education, Ministry of Financial Services, Ministry of Health. Ministry of Environment, Bahamas Development Bank and other agencies.

On the other hand we had continuous exchange of information and strategies with farmers' organizations and main international organizations like FAO, IDB, PAHO, GEF, OAS, UN Women, etc.

iii) Documents' consultation

We took in consideration documents that outline strategies like the Rebuilding Bahamian Agriculture: A 20 year plan (MAMR)-2014 and Rapid Assessment of Bahamas Agricultural Sector (FAO)-2009 which constitute the official current and previous plans for developing agriculture in the Bahamas.

III. IICA Country Strategy

i. **Analysis of the context**. Up-to-date general state of the sector in the country.

In the Bahamas successive agricultural census for the past 30 years have shown a continuous decline in the number of farms and farmers. It is for this reason that agriculture contributes to less than 3% of the Gross Domestic Product (GDP). Within the last two years the government of the Bahamas has displayed a new found determination to reinvest in agriculture thus committing to reducing the country's food import bill. The government of the Bahamas' most recent major investment is the Bahamas Agriculture and Marine Science (BAMSI). According to the Prime Minister, The Rt Hon. Perry Christie, the new Institute will be a centre for research-based activities; will provide hands-on training in fields such as crop and livestock production, farm management, environmental conservation and marine resources. The Institute will also offer academic instruction and will house an arboretum and a tutorial farm.

The Government of the Bahamas recognizes the economy can no longer be sustained by a limited number of sectors. It also sees the need to support economic development in the Family Islands so as to restrict the migration of the population to the more densely populated Islands of New Providence and Grand Bahama. However, development of the rural sector on several islands can be costly and therefore the strategies and actions to achieve the goal of economic diversification will require a measure of selectivity.

The agriculture sector is challenged to produce in a situation in which banks and other lending agencies are not willing to fund agricultural projects, particularly since it is deemed as high risk due to frequent damages from storm and hurricanes, as well as market related phenomena. Lack of secured land tenure, as it relates to collateral for securing loans, further accounts for the low level of investments in the sector. Additionally, despite having access to land, most lessees are constrained to find funding to support their projects because the lease document is not widely

accepted by the commercial banking sector in order to secure financing. There are also no financial mechanisms such as insurance to support rehabilitation in the event of a natural disaster

Other challenges faced by the sector include a shortage of skilled personnel in both the agriculture and fisheries sectors to deal with a variety of critical issues that include agricultural biodiversity research and management, participation and implementation of international agreements and sustainable management of the natural and marine resources as well as implementation of policies, strategies and programmes.

The decline of the Agricultural Sector of The Bahamas has been manifested in a number of areas- output, contributions to GDP, and the size of the farming community. The most conspicuous area has been in the decline of manpower, respectfully in expertise and in the number of professionally trained officers.

Currently we can describe two main wide agricultural chains, livestock and fruits and vegetables. We split them this way as most individual producers is not exclusively dedicated to one specific product and each individual product is not significantly big in volumes.

Small ruminants are the most important activity in livestock with important farmers in most of the islands. Pigs are a growing activity and poultry is also important with big and small projects in several islands capable of providing a high percentage of local consumption of meat and eggs.

In terms of fruits and vegetables, the main products are onions, pumpkin, cucumbers, peppers, tomatoes, avocados, bananas, among other. Main productions are in Andros, Abaco and Eleuthera, but present in other few islands.

The situation of agriculture is expecting a boost from the creation of the Bahamas Agriculture and Marine Science Institute (BAMSI) that has started training students in agriculture and that have established a tutorial/commercial farm that will promote the production of a large variety of tropical fruits, production of sheep and goats and the largest aquaponic project in the country to produce tilapia and vegetables combined.

They also plan to affiliate farmers to their network to commercialize their products, along with the Bahamas Agricultural and Industrial Corporation (BAIC) that handles the packing houses in several islands and the Produce Exchange in New Providence.

The reality as an archipelago is that some islands have water enough, specially the pine islands, while other (coppice islands) do not have enough water. Quality of soils is a major challenge. To this we have to add problems with transportation and logistics, high costs of labor and services, lack of agricultural insurance and financing, etc.

ii. **International vision and hemispheric trends in agriculture and rural life**.

International food prices began to rise again during the second half of 2010 and this upward trend continued in the first half of 2011. Following sharp increases in 2007-08, prices stabilized in 2009,

due to the combination of the economic downturn and the financial crisis that affected the global economy during the second half of 2008 and in 2009. The analysis considers the factors responsible for the fluctuations in agricultural prices and highlights the importance of governments being able to respond more quickly and with more suitable policies to any future price spikes. It concludes that variations in prices are due to a complex set of variables, some related to structural determinants of supply and demand, but also to cyclical factors. Furthermore, the behavior of domestic macroeconomic variables, responding to specific policies, affects the evolution of international prices. Some examples of this are the pressure on the real and financial demand created by expansionist monetary policies, and the stimulation of the region's imports as a result of the devaluation of the dollar.

Agricultural production is expected to grow in 2011, with cereals leading the way, but measures to improve the performance of agriculture will be needed in the long term. Some of the most important predictions are that: a) energy and perspective on Latin America and the Caribbean (LAC)food prices will rise in real terms over the long run; b) China will continue to be one of LAC's most important partners, demanding more food products, which will help revive agricultural trade flows; c) the need to achieve food security will make it necessary to produce more good-quality food and to do so competitively; and, d) the development and improvement of research, innovation and information in the countries will continue.

According to a report "The Outlook for Agriculture and Rural Development in the Americas 2011-2012" the agricultural sectors of LAC should view the long-term trend of higher agricultural commodity prices as an opportunity, because some countries have land available that could be incorporated into production and the region possesses a relative abundance of water, biodiversity and human resources. However, it also highlights the continued existence of major technological gaps, which – if overcome – would raise yields and thereby increase food production significantly.

Thanks to the growing demand for meat and milk, the outlook for the livestock sector in the years ahead is one of great opportunities. However, given the increasing use of biofuels, it is predicted that there will be continued pressure on the prices of some inputs, especially grains. In addition, the biggest challenge that the commercial, intensive livestock sector will face will be to achieve greater efficiency and a better balance between the financial benefits for companies and the social benefits for consumers and communities. The strengthening of family livestock production and its integration into markets would appear to be an important strategy for improving the supply of protein foods and enhancing food security programs in vulnerable communities. The promotion of innovation, free competition and training for human resources will be of key importance for this sector. Two other challenges for the sector in the years ahead, related to the environment, will be climate change and natural resources management.

The analysis shows that while both urban and rural poverty fell between 2000 and 2007, thanks to the growth of the region's economy and agriculture, the crisis caused it to rise again. However, in 2009 poverty in the LAC region as a whole rose by only 0.1% and extreme poverty by 0.4%. The increase was slightly higher in rural areas than in urban areas. What the crisis did highlight was a general trend towards a downturn in the job market. The impact on poverty was limited for a number of reasons, including: a) the strategies implemented by households, which combined agricultural and nonagricultural income, to cope better with the crisis; b) the positive trend in income from non-agricultural work, which partly offset the fall in income from agricultural work,

income from self-employment and, in some countries, the remittances received from abroad; and, c) income from transfers under public programs. The chapter concludes with a series of policy recommendations. One issue that is highlighted is the need for the region to include in its political agenda a debate on the situation of the rural labor market and the creation of decent employment, to help reduce rural poverty.

iii. **Challenges and opportunities for agriculture in the country**.

The document 'Rebuilding Agriculture: A 20 year plan produced by Mr. Godfrey Eneas, consultant to the Minister of Agriculture has been adopted as a major resource for plans for agriculture in the country.

In our Charter of Governance, we called for revolutionizing Bahamian agriculture. Revolutionizing Bahamian Agriculture "Grow What We Can…Buy What We Must"

How: *Through import substitution, we will:*
a) Save foreign exchange
b) Earn foreign exchange
c) Secure the domestic market for local producers

Mechanism: —*New Agriculture‖ will be:*
a) Technologically driven
b) Environmentally friendly
c) Scientifically based
d) Value chain approach
e) Research oriented
f) Competitiveness rooted
g) Innovative

Development:

- *Establish a Centre of Excellence via:*
  Bahamas Food Sciences Institute on Andros Island within 3 years, possibly on Cat Island/Long Island within 7 years in conjunction with [College of the Bahamas].

- *Upgrade the Packing Houses to Agribusiness Centres*
  a) Construct agribusiness centres on East Grand Bahama and Abaco
- *Introduce a Biotechnology Unit for plant propagation/production*
- *Establish slaughtering and processing facilities as part of an upgrade on North Andros, Eleuthera, and Long Island.*
- *Create a model commercial farm to teach farmers new techniques*

Policy: *Reorganize the Department of Agriculture as a Regulatory Agency*

- *Expand the role of BAIC to include Agricultural Development. Devise a National Food Production Plan*

- *Enhance pothole farming as a viable production alternative. Initiate a special program to attract young people and women to the industry.*
- *Foster greater cooperation with international agencies such as the Food and Agriculture Organization, IICA and CARDI*

Diversification: *Attract Foreign Direct Investment. Encourage Bahamian entrepreneurs to invest in food production and processing.*

Challenges

1. An aging cadre of farmers.
2. Unattractiveness of agriculture to youth.
3. Unbalanced economic development.
4. Declining populations on a number of key Family Islands.
5. Lack of research in various critical areas of the sector.
6. Lack of infrastructure for participation in a global economy.
7. Lack of skilled manpower both as agricultural professionals and as farm producers.
8. The Agribusiness Sector is under- developed.
9. Escalating health care costs as a result of non-communicable diseases emanating from dietary change.
10. Crumbling public sector marketing system.
11. Unpreparedness for the World Trade Organization's Agreement on Agriculture i.e. inability to sign bi-lateral agreements.

iv. **Needs/requests for technical cooperation**.

The Institutes overall core strategy for each country is as follows.

Strategic objective 1: To improve the productivity and competitiveness of the agricultural sector.

The Institute will support The Bahamas in: a) building, strengthening and managing agricultural innovation systems, including the development of productive, organizational and business solutions; b) strengthening agricultural health and food safety services; c) developing trade and agribusiness; d) establishing regulatory frameworks and positions based on consensus in international forums, and e) designing innovative systems of incentives.

Strategic objective 2: To strengthen agriculture's contribution to the development of territories and the well-being of the rural population.

Using a holistic approach, IICA proposes to support the task of effectively integrating the agricultural sector into the rural milieu, as the best pathway to promoting equity and inclusion. This implies at least: a)implementing public policies that promote investment in rural areas, the

aggregation of value and retaining value in the production areas, as well as social inclusion plans and land planning and management processes; b) strengthening agricultural extension and advisory services; c) developing models, methodologies and instruments to strengthen small and medium-scale agriculture, as well as family agriculture; d) linking agricultural producers to value chains and markets; and e) improving access to production resources, information, training, technology and markets.

Strategic objective 3: To improve agriculture's capacity to mitigate and adapt to climate change and make better use of natural resources.

In order to develop a sustainable agriculture, IICA will support its member countries in:

a) Developing and implementing harmonized policies and programs to promote planning processes to adapt agriculture to climate change, effective soil management and the efficient use of water resources;

b) Increasing and improving the capacity of innovation systems to develop practices and materials that facilitate the efficient adaptation of agriculture to climate change and the development and application of technologies and processes to reduce the impacts of agriculture on the climate and on natural resources;

c) Increasing farmers' knowledge so that they can apply "environment-friendly" practices; and d) strengthening integrated risk management programs.

Strategic objective 4: To improve agriculture's contribution to food security.

In order to add value to the different initiatives aimed at resolving the problem of food and nutritional insecurity, IICA is committed to: a) implementing public policy options aimed at ensuring availability of and access to quality foods in vulnerable rural areas and populations; b) promoting innovation as a means to boost productivity and competitiveness as central elements of food and nutritional security; c) promoting competitive, sustainable and inclusive business models, particularly in family agriculture, to guarantee a supply of good quality food and better incomes; d) providing support to reduce losses of raw materials and food in the processing stage; e) promoting family agriculture's contribution to the food supply; and f) increasing institutional competencies in the area of food and nutritional security.

11 Contributions of the MTP	Requests
A. Strengthening the capabilities of the Member States at the national, regional, multinational and hemispheric levels to establish public policies and institutional frameworks in order to make agriculture more productive and competitive, improve management of rural territories, adapt to and mitigate the impact of climate change, and promote food and nutritional security.	i) Legal framework SPS, policies and implementation ii) Extension service iii) Research system iv) Quality and standards v) Market information system vi) Access to cooperation funding vii) Access to financing viii) Marketing system

B. Implementing, through public and private institutions, technological, institutional and business innovations aimed at boosting the productivity and competitiveness of agriculture and the production of basic foodstuffs of high nutritional quality.	i) Improvement of infrastructure (ie. Germplasm bank, slaughter houses and meat processing, food processing, packing houses, feed mills, experimental farms and crops, etc.) ii) Greenhouse initiatives i) Aquaponic projects ii) Urban agriculture programme
C. Increasing the capabilities of the public and private sector to ensure agricultural health and food safety and thereby improve productivity, competitiveness and food security.	i) Technical cooperation to public and private sector in AHFS
D. Strengthening the business and associative capabilities of the different stakeholders in the agricultural production chains.	i) Capacity building for farmers' organizations and equally for youth and women's organizations in the rural milieu. ii) Organization and strengthening of agricultural chains. iii) Coordination of actions among different international and local stakeholders.
E. Increasing the capacity for area-based social management among stakeholders in rural territories, especially those involved in family agriculture, in order to improve food security and rural well-being.	i) Capacity building at community level in agriculture, handicraft, processing for improving family units and community projects.
F. Enhancing the capabilities of different stakeholders of the agricultural chains and rural territories in the integrated management of water and sustainable use of soil for agriculture.	i) Capacity building in better use of resources. ii) Projects in water capture and management. iii) Innovations in improvement of soils and alternatives for crops. iv) Introduction of crops adapted to salty and brackish water and to reduced use of water.
G. Increasing the capacity of public and private institutions to promote and implement measures for adapting agriculture to climate change and mitigating its effects, as well as promoting integrated risk management in agriculture.	i) Capacity building in adaptation to climate change. ii) Capacity building in climate-smart agriculture.

H. Improving the efficacy and efficiency of food and nutritional security programs in the Member States	i) ii) iii)	Programs aimed at educating consumers on best practices Backyard farming initiative Research on product's varieties to be propagated for better local supply.
I. Ensuring that producers and consumers benefit from a greater use of native species, promising crops and native genetic resources with food potential.	i) ii) iii)	Preserve local varieties Explore new uses and processing for local products. Explore introduction of new crops.
J. Improving institutional capacity to address losses of food and raw materials throughout the agricultural chains.	i) ii)	Improve the logistic from crops to harvest, to post-harvest to distribution channels and final consumers. Research and implement techniques for preservation and processing of food.
K. Strengthening the Member States' capacity for consensus and participation in international forums and other mechanisms for the exchange of knowledge and mobilization of sizable resources for inter-American agriculture.	i) ii) iii)	Assist to focal points and national committees or in their formation. Follow up on participation of local stakeholders in international forums Follow up on results of participation in international forums.

v. **ICS Instruments of action**.

In order to promote its innovative capacity, the effective and transparent use of its resources and the delivery of concrete results to The Bahamas, the Institute will use projects as the units for integrating its actions, programming, allocating resources, generating results and monitoring and evaluating institutional contributions. A project is understood as a set of activities designed to provide a creative solution to resolve a problem, take advantage of an opportunity, create knowledge, innovate, generate tools and methodologies, provide services to the country and promote organizational and process changes that serve to improve agriculture and increase its contribution and role in the development of rural territories i.e. the Family Islands.

i. "Flagship Projects": these will serve as the "backbone" for delivering IICA's technical cooperation, and will aim to achieve the 11 institutional contributions proposed for the 2014-2018 period related to competitiveness, sustainability and inclusion; In annex A are indicated the areas where we understand The Bahamas can benefit and participate in the Flagship Projects.

ii. "Projects financed with external resources": these instruments will be financed entirely with external funds and designed or implemented to complement and expand IICA's actions under this

MTP; In annex B we present the actual current projects with external funds, others being negotiated do not appear as still in phase of negotiation or of search for counterpart funds.

iii. "Rapid Response Actions (RRA)": these are designed to respond to specific requests and opportunities that arise in a country or in a group of countries prompted by political, social or economic changes, environmental emergencies or other emerging issues; At least one is being prepared to address local requests of technical cooperation.

iv. The "Technical Cooperation Fund" (FonCT): this mechanism will be used to finance pre-investment initiatives, formulate projects aimed at securing external resources and to mobilize new financial resources complementary to the Regular Fund.

The four flagship projects are:
1. Competitiveness and sustainability of agricultural chains for food security
2. Inclusion in agriculture and rural territories
3. Resilience and comprehensive risk management in agriculture
4. Productivity and sustainability of family agriculture for food security and the rural economy

Externally Funded Projects

At this moment this office handles a project of research with funds from CARDI and is part of 2 regional projects with the European Union, Agriculture Policy Program (APP) and Sanitary and Phytosanitary Project (SPS).

IV. Follow-up, monitoring, and evaluation of the ICS.

As stated in the 2014-2018 MTP, IICA will focus its work in a result oriented management approach, in which it will be necessary to count with a planning, programming, monitoring and solid evaluation, efficient and transparent system.

A special effort will be made in the follow-up and self-evaluation processes carried out at all levels of the Institute to enable the projects, units and personnel of the Institute to make needed adjustments in their plans and activities, in order to ensure that they make a significant contribution to achieving the objectives identified in the MTP. [1]

To achieve the results of the technical cooperation, IICA will have an institutional strategy of monitoring and comprehensive evaluation of the Flagship Projects (FP), the Rapid Response Actions (RRA), pre investment initiatives of the Technical Cooperation Fund (FonTC) and externally funded projects, all within the IICA Country Strategies (ICS).

All action developed in the operation of the Institute embodied in the present ICS, will be strengthened through the integration of all of its technical and administrative services; the strengthening of the institutional culture of results-driven management; the improvement of monitoring and evaluation processes; and transparency and accountability in all of its activities.

[1] Pg. 56 2014-2018 MTP

The Institute will count with the adjusted Unified Institutional Management System (SUGI) to the new needs of technical cooperation model, which will allow tracking, monitoring and evaluating of IICA's actions in the countries and the hemisphere.

Monitoring and evaluation will contribute to a better understanding of the progress of the Institute, it will play an important role in accountability, the reporting and transparency of their actions, and identify potential obstacles to prevent compliance and adjustments required in the different strategies in a spirit of coordination and responsibility.

e. **Accountability**

IICA is an organization committed to accountability. The Institute's work is organized conceptually as a chain of outcomes actions; with this structure, IICA can faithfully honor its commitment to accountability and to keeping its principals informed of what has actually been achieved compared with what was initially planned.[2]

All of the Institute's technical cooperation actions will be carried out in strict compliance with its internal regulations and its fundamental values, particularly those of transparency and accountability.[3]

[2] Pg. 16 2014- 2018 MTP

[3] Pg. 33 2014-2018 MTP

ANNEX A

<table>
<tr><td>Name of Project</td><td colspan="4">Development of marketable varieties of sweet potatoes and cassava</td></tr>
<tr><td rowspan="2">Instrument of Action that finances it</td><td>Flagship Project</td><td>Externally funded project</td><td>Rapid Response Action</td><td>Technical cooperation Fund</td></tr>
<tr><td>Competitiveness and sustainability of agricultural chains</td><td>CARDI</td><td></td><td></td></tr>
<tr><td>Background</td><td colspan="4">Root and food crops typically have an “inferior good” status. Markets which have experienced a general increase in income levels are easily saturated, particularly if production does not keep pace with the strong dynamic of consumer preference for consumer friendly or “ready-to-eat” foods.

Some food crops have potential in extra-regional markets where they are considered as being exotic or have a nostalgic value for residents with cultural roots in the tropics. These commodities can be studied along their entire chain with a view to commercializing selected areas of their operations. If inroads can be made in the extra regional markets and improvements in quality and presentation to stimulate domestic demand, then a critical level of sales may be achieved that is consistent with a feasible operation.

The Department of Agriculture (DOA) of the MAMR has a program for improved seed availability and improved crop management. Interventions include variety trials to expand the harvest period, provision of greenhouses to farmers on credit to allow early planting of seedlings, construction of modern post-harvest facilities in North Andros and the installation of automated grading, weighing and packaging machines for onions.

The DOA plans to substitute locally grown cassava for imported cassava. A washing and waxing facility was erected in North Andros to assist farmers in extending the shelf life of locally grown cassava. The facility will be duplicated in other areas of the country.

Of the roots and tubers, sweet potato is the most significant, followed by cassava. There has been an increase in the amount of root crops produced, in an effort to satisfy increasing local demand for those commodities. In both Abaco and Andros significant acreages of sweet potato have been planted using improved varieties.

In both Abaco and Andros, the resident extension officers are called upon for technical advice and information. Use of the Internet for purchasing seeds and searching for information is becoming prevalent, particularly among younger farmers. Technical information is also obtained from the University of Florida and other institutions in Florida, where some farmers have established contacts. The Mennonite community supports agriculture in North Andros through the sale of improved seeds, chemicals and other agricultural supplies and the rental of tractor equipment. The agricultural Cooperative in North Andros also sells agricultural supplies to the farming community. Some feel they obtain better prices from the agricultural cooperative than from other sources.

Due to financial constraints, many farmers are unable to make use of the modern technology available and this leads to low production efficiency. The financing of agricultural projects is nearly impossible, as bank loans are difficult to obtain and the interest rates are usually considered to be high. Farmers tend to save to provide input for the following cropping season. Some are engaged in other activities to supplement their farming income. Payment from the packing houses for produce submitted takes too long and constrains the farmer’s ability to finance further production. This also occurs on the local</td></tr>
</table>

	market in New Providence where farmers make private arrangements with vendors and retail food stores for the sale of their crops.
Issues in the country	Agronomic practices of farmers are not adequate, that include management of pests and diseases, post-harvest handling and transportation damages, quality and presentation of the products. There is a need to add value by freezing and processing.
General objective	The purpose of the project is to choose and obtain planting material for promising varieties of sweet potato and cassava, prepare trial crops in chosen islands, follow up its management and results and once knowing which are the ones with best results, train farmers and make planting materials accessible to farmers.
Baseline	The Department of Agriculture (DOA) of the MAMR has a program for improved seed availability and improved crop management. Interventions include variety trials to expand the harvest period, provision of greenhouses to farmers on credit to allow early planting of seedlings, construction of modern post-harvest facilities in North Andros and the installation of automated grading, weighing and packaging machines for onions. The DOA plans to substitute locally grown cassava for imported cassava. A washing and waxing facility was erected in North Andros to assist farmers in extending the shelf life of locally grown cassava. The facility will be duplicated in other areas of the country.

Issues (Indicator)	**Current level**	**Proposed goal**	**Component/Result**
Number of varieties	0	3	ER - 1. At least 3 varieties of each crop selected and material obtained.
Number of islands where varieties are tested	0	3	ER – 2. The respective varieties tested in at least 3 islands each.
Number of farmers participating in trial crops and training	0	60	ER – 3. At least 60 farmers trained and provided with planting material.
Number of reports at the end of the project	0	1	ER – 5. Final report containing details of the results obtained in the research.
Structure of the Project	4 expected results		
Component 1			
Specific objective 1	The purpose of the project is to choose and obtain planting material for promising varieties of sweet potato and cassava, prepare trial crops in chosen islands, follow up its management and results and once knowing which are the ones with best results, train farmers and make planting materials accessible to farmers.		

Results	**Contribution to which the result relates**	**Products and services (indicator)**	**Partners and counterparts**	**Date of achievement**
ER - 1. At least 3 varieties of each crop selected and material obtained.	**I**	Crops growing of 3 varieties of each cassava and sweet potatoes	**CARDI, Ministry of Agriculture**	**December, 2015**
ER – 2. The respective varieties tested in at least 3 islands each.	**I**	Islands chosen and assistance provided	**CARDI, Ministry of Agriculture**	**December, 2015**

ER – 3. At least 60 farmers trained and provided with planting material.	**I**	Reports of training to 60 or plus farmers	**CARDI, Ministry of Agriculture**	**January, 2016**
ER – 4. Final report containing details of the results obtained in the research.	**I**	One report made	**CARDI, Ministry of Agriculture**	**June, 2016**
Implementation strategy	IICA has established a committee with a member of the Ministry of Agriculture and a member of the Private sector. A Project Manager has been agreed with the MOA and he works in coordination with the Office Staff at IICA-Bahamas.			
Resources	**MOE**			

Operations Cash Flow Statement

Item	**TOTAL**	**Year 1**				**Year 2**			
		1st Qtr	**2nd Qtr**	**3rd Qtr**	**4th Qtr**	**1st Qtr**	**2nd Qtr**	**3rd Qtr**	**4th Qtr**
Inflows:									
External Revenue (IICA/CARDI)		11000	4500	2200	2700	3200	2200	2200	2000
Total Inflows		11000	5400	3100	3600	4100	3100	3100	2900
Outflows:									
Unit/Country Expected Results									
Expected Results Code:									
Priority Action/Activity									
Purchased Fixed/ Capital Assets (8000 series)	0	0	0	0	0	0	0	0	0
Personnel - Professional/ Retired Staff (4000 series)	0								
Personnel - Technical/Support Staff (4100 series)	0								
Casual Labour (4200 series)	0								
Professional Services (4300 series)	0								
General Office & Admin (5000 series)	1000	200	200	100	100	100	100	100	100
Info and Communication Services (5100 & 5200 series)	600	200	200	0	0	0	0	0	200
Workshops, Training & Meetings (5300 series)	3200	2500	100	100	100	100	100	100	100

Board Meetings (54000 series)	0								
Local Travel (6000 series)	13000	2000	1500	1000	1500	2000	1500	1500	2000
Foreign Travel (6100 series)	2200	2200							
Motor Vehicle Costs (6200 series)	0								
Materials, Supplies and Services (7000 series)	10000	**3000**	**2500**	**1000**	**1000**	**1000**	**500**	**500**	**500**
Field Station & Lab Expenses (8100 series)	0								
Subtotal	30000	10100	4500	2200	2700	3200	2200	2200	2900
Total Outflows									
NET CASHFLOW		900	900	900	900	900	900	900	0

ANNEX B

Name of Project	Improvement of pasture and farm management of small ruminant in semi-intensive systems			
Instrument of Action that finances it	**Flagship Project**	**Externally funded project**	**Rapid Response Action**	**Technical cooperation Fund**
		CARDI		
Background	Animal feed availability and fundamental good farm management practices continues to be a major issue in the small ruminant sector. The number of small ruminant farmers that have adopted intensively managed pastures and have incorporated new research-proven technologies for quality meat production is very minimal. More than 90% of grazing lands are local shrubs and grass with no improved management. Erratic feed and limited feed during drought or stress periods, and low profits have contributed to decreasing the number of producers. There is an abundance of land available to grow forage crops and produce silage for small ruminants when pasture land is not available. In many cases farmers do not have the training to utilize the forage that grows 'wild' and cannot identify high quality plants that can be used to feed their animals. Stocking density as it correlates to animal nutrition is not a concept that is practiced in the rearing of small ruminants, especially in the Bahamas. On the island of New Providence where stocking density, land and availability of nutritional forage is an issue, animals are allowed to graze the areas in which they live down to rock and no consideration is given to the nutritional value of the forage being consumed. However, some small ruminant farmers in New Providence feed their animals brewer's grain as a supplement and in some cases as a feed.			
Issues in the country	Small Ruminant farmers in the Bahamas do not generally practice good farm management of their animals. This includes identification of animals, separation of animals based on sex, age and stage of production and establishing an animal nutrition regime as it relates to stocking density. Farmers on the island of New Providence have very limited land space. If it can be demonstrated that improving the aforementioned current practices can decrease their cost of production and improve overall animal health, more farmers in the Bahamas may pay more attention to these fundamental practices.			
General objective	The purpose of the project is to implement demonstration sites to showcase good pasture establishment and provide training to demonstrate improved herd management, an animal nutrition programme and farm recordkeeping in semi-intensive small ruminant enterprises.			
Baseline	The Gladstone Road Agriculture Centre (GRAC) under the Department of agriculture has the infrastructure and has a framework to demonstrate good pasture establishment, recordkeeping and herd management. These assets can be built upon at GRAC in addition to establishing demonstration sites in collaboration with private farmers. .			
Issues (Indicator)	**Current level**	**Proposed goal**	**Component/Result**	
Number of demonstration sites	0	3	ER - 1. To establish demonstration sites for pasture management, herd management and recordkeeping and silage production in New Providence.	

Number of farmers trained	0	25	ER – 2. Train farmers in good herd management practices, management in animal nutrition techniques including making nutrient blocks and silage production
Number of reports	0	1	ER – 3. Final report on the progress of each demonstration site and farmer training
Component 1			
Specific objective 1	The purpose of the project is demonstrate good pasture establishment, farm recordkeeping and herd management in a semi-intensive system.		

Results	**Contribution to which the result relates**	**Products and services (indicator)**	**Partners and counterparts**	**Date of achievement**
ER. – 1. To establish demonstration sites for pasture management, herd management and recordkeeping and silage production in New Providence.	**I**	Established 3 pasture sites, herds from 3 farmers properly tagged and separated based on good management practices for small ruminants. 1 management and breeding plan for each demonstration site.	**CARDI, Department of Agriculture**	**February, 2015**
ER – 2. Train farmers in good herd management practices, management in animal nutrition techniques including making nutrient blocks and silage production	**I**	At least 25 farmers trained in Good Management Practices for small ruminants, animal nutrition and silage production. At least 5 nutrient blocks made	**CARDI, Ministry of Agriculture**	**February, 2015**
ER – 3. Final report on the progress of each demonstration site and farmer training	**I**	1 Final report on implementation of demonstration sites and farmer training	**CARDI, Ministry of Agriculture**	**December, 2015**
Implementation strategy	IICA has established a committee with a member of the Ministry of Agriculture, BAIC and private sector farmers association Bahamas Livestock and agricultural Farmers Association (BLAFA) and the Bahamas Agribusiness Cooperative (BABCO). An agriculture officer from the Department of Agriculture will co-manage the project with IICA Bahamas National Technical Specialist.			
Resources	**MOE**			

Operations Cash Flow Statement

Item	**TOTAL**	**Year 1**				**Year 2**			
		1st Qtr	**2nd Qtr**	**3rd Qtr**	**4th Qtr**	**1st Qtr**	**2nd Qtr**	**3rd Qtr**	**4th Qtr**
Inflows:									

External Revenue (IICA/CARDI)									
Total Inflows									
Outflows:									
Unit/Country Expected Results									
Expected Results Code:									
Priority Action/Activity									
Purchased Fixed/ Capital Assets (8000 series)	0	0	0	0	0	0	0	0	0
Personnel - Professional/ Retired Staff (4000 series)	0								
Personnel - Technical/Support Staff (4100 series)	$1000			$500		$500			
Casual Labour (4200 series)	$1000	$100		$300		$600			
Professional Services (4300 series)	0								
General Office & Admin (5000 series)	$300	$150				$150			
Info and Communication Services (5100 & 5200 series)									
Workshops, Training & Meetings (5300 series)	$2000	$1000				$1000			
Board Meetings (54000 series)									
Local Travel (6000 series)									
Foreign Travel (6100 series)	$700	$700							
Motor Vehicle Costs (6200 series)	0								
Materials, Supplies and Services (7000 series)	$5000			**$2500**	**$2500**				
Field Station & Lab Expenses (8100 series)	$2000			**$2000**					
Subtotal	$12,000								
Total Outflows									
NET CASHFLOW									

ANNEX C

Name of Project	STRENGHTENING AGROTOURISM LINKAGES IN THE COMMONWEALTH OF THE BAHAMAS			
Instrument of Action that finances it	**Flagship Project**	**Externally funded project**	**Rapid Response Action**	**Technical cooperation Fund**
Background	The project is an initiative of The Bahamas Hotel Association (BHA), Bahamas Ministry of Tourism, Bahamas Agricultural and Industrial Corporation (BAIC) and the Inter-American Institute for Cooperation on Agriculture (IICA) aimed at helping to create and strengthen better linkages between tourism and agriculture and in order to take advantage of the dynamism of touristic sector at the same time of diversifying the offer of products and services.			
Issues in the country	The Bahamas is plagued with the dominance of one traditional sector, tourism combined with the lack of economic innovation and the inability to maintain domestic demand for food security, which has the potential for economic crisis if there are any serious 'external shocks' or setbacks in mainstream tourism (Hepburn, 2010). Such a possible drop in tourism is most evident from experiences in the terrorist attacks in America on September 11th, coupled with the escalating cost of fuel in 2008, and a looming worldwide economic crisis well into the 21st century have caused a dramatic decline in tourism receipts, that could have an equally detrimental long-term impact. (Ministry of Tourism Department of Statistics, 2008) The need for diversification is not a novel concept for policy makers in The Bahamas, yet agri-tourism has not been embraced as a viable diversification strategy. This dissertation examines agri-tourism as a viable policy option for The Bahamas. While agritourism is still a form of tourism, it offers a new venue and different dimension to the already saturated 'sun, sea, and sand market', while stimulating interest into another sector of the economy, the agriculture sector. Linking the strongest performing sector of the country (tourism) to another (agriculture) has the ability to revitalize and inject resources for both sectors. For decades, The Bahamas has pursued traditional tourism and its economy has benefited. As the mass tourism market becomes more competitive globally, the Ministry of Tourism is seeking to promote alternative forms of tourism that can offer new cultural experiences for visitors to The Bahamas. Some farms, both subsistence and commercial, are already engaged in agro-tourism and have seen positive results of their efforts. The agricultural sector can be a challenging one to engage in for Bahamians with high inputs and low yields. Seeking alternative income sources for farms can increase profitability in the sector. Agro-tourism can be one such income source, particularly for Family Island farms, which would be considered rural. Agro-tourism can also be promoted to Bahamians, not just visitors to the country, to increase awareness about the agricultural sector in the community, to encourage more Bahamians to become involved in the sector as well as to increase awareness of the challenges the sector faces, inclusive of climate change.			
General objective	Support hotels and agricultural producers/processors and rural communities in The Bahamas to improve linkages and diversify the offer of products and services for tourism.			
Baseline	The purpose of the project is to support agribusiness and commerce linking demand to offer of agricultural products. Support the development of rural business based on products differentiation, linking agriculture, natural resources and tourism in rural territories as well as service and assistance provision to the agricultural sector. Additionally, there is a huge disconnect between agricultural products needed in the tourism industry and what is produced on farm. The is evident by the spoilage of produce and inherent loss that farmers incur seasonally because the lack of planning in terms of crop forecast, established linkages with hotels and knowledge in processing. A forum need to be created where			

	stakeholders in agriculture and tourism can sit across a table to discuss the needs of the tourism industry that can be met by the local farmers.			
Issues (Indicator)	**Current level**		**Proposed goal**	**Component/Result**
1. Number of studies at national and per island levels of yearly demand	0		3 studies	ER - 1. a) Improve commercial relationship between agriculture and tourism sector.
2. Number of National baselines and microbial mapping of specific pathogens	0		1	ER – 2.Assure quality and food safety in the food chain.
3. Number of certified public and private personnel in HACCP and related certifications	0		20	ER – 3. Train and create conscience in quality assurance and food safety and certifications.
4. Number of Farmers and processors trained in GMPs and GAPs	0		60	ER – 4. Promote organic agriculture, good agricultural practices and other good environmental and social practices.
5.Number of entrepreneurs trained in agro-eco-tourism	0		30	ER – 5. Strengthening alliances and coordinate agro-ecotourism actions with principal stakeholders
6.Number of committees formed	0		1	ER – 6 Strengthening agriculture producers associations and dialogue tables between producers and hotels.
7.Number agri-tourism models being implemented	0		3	ER- 7. Support innovative projects like greenhouses, thematic routes, farm visits, etc. .
8. Number of farmers trained	0		30	ER- 8. Schedule training and technical assistance for producers and organizations in selected rural communities
Structure of the Project	8 expected results			
Component 1				
Specific objectives	1. Organization of yearly demand and offer studies at national and per island levels. 2. Improve commercial relationship between both sectors. 3. Develop new products and services to profit tourism and agriculture. 4. Assure quality and food safety in the food chain			
Results	**Contribution to which the result relates**	**Products and services (indicator)**	**Partners and counterparts**	**Date of achievement**

ER - 1.) Improve commercial relationship between agriculture and tourism sector. .	**I**	One report	**Ministry of Agriculture, Ministry of Tourism, Bahamas Agricultural and Industrial Corporation (BAIC) farmers associations and cooperatives.**	**December, 2015**
ER – 2.Assure quality and food safety in the food chain.		1 microbial baseline study	**Ministry of Agriculture, Ministry of Tourism, Bahamas Agricultural and Industrial Corporation (BAIC) farmers associations and cooperatives**	**December 2015**
ER – 3. Train and create conscience in quality assurance and food safety and certifications.	**I**	1 HACCP certification workshop 2 selected food safety certifications	**Ministry of Agriculture, Ministry of Tourism, Bahamas Agricultural and Industrial Corporation (BAIC) farmers associations and cooperatives.**	**December, 2015**
ER – 4. Promote organic agriculture, good agricultural practices and other good environmental and social practices.	**I**	1 workshop in Good Agriculture Practices and Good Management Practices and organic farming pratices	**Ministry of Agriculture, Ministry of Tourism, Bahamas Agricultural and Industrial Corporation (BAIC) farmers associations and cooperatives.**	**December, 2015**
ER – 5. Strengthening alliances and coordinate agro-ecotourism actions with principal stakeholders	**I**	10 persons trained through OAS/IICA online agro-ecotourism course	**Ministry of Agriculture, Ministry of Tourism, Bahamas Agricultural and Industrial Corporation (BAIC) farmers associations and cooperatives.**	**May, 2016**
ER – 6 Strengthening agriculture	**I**	1 established committee comprised of stakeholders from the Tourism and Agriculture sectors	**Ministry of Agriculture, Ministry of**	**May, 2016**

producers associations and dialogue tables between producers and hotels.			**Tourism, Bahamas Agricultural and Industrial Corporation (BAIC) farmers associations and cooperatives.**	
ER- 7. Support innovative projects like greenhouses, thematic routes, farm visits, etc.		1 study report showing potential agritourism models in The Bahamas	**Ministry of Agriculture, Ministry of Tourism, Bahamas Agricultural and Industrial Corporation (BAIC) farmers associations and cooperatives.**	**May, 2016**
ER- 8. Schedule training and technical assistance for producers and organizations in selected rural communities.		2 workshops in agribusiness and marketing, food processing and farm management	**Ministry of Agriculture, Ministry of Tourism, Bahamas Agricultural and Industrial Corporation (BAIC) farmers associations and cooperatives.**	**May, 2016**
Implementation strategy	IICA has established a committee with a member of the Ministry of Agriculture and a member of the Private sector. A project manager will be appointed to work with the Office Staff at IICA-Bahamas and relevant stakeholders.			
Resources	**MOE**			

Operations Cash Flow Statement

Item	**TOTAL**	**Year 1**				**Year 2**			
		1st Qtr	**2nd Qtr**	**3rd Qtr**	**4th Qtr**	**1st Qtr**	**2nd Qtr**	**3rd Qtr**	**4th Qtr**
Inflows:									
External Revenue (IICA/CARDI)									
Total Inflows									
Outflows:									
Unit/Country Expected Results									
Expected Results Code:									
Priority Action/Activity									
Purchased Fixed/ Capital Assets (8000 series)	0								
Personnel - Professional/	0								

Retired Staff (4000 series)									
Personnel - Technical/Support Staff (4100 series)	0								
Casual Labour (4200 series)	$1000								
Professional Services (4300 series)	$3000								
General Office & Admin (5000 series)	$1500								
Info and Communication Services (5100 & 5200 series)	$3000								
Workshops, Training & Meetings (5300 series)	$10,000								
Board Meetings (54000 series)	$5000								
Local Travel (6000 series)	$6000								
Foreign Travel (6100 series)	$2500								
Motor Vehicle Costs (6200 series)	$2000								
Materials, Supplies and Services (7000 series)	$1800								
Field Station & Lab Expenses (8100 series)									
Subtotal	$35,800								
Total Outflows									
NET CASHFLOW									

ANNEX D

Name of Project	NATIONAL BACKYARD FARM & COMMUNITY GARDEN INITIATIVE			
Instrument of Action that finances it	**Flagship Project**	**Externally funded project**	**Rapid Response Action**	**Technical cooperation Fund**
Background				
Issues in the country	According to a report prepared for the World Food Summit, The Bahamas imports 90% of its food. The resulting high prices make many foods inaccessible to individuals of lower socioeconomic status, often resulting in unhealthy lifestyles choices and subsequent increase of non-communicable diseases			
General objective	To contribute to food security in The Bahamas.			
Baseline	Analysis, monitoring and dissemination of policies and information on the situation of and outlook for food and nutritional security			
Issues (Indicator)	**Current level**	**Proposed goal**	**Component/Result**	
Number of studies	0	1	ER - 1. Base line studies	
Number of Demonstration sites	0	3	ER – 2. Demonstration centers	
Number of School Gardens	0	5	ER – 3..School Gardens	
Number of Backyard Farms	0	8	ER – 4. Backyard farms	
Number of Publications	0	1	ER – 5. Nutrition and health	
Number of Committees		1	ER – 6. Continuity and sustainability	
Structure of the Project	6 expected results			
Component 1				
Specific objective 1	a) To establish methodologies, plans and infrastructures to implement Back Yard Farming			

	b) Integrate and train communities into Back Yard Farming c) Contribute to improvement in nutrition and health among population involved d) Increase and diversify food options in households

Results	**Contribution to which the result relates**	**Products and services (indicator)**	**Partners and counterparts**	**Date of achievement**
ER - 1. 1. Base line studies	**I**	1 report	**Ministry of Agriculture, Urban Renewal and BAIC**	**December, 2015**
ER – 2. Demonstration centers	**I**	3 demonstration sites	**Ministry of Agriculture, Urban Renewal, PAHO and BAIC**	**December, 2015**
ER – 3. School Gardens	**I**	5 new school garden	**Ministry of Agriculture, Urban Renewal, PAHO and BAIC**	**December, 2015**
ER – 4. Backyard farms	**I**	8 back yard farms	**Ministry of Agriculture, Urban Renewal, PAHO and BAIC**	**June, 2016**
ER – 5. Nutrition and health	**I**	1 publication on Bahamian nutrition, health and food production	**Ministry of Agriculture, Urban Renewal, PAHO and BAIC**	**June, 2016**
ER – 6. Continuity and sustainability		1 steering committee for gardens	**Ministry of Agriculture, Urban Renewal, PAHO and BAIC**	**December. 2016**
Implementation strategy	IICA has established a committee with a member of the Ministry of Agriculture and a member of the Private sector. A Project Manager has been agreed with the MOA and he works in coordination with the Office Staff at IICA-Bahamas.			
Resources	**MOE**			

Operations Cash Flow Statement

Item	**TOTAL**	**Year 1**				**Year 2**			
		1st Qtr	**2nd Qtr**	**3rd Qtr**	**4th Qtr**	**1st Qtr**	**2nd Qtr**	**3rd Qtr**	**4th Qtr**
Inflows:									
External Revenue (IICA/CARDI)									
Total Inflows									
Outflows:									
Unit/Country Expected Results									
Expected Results Code:									
Priority Action/Activity									
Purchased Fixed/ Capital Assets (8000 series)	0	0	0	0	0	0	0	0	0
Personnel - Professional/ Retired Staff (4000 series)	$5000								

Personnel - Technical/Support Staff (4100 series)	0								
Casual Labour (4200 series)	$4000								
Professional Services (4300 series)	0								
General Office & Admin (5000 series)	$1000								
Info and Communication Services (5100 & 5200 series)	$3000								
Workshops, Training & Meetings (5300 series)	$15000								
Board Meetings (54000 series)									
Local Travel (6000 series)	$8000								
Foreign Travel (6100 series)	$4000								
Motor Vehicle Costs (6200 series)	$2000								
Materials, Supplies and Services (7000 series)	$2500								
Field Station & Lab Expenses (8100 series)									
Subtotal	$44,500								
Total Outflows									
NET CASHFLOW									

ANNEX E

Name of Project	Cost effective wooden structured greenhouse construction with invasive species plant species.			
Instrument of Action that finances it	**Flagship Project**	**Externally funded project**	**Rapid Response Action**	**Technical cooperation Fund**
Background	On many of the islands of the Bahamas much of the land is unavailable for agriculture due to the very hard limestone rock, the excessive alkalinity of the soil as a result of that limestone rock and limited availability of fresh water. Protected agriculture namely greenhouse production can be a great alternative to grow large amounts of produce in a small controlled area. There are islands like Inagua that rely on the mail boat system to bring fresh vegetables every 8 days. Upon the arrival of produce, it is all bought in the stores in an average of three hours. The main industry in Inagua is salt harvesting. Casuarina is a hardy false pine the litters the beaches of the Bahamas. Being salt and drought tolerant, it is fast growing and reproduces at an accelerated rate. This enables the Casuarina to become established very quickly, replacing the slow growing Bahamian native flora. Further to its growing patterns, the Casuarina covers the surrounding soil with its modified stems producing mats of brown "needles" which further inhibit the growth of other plants. It is also thought that the root of the Casuarina produces a type of natural herbicide reducing the competition from other plants. All of these properties make the Casuarina an extremely aggressive invader and once established it is extremely hard to remove. Hence, the Casuarina is a major contributor to biodiversity loss in the Bahamas. It has also caused the deterioration of sand dunes throughout the country as its root system does not hold onto the sand as well as the native flora. Therefore falling over easily during storms or simply allowing the sand to wash away directly from underneath the plant.			
Issues in the country	The use of Casuarina as the major material for greenhouse production will lower cost of material and can aid in increase agricultural production on those rural islands where fresh fruits and vegetable are a luxury.			
General objective	General: Encourage low-cost greenhouse construction and protected agriculture methods.			
Baseline				
Issues (Indicator)	**Current level**	**Proposed goal**	**Component/Result**	
Number of greenhouses	0	4	ER - 1. Demonstrate low-cost greenhouses throughout the islands	
Number of farmers trained	0	60	ER – 2. Train farmers in low-cost greenhouse construction	
Number of islands reached	0	4	ER – 3. Conduct workshops each each region of the Bahamas	
Number of reports	0	1	ER – 4. Prepare final report for distribution	
Structure of the Project	4 expected results			

Component 1	
Specific objective 1	a) To train farmers in the construction of wooden greenhouses with invasive plant species. b) To train farmers in Good Agricultural Practices (GAPS) in greenhouse production. c) To train farmers in irrigation techniques related to greenhouse production

Results	**Contribution to which the result relates**	**Products and services (indicator)**	**Partners and counterparts**	**Date of achievement**
ER - 1. Demonstrate low-cost greenhouses throughout the islands	**I**	4 greenhouses constructed	**Ministry of Agriculture Bahamas National Trust, Exuma Foundation**	**December, 2015**
ER – 2. Train farmers in low-cost greenhouse construction	**I**	60 farmers trained in construction use of low-cost greenhouses	**Ministry of Agriculture Bahamas National Trust, Exuma Foundation**	**December, 2015**
ER – 3. Conduct workshops each region of the Bahamas	**I**	1 greenhouse in each of the 4 regions of the Bahamas	**Ministry of Agriculture Bahamas National Trust, Exuma Foundation**	**December, 2015**
ER – 4. Prepare final report for distribution	**I**	1 final reports of results and workshops	**Ministry of Agriculture Bahamas National Trust, Exuma Foundation**	**June, 2016**

Implementation strategy	IICA will liaise with the Bahamas National Trust and the Department of Forestry as to the best woor to be used for construction of the greenhouses.
Resources	**MOE**

Operations Cash Flow Statement

Item	**TOTAL**	**Year 1**				**Year 2**			
		1st Qtr	**2nd Qtr**	**3rd Qtr**	**4th Qtr**	**1st Qtr**	**2nd Qtr**	**3rd Qtr**	**4th Qtr**
Inflows:									
External Revenue (IICA/CARDI)									
Total Inflows									
Outflows:									
Unit/Country Expected Results									
Expected Results Code:									
Priority Action/Activity									
Purchased Fixed/ Capital Assets (8000 series)	0								
Personnel - Professional/ Retired Staff (4000 series)	$5000								

Personnel - Technical/Support Staff (4100 series)	$6000								
Casual Labour (4200 series)	$10,000								
Professional Services (4300 series)	$8000								
General Office & Admin (5000 series)	$3000								
Info and Communication Services (5100 & 5200 series)	$4000								
Workshops, Training & Meetings (5300 series)	$20,000								
Board Meetings (54000 series)									
Local Travel (6000 series)	$15,000								
Foreign Travel (6100 series)	$4000								
Motor Vehicle Costs (6200 series)									
Materials, Supplies and Services (7000 series)	$15,000								
Field Station & Lab Expenses (8100 series)									
Subtotal	$90,000								
Total Outflows									
NET CASHFLOW									

ANNEX F

Name of Project	Sustainable Management of Water Resources for Agricultural Production in The Bahamas			
Instrument of Action that finances it	**Flagship Project**	**Externally funded project**	**Rapid Response Action**	**Technical cooperation Fund**
Background				
Issues in the country	The Bahamas is an archipelagic nation that has no rivers or freshwater lakes. The main source of freshwater is from the rain and reverse osmosis of salt water, which is a costly process. The freshwater from the rain percolates through the limestone rock of which the islands are built and is collected in underground water lenses. New Providence has barged water from the island of Andros for the last 40 years because there is not sufficient freshwater to sustain the island for commercial, household or farm use. Improper water extraction has led to saltwater intrusion in many instances. The Southern islands suffer from scarce water supplies more so than the Northern and Central islands because the water evaporation rate is higher and the water lens is more difficult to access. Education in watershed management is sorely lacking in the islands of The Bahamas. Sustainable water management was recently identified as a priority issue for action in preparing the islands for adapting to climate change during the recent IICA-IFAD climate-smart agriculture project's stakeholder consultation with smallholder rural producers.			
General objective	To train farmers in various methods of water harvesting and promote the sustainable use of water for irrigation and improved agricultural production.			
Baseline				
Issues (Indicator)	**Current level**	**Proposed goal**	**Component/Result**	
Number of farmers trained	0	20	ER - 1. Farmers trained in irrigation management	
Number of roof-top water catchment models	0	5	ER – 2. Urban communities trained in watershed protection and water catchment techniques	
Number of water catchment irrigation systems installed	0	5	ER – 3. Water catchment irrigation systems	
Number of islands reached		3	ER - 4. Farmers trained in irrigation management	
Structure of the Project	4 expected results			

Component 1				
Specific objective 1	a) To promote appropriate smallholder on–farm irrigation technologies and train farmers and extension staff in the efficient planning, operation and maintenance of the recommended irrigation technologies. b) To demonstrate rooftop water harvesting and establish a water–harvesting facility at a school or homestead where the public could be sensitized about rooftop water harvesting for domestic and agricultural use. c) Provide demonstration equipment for water harvesting.			
Results	**Contribution to which the result relates**	**Products and services (indicator)**	**Partners and counterparts**	**Date of achievement**
ER - 1. Farmers trained in irrigation management	**I**	30	**Ministry of Agriculture**	**February, 2016**
ER – 2. Urban communities trained in watershed protection and water catchment techniques	**I**	5	**Ministry of Agriculture**	**February, 2016**
ER – 3. Water catchment irrigation systems	**I**	5 demonstration systems	**Ministry of Agriculture**	**October, 2016**
Implementation strategy	IICA Bahamas will selected the islands in most dire need of water harvesting training and consul with stakeholders and the government as to the best way forward.			
Resources	**MOE**			

Operations Cash Flow Statement

Item	**TOTAL**	**Year 1**				**Year 2**			
		1st Qtr	**2nd Qtr**	**3rd Qtr**	**4th Qtr**	**1st Qtr**	**2nd Qtr**	**3rd Qtr**	**4th Qtr**
Inflows:									
External Revenue (IICA/CARDI)									
Total Inflows									
Outflows:									
Unit/Country Expected Results									
Expected Results Code:									
Priority Action/Activity									
Purchased Fixed/ Capital Assets (8000 series)	0								
Personnel - Professional/ Retired Staff (4000 series)	$2000								

Personnel - Technical/Support Staff (4100 series)	$5000								
Casual Labour (4200 series)	$2000								
Professional Services (4300 series)	$4000								
General Office & Admin (5000 series)	$1000								
Info and Communication Services (5100 & 5200 series)	$3000								
Workshops, Training & Meetings (5300 series)	$10,000								
Board Meetings (54000 series)									
Local Travel (6000 series)	$7000								
Foreign Travel (6100 series)	$4000								
Motor Vehicle Costs (6200 series)									
Materials, Supplies and Services (7000 series)	$4000								
Field Station & Lab Expenses (8100 series)									
Subtotal	$38,000								
Total Outflows									
NET CASHFLOW									

ANNEX F

Name of Project	Sustainable production of fish and vegetables with sustainable use of water and fertilization			
Instrument of Action that finances it	**Flagship Project**	**Externally funded project**	**Rapid Response Action**	**Technical cooperation Fund**
Background	The Bahamas is an archipelagic nation that has no rivers or freshwater lakes. The main source of fresh water is from the rain and reverse osmosis of salt water, which is a costly process. The Southern islands suffer from scarce water supplies more so than the Northern and Central island because the water evaporation rate is higher and the water lens is more difficult to access. This island have new and growing resort projects but depend entirely from imported vegetables brought from Nassau at a very high cost and reduced freshness.			
Issues in the country	Equally because of water and soil problems, the chances of farming are reduce, being aquaponics a possibility to produce with sustainability and high quality, generation new sources of income and enriching experience of tourists, including agro-tourism activities.			
General objective	Develop capacities in southern islands to produce fresh vegetables in aquaponics systems to supply local hotels and population.			
Baseline				
Issues (Indicator)	**Current level**	**Proposed goal**	**Component/Result**	
Number of islands reached	0	3	ER - 1.Planning of systems and coordination with communities. .	
Number of persons trained	0	30	ER – 2. Construction and training of System in each island.	
Number of technical follow-up visits	0	3	ER – 3. Follow up of initial operations	
Structure of the Project	3 Expected results			
Component 1				
Specific objective 1	Specific:			

	a) To promote appropriate smallholder on–farm aquaponics systems and train farmers and extension staff in the efficient planning, construction, operation and maintenance of the systems. b) To do a hands-on training in construction of demonstration aquaponics systems in each of the islands

Results	**Contribution to which the result relates**	**Products and services (indicator)**	**Partners and counterparts**	**Date of achievement**
ER - 1. Planning of systems and coordination with communities.	**I**	2 aquaponics design plan	**BAIC and BAMSI**	**December, 2015**
ER – 2. Construction and training of System in each island.	**I**	3 aquaponics systems built and at least 30 persons trained	**BAIC and BAMSI**	**June, 2016**
ER – 3. Follow up of initial operations	**I**	1 monitoring and evaluation report	**BAIC and BAMSI**	**December, 2016**
Implementation strategy	IICA will coordinate with Local government on the islands selected.			
Resources	**MOE**			

Operations Cash Flow Statement

Item	**TOTAL**	**Year 1**				**Year 2**			
		1st Qtr	**2nd Qtr**	**3rd Qtr**	**4th Qtr**	**1st Qtr**	**2nd Qtr**	**3rd Qtr**	**4th Qtr**
Inflows:									
External Revenue (IICA/CARDI)									
Total Inflows									
Outflows:									
Unit/Country Expected Results									
Expected Results Code:									
Priority Action/Activity									
Purchased Fixed/ Capital Assets (8000 series)	0								
Personnel - Professional/ Retired Staff (4000 series)	0								
Personnel - Technical/Support Staff (4100 series)	$5000								
Casual Labour (4200 series)	$4000								
Professional Services (4300 series)	$4000								

General Office & Admin (5000 series)	$2000								
Info and Communication Services (5100 & 5200 series)									
Workshops, Training & Meetings (5300 series)	$15,000								
Board Meetings (54000 series)									
Local Travel (6000 series)	$10,000								
Foreign Travel (6100 series)									
Motor Vehicle Costs (6200 series)									
Materials, Supplies and Services (7000 series)	$20,000								
Field Station & Lab Expenses (8100 series)									
Subtotal	$60,000								
Total Outflows									
NET CASHFLOW									