



Gobierno de Reconciliación  
y Unidad Nacional

*El Pueblo, Presidente!*

**2013:**  
**BENDECIDOS,  
PROSPERADÓS Y  
EN VICTORIAS!**

**Republic of Nicaragua  
Proposal Submitted for the Consideration of the  
Global Agriculture and Food Security Program  
(GAFSP)**

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**PRORURAL-I: Support for Increased  
Productivity and Food and Nutrition Security in  
the Nicaraguan Caribbean Coast**

**June 01, 2013**

## ABBREVIATIONS

|            |  |
|------------|--|
| CABEI      | Central American Bank of Economic Integration                                  |
| CENAGRO    | National Agricultural Census   |
| CIPRES     | Rural and Social Research, Promotion and Development Center                    |
| DGPASA     | Agricultural Protection and Health Department                                  |
| DHS        | Demography and Health Survey   |
| ENABAS     | National Food Distribution Company   |
| FAO        | Food and Agriculture Organization of the United Nations                        |
| GABAS      | Food-based Guidelines  |
| GAFFSP     | Global Agriculture and Food Security Program                                   |
| GAP        | Good Agricultural Practices  |
| GDP        | Gross Domestic Product   |
| GFRP       | Global Food Crisis Response Program  |
| GRUN       | Government of Reconciliation and National Unity                                |
| IADB       | Inter-American Development Bank  |
| IDP        | Innovation Development Plans   |
| IFAD       | International Fund for Agricultural Development                                |
| INAFOR     | National Forestry Institute  |
| INPESCA    | National Fisheries Institute   |
| INTA       | Nicaraguan Institute of Agricultural Technology                                |
| LSMS       | Living Standards Measurement Survey  |
| MAGFOR     | Ministry of Livestock, Agriculture and Forests                                 |
| MEFCCA     | Ministry of Family, Communal, Cooperative and Associative Economy              |
| MHCP       | Ministry of Finance and Public Credit  |
| MINED      | Ministry of Education  |
| MINSA      | Ministry of Health   |
| MTBF       | Medium Term Budgetary Framework  |
| NGO        | Non-Governmental Organization  |
| PASSANN    | Project in Support of Food and Nutrition Security and Sovereignty in Nicaragua |
| PINE       | Integral School Nutrition Program  |
| PNA        | National Food Program  |
| PNAIR      | National Rural Agro-industrial Program   |
| PNDH       | National Human Development Plan  |
| PNF        | National Forest Program  |
| POLSANN    | Food and Nutrition Security and Sovereignty Policy                             |
| PPA        | Productive Food Program  |
| PRORURAL-I | Sector-wide Productive Rural Development Program                               |
| PTA-II     | Agricultural Technology Project to Support the Second Phase of PRORURAL        |
| SISEVA     | PRORURAL-I Monitoring, Evaluation and Learning System                          |
| SPAR       | Rural Agricultural Public Sector   |
| SSAN       | Food and Nutrition Security and Sovereignty                                    |
| WFP        | World Food Program   |



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## Chapter 1: Summary of Overall Agriculture and Food Security Strategy and Associated Investment Plan

### 1.1. Objectives, indicators, and past performance

1. **Agriculture is the main source of livelihood for 80 percent of rural Nicaraguan households.** About 35 percent of Nicaragua's 5.7 million inhabitants live in rural areas and look to agricultural activities for their subsistence and income generation. In fact, the socioeconomic importance of agriculture in Nicaragua is even larger than its direct contribution to national income. Comprising some 30 percent of exports (70 percent when including processed foods such as meat and sugar) and 18 percent of Gross Domestic Product (GDP), agriculture is also the single biggest employer, with more than 30 percent of the labor force, which is more than twice the average of 15 percent for the Latin America and the Caribbean region.

2. **In 2009, overall poverty in Nicaragua (measured per consumption under the LSMS) was 43 percent, compared to 48 percent in 2005.** Extreme poverty likewise fell from 17 percent to 15 percent over the same period. Rural poverty reduction was the driving force in these improved statistics, particularly in rural areas of the Caribbean Coast of Nicaragua, where extreme poverty fell 10 percentage points to 15 percent in 2009. Despite these achievements, around 2.4 million Nicaraguans still live below the poverty line, of which some 838,000 live in extreme poverty.

3. **Poverty in Nicaragua is largely rural and agricultural income is vital to poor households.** The rural poverty headcount in 2009 (63 percent) was more than twice that of urban poverty (26 percent). One in six rural households is extremely poor compared with one in twenty for urban areas. Rural households earn 60 percent of their income from agriculture, 27 percent from nonfarm activities, and 13 percent from transfers.<sup>1</sup> Agriculture has also been a main source of job creation, helping to stabilize Nicaragua's employment rate. Yet these jobs have been mainly informal, low-skilled and low income. Poverty for household heads working in agriculture is almost three times higher than for those in non-agricultural activities. Poverty is more severe in the center of the country and on the Caribbean coast, despite their high economic potential, particularly for agricultural and forest activities. Nonetheless, these areas, especially the Northern Atlantic Autonomous Region (RAAN) and the province (*departamento*) of Nueva Segovia, had some of the biggest percentage decreases in poverty from 2005 to 2009.<sup>2</sup>

4. **Nicaragua has made significant progress in child health and nutrition toward reaching the Millennium Development Goals, but still lags well behind the regional average.** Although Nicaragua has seen undernourishment fall in the last two decades from 55 percent in 1990-92 to 20 percent in 2010-12 (FAO), these levels remain among the highest in the region. The mortality rate of children under five years of age between 1990 and 2006 declined from 72 to 35 deaths per 1,000 live births. The maternal mortality rate between 1990 and 2008 decreased from 87 to 63 maternal deaths per 100,000 live births.<sup>3</sup>

5. **The Government of Reconciliation and National Unity of Nicaragua (GRUN) is implementing a Sector-wide Rural Development Program, *PRORURAL Incluyente* (PRORURAL-I), which constitutes the agricultural sector and food security strategy under the overarching National Human Development Plan 2012-2016 (PN DH).** The objective of PRORURAL-I is to contribute to equitable human development and capital accumulation of rural Nicaraguan families through sustainable natural resource use. In order to achieve food security and foster agricultural exports,

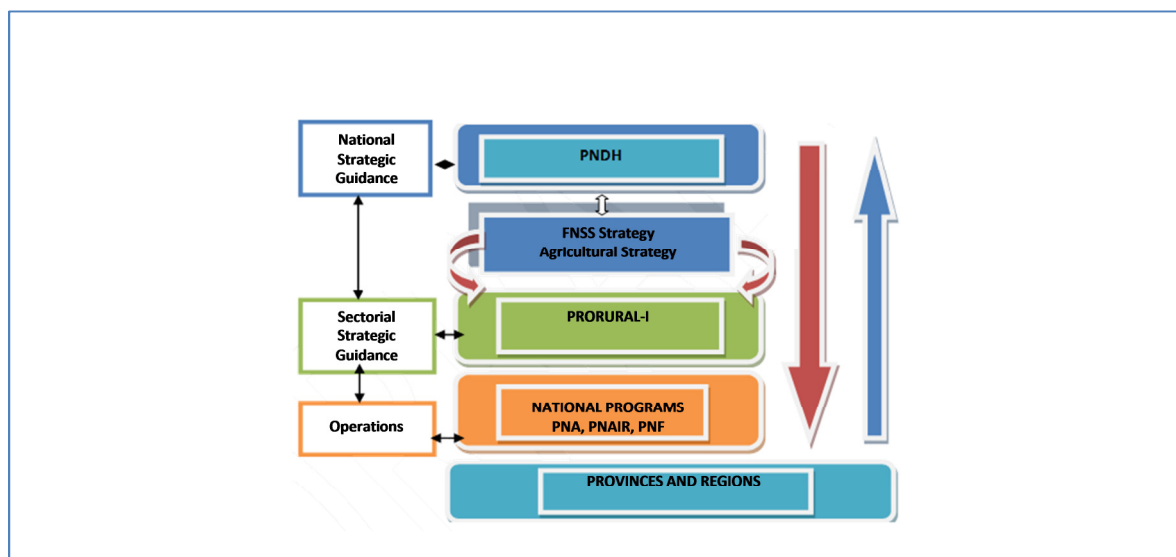
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<sup>1</sup> Living Standards Measurement Survey – LSMS (2009)

<sup>2</sup> Nicaragua has 15 Provinces or *Departamentos* and the Northern and Southern Autonomous Regions (RAAN and RAAS).

<sup>3</sup> Nicaragua – Millennium Development Goals Report (2010)

PRORURAL-I focuses on poor undercapitalized smallholders as active participants in their own sustainable human development. These target groups are also the key stakeholders of rural public policies. PRORURAL-I is derived from a 2008 sectoral strategy paper, "*La Revolución en el Sistema Agropecuario, Forestal y Rural* (The Revolution in Agriculture, Forestry and Rural System)", and also aligns with the Caribbean Coast and Upper Wangki Bocay Development Plan and Strategy toward a sustainable and equitable development model designed to spark Nicaragua's economic dynamism (see Fig. 1).



**Figure 1:** Relationship of PNDH and PRORURAL-I

6. **PRORURAL-I has three components: the National Food Program (PNA), the National Rural Agro-industrial Program (PNAIR) and the National Forestry Program (PNF).** PNA seeks to increase primary food production, thereby improving food security and access to and consumption of healthy and safe food. The largest of the three PRORURAL-I programs, PNA represents some 63 percent of PRORURAL-I spending. PNAIR, which comprises 30 percent of PRORURAL-I spending, finances innovation and entrepreneurship to aid rural producers in post-harvest value-added of their primary production (e.g., selection, packaging, processing). PNF (7 percent of PRORURAL-I spending) seeks to establish sustainable forest management and foster direct citizen participation to decrease the annual net deforestation rate and increase forest job creation and the forest sector's share in National GDP. Table 1 presents PRORURAL-I results indicators and progress through 2012.

7. **An external mid-term evaluation of PRORURAL-I (2012) highlighted important implementation results and noted the close coordination between the GRUN and its Development Partners.** PRORURAL-I was acknowledged as a good-practice example of building greater national ownership, harmonization and alignment toward continued improvement in agriculture and food security. The PRORURAL-I Sectoral Roundtable<sup>4</sup> also confirms PRORURAL-I's tight alignment with PNDH policies. The appropriate and effective instruments of PRORURAL-I, combined with its results delivery

<sup>4</sup> The Sectoral Roundtable is comprised of public sector institutions in charge of PRORURAL-I, donor agencies supporting the program, and representatives of producers' associations.

as noted in Table 1, has fostered a healthy dialogue with the private sector and external donors and promoted a number of alliances and public-private partnerships.<sup>5</sup>

**Table 1: PRORURAL-I development objective, selected indicators and progress through end-2012**

| <b>PRORURAL-I Development Objective:</b> Contribute to equitable human development and capital accumulation of rural Nicaraguan families through sustainable natural resource use.   |  |
|--|--|
| <b>Indicators (2014)</b>   | <b>Progress (end-2012)</b>   |
| <i><u>Productive Indicators:</u></i>   | <i><u>Productive Indicators:</u></i>   |
| <ul style="list-style-type: none"> <li>• Increase prioritized crop production volume (2008) by 15%.</li> <li>• Increase yields (2008) by 20% in corn and beans crops.</li> <li>• Maintain at less than 1% annual rejections of traded agricultural products.</li> <li>• Transform 16 local productive chains to value chains.</li> <li>• Integrate 15,000 families to value chains.</li> <li>• 40,000 ha. of forest under management plans.</li> <li>• Women comprise 20%, on average, of associations and cooperatives formed.</li> </ul> | <ul style="list-style-type: none"> <li>• Prioritized crop production (e.g., coffee, maize, beans, rice, beef) increased by 16%.</li> <li>• Bean yields increased by 6.3%; corn yields increased by 3%.</li> <li>• For 2010-11, 42 rejections out of 68,166 agricultural shipments (0.05%).</li> <li>• 25 value chains (cocoa, horticulture, honey, dairy, coffee, rice, beans, and meat).</li> <li>• 12,300 families integrated into value chains.</li> <li>• 59,100 ha. of forest under management plans</li> <li>• 306 associations formed, with women comprising 57% of total membership</li> </ul> |
| <i><u>Institutional Indicators:</u></i>  | <i><u>Institutional Indicators:</u></i>  |
| <ul style="list-style-type: none"> <li>• 77,000 producers receive technology transfer and technical assistance.</li> <li>• Generate 24 new technologies (10 in basic grains).</li> <li>• 3.2 million ha under phytosanitary surveillance.</li> <li>• 8,600 livestock farms added to traceability system.</li> <li>• 30% beneficiaries are women; 5% are indigenous and afro descendent.</li> <li>• 30% of technical guides for Caribbean Coast translated into indigenous languages.</li> </ul>  | <ul style="list-style-type: none"> <li>• 65,000 producers with technology transfer and technical assistance.</li> <li>• 37 new technologies generated</li> <li>• 4.2 million ha. under phytosanitary surveillance</li> <li>• 23,100 livestock farms added to traceability system.</li> <li>• 53% of beneficiaries are women; 8% are indigenous and afro descendent.</li> <li>• Greater than 30% of Caribbean Coast technical guides are now in indigenous languages.</li> </ul>  |

Source: PRORURAL-I Annual Report and Mid-Term Review (2012)

## 1.2. Key elements of the policy environment

8. **The PNDH sets policies that prioritize family, communal, cooperative and associative economy to reduce poverty and inequality, increase agricultural productivity, strengthen food security and sovereignty and adapt the country to ongoing climate change.**<sup>6</sup> PRORURAL-I operationalizes these policies in its support to rural producers via: (i) capital asset formation through a combination of transfers and loans to strengthen their production capacities; (ii) technical assistance to

<sup>5</sup> 2nd Sectorial Roundtable, PRORURAL-I (November 2012).

<sup>6</sup> *Food sovereignty* refers to: (i) the right of people to healthy, culturally appropriate food produced through ecologically sustainable methods, and to define their own food and agriculture systems; (ii) transparent trade that guarantees fair income to all and the rights of consumers to control their food and nutrition; (iii) the right to use and manage land, water, seeds, livestock and biodiversity by those who produce food; and (iv) equity in relations between men and women, ethnic groups, social classes and generations (2007 Declaration of Nyéléni, Mali).

build human capital; (iii) input subsidies and organizational support (including cooperatives); and (iv) links with other programs to facilitate land demarcation and titling, all of which are expected to ensure both families' and communities' livelihoods, increase food availability in poor homes and reduce malnutrition and poverty.

9. **The PNDH sets forth policies to protect “Mother Earth”, promote climate change adaptation, and encourage disaster risk management.** It aims to contribute to human development by reinforcing respect for natural resources and restoring lost habitats by educational means and instruments that help build accountability, solidarity and equity. To achieve this goal, cross-cutting themes in the PNDH are: (i) environmental life education; (ii) environment life advocacy and protection; (iii) forest development; (iv) water preservation, recovery, catchment and harvesting; (v) disaster risks mitigation and adaptation in the face of climate change; (vi) sustainable land management; (vii) environmental pollution regulation and control to preserve ecosystems and human health; and (viii) prevent environmental impacts from in-country economic activities.<sup>7</sup>

10. **Policies related to macroeconomic stability and socio-economic growth have helped to underpin reduced poverty and inequality.** Disciplined macroeconomic policies since 2001 continue to foster moderate economic growth in Nicaragua (including a stronger recovery from recent global crises when compared to its Central American partners). The trade regime is very open and has improved through various trade agreements (e.g., DR-CAFTA, Central America-Mexico, Central American Common Market, ROC-Taiwan, and Generalized System of Preferences, among others). The Third World Trade Organization Trade Policy Review recognizes Nicaragua's commitment to an improved multilateral trading system and its efforts to advance Central American integration.

11. **The emphasis on rural infrastructure and services provides a good basis for increasing agricultural productivity and rural incomes.** The GRUN has prioritized rural road construction, rural electrification and land titling among its major investment programs. A large scale multi-donor program is underway to raise rural access to electricity from 40 to 84 percent by 2017. The Government is implementing a large rural road program using community labor to generate local employment, and has already rehabilitated 450 km and aims to complete access to the productive sector. Since 2002, a program to regularize land holdings has seen the registration of over 224,000 parcels of land, and the titling is complete in the majority of indigenous and other lands in the RAAN. Meanwhile, a new law and regulatory agency for microfinance has supported a rebound in the sector since the global financial crisis in 2009. This is further supported by the consolidation of the public microcredit programs under the *Banco Produzcamos* in 2010.

12. **As a result, Nicaragua has seen a robust expansion in foreign direct investment (FDI) and exports in recent years, including in the agricultural and agribusiness sector.** FDI in agriculture and agribusiness in Nicaragua has risen from just over US\$8 million in 2008 to over US\$52 million in 2012. Even in the remote Caribbean coast, there have been large scale private sector investments in African palm oil (over US\$50 million with over 10,000 ha under cultivation and scope for expansion), cocoa mainly in the form of purchasing programs for small holders, a recent large investment (\$30 million) in a bamboo plantation, several investments in sustainable forestry plantations and with recent interest shown in cassava processing and rubber cultivation.

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<sup>7</sup> The 2012 Climate Scope Report ranked Nicaragua second among 26 Latin America countries assessed on their ability to attract capital for low-carbon energy sources while building a greener economy (<http://www5.iadb.org/mif/Climatescope/2012/img/content/pdfs/eng/Climatescope2012-report.pdf>).



### 1.3. Plan components to achieve the objectives

13. **While PRORURAL-I outcomes are encouraging, sustainably increasing agricultural productivity remains an unresolved challenge.** National productivity in basic grain crops such as maize, beans and rice shows a slight increase during production cycles 2007-2008 and 2011-2012 when compared to 2006-2007. However, at both provincial and regional levels, productivity has been volatile, particularly in the Caribbean Autonomous Regions of the RAAN and the RAAS. Central American coffee production is also being affected by the coffee rust disease, which is generating crop losses in Nicaragua of more than 35 percent. Indicators for PRORURAL-I show minimal gains in agricultural productivity have been achieved to date. As of 2011, yields in beans, corn and rice had increased as much as six percent, still much less than the expected 20 percent (see Table 1). Today, Nicaragua's yields in corn and rice are the lowest in Central America, while in beans it is ranked second across Central America and Mexico.

14. **Access to sufficient land and available technologies are constraints to boosting agricultural productivity.** The PNDH recognizes land tenure security as a strategy for economic development by improving productivity through expanded access to credit and facilitating free land regularization services at the local level. On average, productivity growth rates in Latin American are higher in land-abundant countries (like Nicaragua), as compared to land-constrained countries.<sup>8</sup> Yet in 2011, only five percent of Nicaragua's producers used certified seeds, 7 percent applied organic fertilizers, and 36 percent used other fertilizers, while only 15 percent of these producers accessed credit and 18 percent received some kind of technical assistance, with large differences among provinces. Only 1.3 percent of agricultural land in Nicaragua is irrigated. A key PNDH policy element is the promotion of Good Agricultural Practices (GAP). For example, surface water is being harnessed for irrigation through dams, embankments and micro-barrages as well as through rainwater harvesting, permitting production throughout two growing seasons and aiding in adaptation to prolonged drought periods caused by climate change. Under PNAIR, some 8,700 producers have adopted rainwater catchment technologies.

15. **Nicaragua is engaged in meeting the challenge of raising agriculture productivity.** The country has made strides in the generation, validation and transference of technology complemented by Good Agricultural Practices, access to financial markets, increased use of certified and improved seeds, fertilizers, and other agricultural inputs, as they bear a direct impact on efficiency of productive systems and poverty reduction (see Table 1). PRORURAL-I reflects on these needs and implements specific actions to foster agricultural development with a socially and environmentally sustainable approach. Ongoing national efforts will require continued support from international donors. Table 2 outlines the constraints, opportunities and associated activities for the three national programs under PRORURAL-I.

16. **PRORURAL-I is implemented jointly by the Ministry of Agriculture, Livestock and Forest (MAGFOR), the Nicaraguan Institute of Agricultural Technology (INTA), the National Forestry Institute (INAFOR) and the Ministry of Family, Communal, Cooperative and Associative Economy (MEFCCA).** MAGFOR is responsible for coordinating PRORURAL-I as well as sectoral planning, follow-up, and monitoring of performance indicators. MAGFOR coordinates with INTA, the public institution in charge of agricultural technology generation and transfer, with MEFCCA, which is responsible for implementing policies and programs for rural micro, small and medium enterprises, and with INAFOR, the institution responsible for promoting sustainable forest development. The newly created MEFCCA took on the responsibility of strengthening and transforming family agriculture and small agribusiness, while encouraging associations in both urban and rural areas to increase productivity,

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<sup>8</sup> IADB 2010 Working Paper entitled, "Agricultural Productivity Growth, Efficiency Change and Technical Progress in Latin America and the Caribbean"

value added and family income. The 2012 Mid-term Evaluation finds that PRORURAL-I has adjusted to well to this new sectoral reality and is obtaining strong inter-institutional coordination.

**Table 2: PRORURAL-I: Constraints, Opportunities and Activities**

| <b>Program</b>                                 | <b>Constraints/Limitations</b>   | <b>Advantages/Opportunities</b>  | <b>PRORURAL-I Activities</b>   |
|--|--|--|--|
| National Food Program (PNA)                    | <ul style="list-style-type: none"> <li>• Low agricultural productivity</li> <li>• Undercapitalization</li> <li>• High climate change risk</li> <li>• Low GAP adoption</li> <li>• Limited rural financial intermediation</li> <li>• Low technology adoption</li> <li>• Limited land access/ tenure</li> </ul> | <ul style="list-style-type: none"> <li>• Abundant water and land</li> <li>• Stakeholder consensus on need for productivity/ business plans.</li> <li>• Promote science and technology transfer for small producers</li> <li>• Strong gender indicators for PRORURAL-I</li> </ul>   | <ul style="list-style-type: none"> <li>• Matching grants/ smart subsidies for technology adoption</li> <li>• GAP technology transfer</li> <li>• Demonstration farms</li> <li>• Climate-smart technology generation and transfer</li> <li>• Community seed banks</li> <li>• Gender Policy implemented.</li> </ul> |
| National Rural Agro-industrial Program (PNAIR) | <ul style="list-style-type: none"> <li>• Uncertain credit recovery</li> <li>• Unorganized producers</li> <li>• Low value-added activity</li> <li>• Non-price barriers (certification, HACCP)</li> <li>• Poor logistics/ infrastructure</li> <li>• Thin input markets</li> </ul>                              | <ul style="list-style-type: none"> <li>• Stable macroeconomic performance and open trade environment</li> <li>• Growing private sector interest in Nicaragua</li> <li>• Improvements in land administration</li> <li>• Strong focus on rural infrastructure – roads and electrification</li> <li>• Improvements in microfinance</li> </ul> | <ul style="list-style-type: none"> <li>• Organize producers toward market access</li> <li>• Rural Road Rehabilitation</li> <li>• Value chain integration</li> <li>• Organic/ agroecological production</li> <li>• Caribbean Coast producers engaged in agribusiness</li> </ul>                                   |
| National Forest Program (PNF)                  | <ul style="list-style-type: none"> <li>• High deforestation rate</li> <li>• Low forest resource usage</li> <li>• High forest fire rate</li> </ul>  | <ul style="list-style-type: none"> <li>• Forest management plans</li> <li>• Forest species with high genetic value</li> </ul>  | <ul style="list-style-type: none"> <li>• Forest value chain inclusion for indigenous communities and cooperatives</li> <li>• Reforestation campaigns in RAAN and RAAS.</li> <li>• Community forestry</li> </ul>  |

Source: PRORURAL-I (2010-2014) and Mid-term Evaluation (2012)

#### **1.4. Planned composition and level of spending to implement the components**

17. **The PRORURAL-I investment plan totals US\$ 587 million, divided across the three national programs as follows:** PNA, US\$ 395 million or 67 percent; PNAIR, US\$ 147 million or 25 percent; and PNF, US\$ 45 million or 8 percent. The Government is now in the process of updating PRORURAL-I, drawing on the findings of the Mid-term Evaluation conducted in November 2012. This includes a 2014 adjustment of US\$ 50.0 million to address new activities under PNAIR. Other inputs to this update include: (i) Annual Sectoral Reports (2010–2012); (ii) Financial Performance Reports 2010–2012; (iii) PRORURAL-I Strategic Framework Adjustment Workshop (which includes updated LSMS findings) jointly held by the GRUN and Development Partners. The PRORURAL-I adjustment process will continue through November 2013.

18. **PRORURAL-I has maintained, on average, an annual budget execution of US\$80 million, equal to 83% of programmed resources.** Over the past five years, overall agriculture public expenditure has averaged 4.5% of the National Budget. The substantive change in the distribution of this expenditure between internal and external sources occurred over the same period, in that Development Partners

reduced their support in absolute terms while the GRUN increased the sector’s budget allocation. Despite this greater internal sourcing, the reduction in external funding – in large part due to the ongoing global financial crisis – has impacted PRORURAL-I’s overall funding envelope. Had the Development Partners been able to maintain the same growth rate in sectoral finance as that of the GRUN, agriculture’s share of the national budget would have been stable over the five-year period.

19. **Geographical targeting could be strengthened to better reach regions with agricultural profit potential, but with low productivity and high poverty and malnutrition rates.** Budget distribution of PRORURAL-I has focused on the Pacific and Central Regions, where the highest number of farmers reside i.e., the provinces of Matagalpa, Jinotega, Nueva Segovia, Madriz, Estelí, León, Managua, Rivas, with relatively less funding directed toward the Caribbean Coast of Nicaragua, i.e., the RAAN and the RAAS. Half of PRORURAL’s spending is multi-provincial, one-fourth goes to the central level in Managua, with another one-fourth spent divided among provinces. The existing resource targeting already undertaken by the GRUN could be further strengthened by improving result-based planning and budgeting processes across provinces and regions, which would entail adapting the national budget toward sectorial planning. Figure 2 illustrates the PRORURAL-I spending across departments per producer and per hectare, where large variations can be observed.

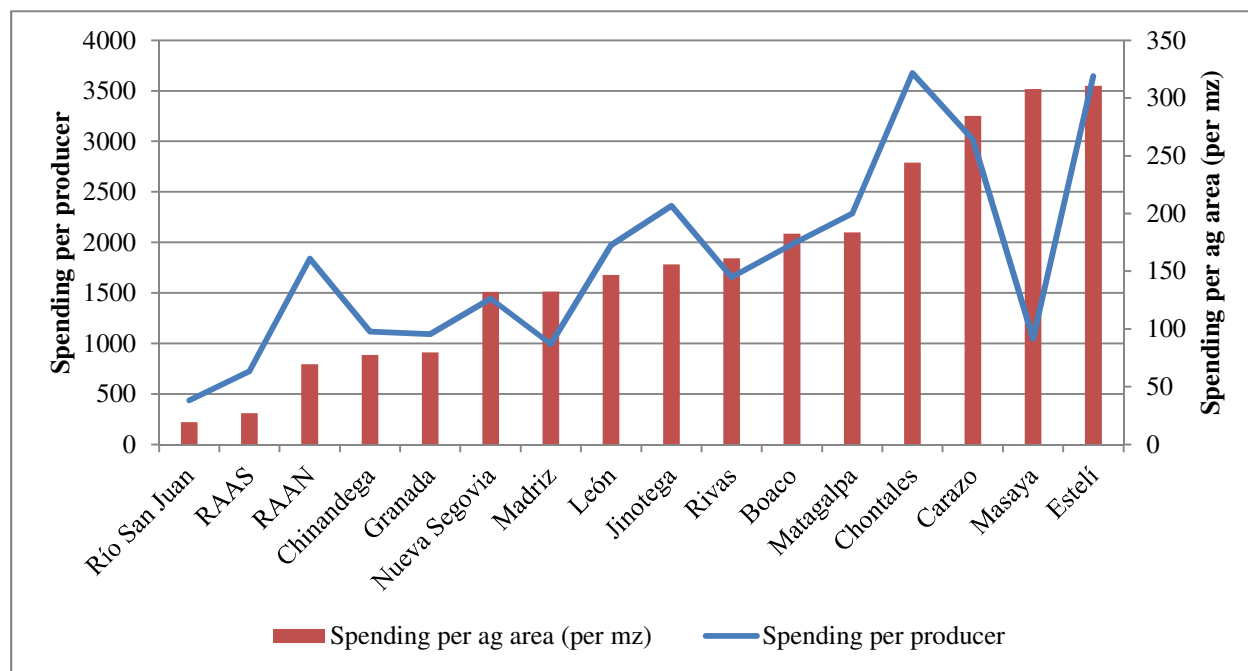


Figure 2: PRORURAL-I spending per producer and per unit of land (mz), average 2009–11  
Source: MHCP and INIDE (IV CENAGRO)

20. **Recent Public Financial Management reforms brought large improvements, but planning and budgeting, as well as monitoring and evaluation systems of PRORURAL-I should further be strengthened.** The introduction of a Medium Term Expenditure Framework has proven to be a significant step toward performance-based budgeting. The planning and budgeting could be more closely linked and there is room for sector entities and the MHCP to tighten these processes. Moreover, the quality of spending could be improved through the strengthening of the planning, monitoring and evaluation of the programs and their operational plans, including impact studies integrated into the productive sector.

## 1.5. Financing sources and gap

21. PRORURAL-I (2010-2014) is budgeted in the amount of US\$ 587 million. Current available resources total US\$446 million from the following sources: (i) US\$131million from the National Treasury (29 percent); (ii) US\$201 million from Development Partners (45 percent), including the Common Fund<sup>9</sup>; and (iii) US\$114 million from the private sector, which includes the financial sector (26 percent). The resulting financing gap totals US\$141 million (Table 3).

**Table 3: Available financing sources and financing gap – PRORURAL-I**

| Programs | Planned | Available Financing by Source |        |                |        | Financing Gap |
|----------|---------|-------------------------------|--------|----------------|--------|---------------|
|          |         | External Sources              | GRUN   | Private Sector | TOTAL  |               |
| PNA      | 395.00  | 140.00                        | 100.00 | 114.00         | 354.00 | 41.00         |
| PNAIR    | 147.00  | 51.00                         | 23.00  |                | 74.00  | 73.00         |
| PNF      | 45.00   | 10.00                         | 8.00   |                | 18.00  | 27.00         |
| Total    | 587.00  | 201.00                        | 131.00 | 114.00         | 446.00 | 141.00        |

Source: Ministry of Finance (MHCP) 2013 estimates

## 1.6 Process by which the Strategy and the Investment Plan were developed

22. **PRORURAL-I is built on a broad and nationwide participatory process.** Consultation forums were conducted across all 15 provinces and the two autonomous regions (RAAN and RAAS), attended by roughly 1,000 people, including representatives of farmer organizations, public agricultural agencies, local governments, NGOs, and the private sector. These consultations sought to build ownership around the Sector-wide Productive Rural Development Program (i.e., PRORURAL-I) and incorporate the voices of different stakeholders into the national proposal. Consultations were designed and carried out at the provincial level and included inputs from municipal stakeholders. Most inputs were provided by farmers who voiced their local interests. Provinces registering the highest participation rates were Río San Juan, León and the RAAN, while Nueva Segovia and Madriz showed the lowest participation rates.

23. **Consultation forums generated valuable information based on local knowledge and needs.** Major inputs included information on relevant productive activities and key issues to promote territorial development, including organizational strengthening, basic infrastructure improvement, environmental sustainability, institutional strengthening, poverty reduction and food security. These were included in the earlier PRORURAL (2005–2009) and were taken up for their importance and precedence<sup>10</sup> in PRORURAL-I (2010-2014), whereby the formulation of Rural Development Strategies (RDS) per province and region are set out as challenges, as they will ensure that interventions carried out by public agricultural sector institutions in target territories are linked and complemented with the RDS and contribute to the productive, economic, social and environmental development. Local stakeholder organizations monitor and evaluate PRORURAL-I implementing agencies' interventions through direct field visits to key stakeholders and by participating in local Production Roundtables, which bring together sector agencies, the private sector and farmer associations at provincial and regional levels.

<sup>9</sup> The Common Fund, established in 2005, provides budget support to PRORURAL-I from several Development Partners, e.g., Austria, Canada, Denmark, Finland, Norway, Spain, Sweden, and Switzerland. The Common Fund also serves as a technical platform for broad policy dialogue and agricultural sector planning between the GRUN and Development Partners.

<sup>10</sup> PRORURAL Impact Assessment (2005-2009)

## 1.7 Implementation arrangements and capacity to implement

24. **The Ministry of Agriculture and Forestry (MAGFOR) is the governing institution of PRORURAL-I.** MAGFOR formulates agricultural sector public policies and strategies; identifies and prioritizes public agricultural finance in regard to technology generation and technical assistance; formulates rural land policies and use of state-owned land; formulates and leads agricultural sanitary system plans and manages quarantine systems; proposes and coordinates with the Ministry of Environment on policies to protect the ecological system, focusing on water and soil conservation; proposes the delimitation of areas where agriculture, forestry, and other related activities can be established, working with the Ministry of Environment; and issues phytosanitary certificates and permits. The Nicaragua Institute of Agricultural Technology (INTA), a decentralized agency under MAGFOR, is responsible for research, development, adaptation and transfer of agricultural technologies to farmers. INTA provides the majority of public extension services in the sector. The National Forestry Institute (INAFOR), also a decentralized agency under MAGFOR, provides forest extension services, promotes sustainable forest management, and regulates forest resources to encourage reforestation. Its flagship program is community forestry management, which is mainly concentrated in indigenous territories. INAFOR policies are approved by the National Forestry Commission, which includes representatives of the RAAN and RAAS and one member from an environmental NGO. The newly created Ministry of Family Economy, Communities, Cooperatives and Associations (MEFCCA) is responsible for strengthening and transforming family agriculture and small agribusiness, while encouraging associations in both urban and rural areas to increase productivity, value added and family income. The 2012 Mid-term Evaluation notes strong inter-institutional coordination among these four agencies.

25. **Particular to the Caribbean Coast, i.e., the RAAN and RAAS,** Indigenous Territorial Governments (GTIs) represent indigenous communities' interests e.g., families sharing identification feelings, preserving their own cultural and traditional identity and values as well as particular land tenure and communal land use and own social organizations. Additionally, Regional Councils and Autonomous Governments include a broad array of participation from mestizos and Afro Descendants, civil society associations, chambers and enterprises with large agricultural production, livestock, forest and fishery companies, service suppliers and general public.

26. **PRORURAL-I is a well-established sector-wide approach program, where key stakeholders have different spaces to coordinate, support and monitor policy making and implementation.** Along with the main public institutions, other important development partners are part of this alliance. PRORURAL-I reflects on the permanent public-private dialogue with a broad number of national and territorial producers' associations, coordinating on the different challenges of the agricultural sector. Also, through the years, PRORURAL-I has developed a strong partnership with more than 15 donor agencies which have been providing technical and financial support to PRORURAL-I and have expressed support to this Proposal. Overall, this is consistent with the continued commitment of the Government of Nicaragua with the Paris/Accra Declarations and the Bussan Agreement.

## Chapter 2: Specific proposal for GAFSP financing

### 2.1 Specific objectives, expected results, and target beneficiaries

27. The objective of the GAFSP Proposal is to *promote increased and environmentally sustainable agricultural productivity in the Nicaraguan Caribbean Coast to ensure both food and nutrition security and sovereignty*. The Proposal aligns with PRORURAL-I and the Caribbean Coast and Upper Wangki Bocay Development Plan and Strategy within the overall PNDH framework. The objective is linked to the three PRORURAL-I programs (PNA, PNAIR and PNF) and would facilitate investments in technology adoption, technical assistance and training toward the adoption of Good Agricultural Practices (GAP), formation of producer associations and reinforced public-private partnerships.

28. This GASFP proposal would support increased agricultural productivity and food and nutrition security in the Nicaraguan Caribbean Coast, thereby improving living conditions of participating families. The Caribbean Coast occupies some 46 percent of Nicaraguan territory and accounts for 35 percent of livestock, 23 percent of total agricultural area, 43 percent of national forest cover, 70 percent of fish production and 60 percent of mineral resources. At present, 21 out of 22 indigenous territories have been demarcated and titled that represent over 35,000 square kilometers, benefiting 262 communities and some 150,000 people (Fig. 3).

29. The Caribbean Coast is home to six ethnic groups speaking four distinct languages. Among these, the Mayangna and Rama are direct descendants of indigenous peoples; only the Mayangna still speak their own language. The indigenous Miskitu people represent the largest ethnic majority in region and also retain their own language. The English-speaking Creoles constitute the minority ethnic group. There is also a small afro-descendent population. As women in Mayangna, Miskitu and Garífunas cultures play a significant role in agriculture, the Proposal will target them. The Proposal would promote ownership and balanced participation among these stakeholders, allowing communities and their leaders to develop organizational-proactive capacities and management to solve their problems, according to Act No. 28<sup>11</sup> and No. 445.<sup>12</sup>

Mapa del Estado de Avance del Proceso de Demarcación y Titulación de los Territorios Indígenas

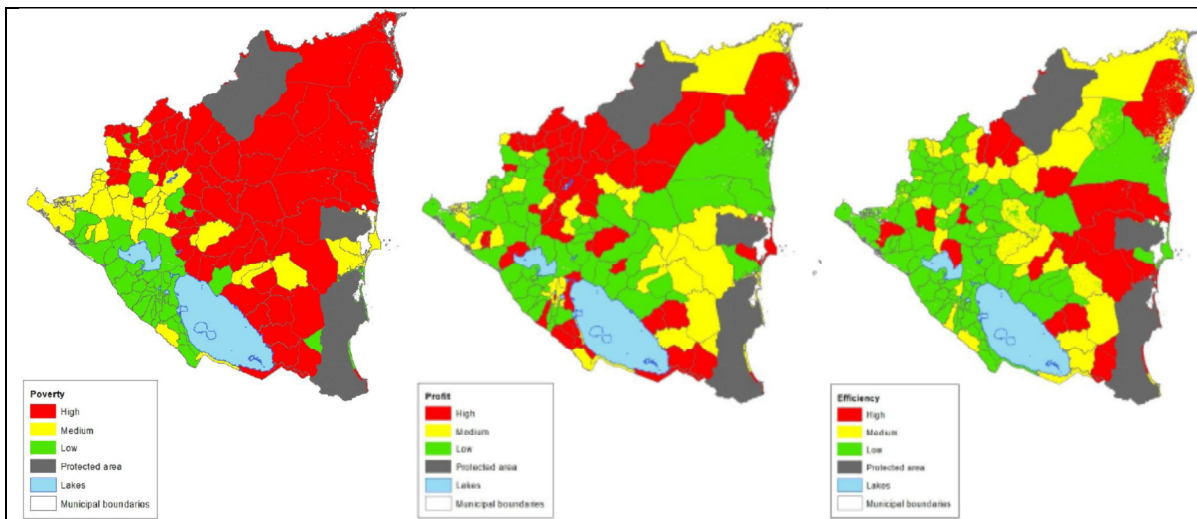


Figure 3: Caribbean Coast of Nicaragua and Indigenous Territories

<sup>11</sup> Act No. 28: “Autonomy of the Regions of the Atlantic Coast of Nicaragua”.

<sup>12</sup> Act No. 445: “The Communal Property Regime of the Indigenous Peoples and Ethnic Communities of the Autonomous Regions of the Atlantic Coast of Nicaragua and the Bocay, Indio, and Maiz Rivers”.

30. The Proposal targets the Caribbean Coast, given its high poverty rate, high profit potential and opportunities for efficiency gains. A recent geographic analysis of Nicaragua, using an econometric model, assessed farm fixed factors (i.e., capital and land), market access costs, biophysical conditions and socioeconomic factors in developing a typology in the Caribbean Coast, given its high profit potential and scope for efficiency gains (Fig. 4). The Proposal puts forth short, medium- and long-term interventions for rural producers’ integration into agricultural and non-agricultural value chains already being implemented under PRORURAL-I. In the short term, household and community agricultural production models would focus, for example, on fast-cycle crops such as basic grains and vegetables. In the medium term, models would promote additional income through perennial crops and the introduction of top-quality seeds and genetic material, as well as investment in post-harvest storage and agroprocessing. Finally, long-term agro-forestry production models would ensure environmental sustainability and promote locally endemic timber species in the RAAN and RAAS. These actions will be accompanied by technology development centers (i.e., incubators) and experimental farm construction and retrofitting, which will strengthen regional capacities for researching and generating locally adapted technologies appropriate for tropical rainforest crops. The Proposal will also help in halting the advancement of the agricultural frontier in the Caribbean Coast region, particularly as 43 percent of Nicaragua’s forests are found there. The proposed production models draw on successful experiences and lessons learned from projects in the Caribbean Coast of Nicaragua (Table 4).



**Figure 4: Micro-regions by poverty, by farmers’ profit potential, and efficiency**  
Source: IFPRI (2012)

31. The Proposal deploys a “smart subsidy” modality – given the documented low effective demand for rural finance, limited collateralization and high transactions costs on the part of rural producers in the Caribbean Coast region – consisting of a one-time capital transfer to cover up to 90 percent of the investment in needed assets and inputs by these producers. Despite the current low rural financial intermediation in the Caribbean Coast, financial institutions would be sought out as additional sources of capital finance for these rural producers.

**Table 4: PRORURAL-I – Selected Projects and Outcomes**

| <b>Project</b>  | <b>Source</b>                     | <b>US\$ Million</b> | <b>Outcomes</b>   |
|---|-----------------------------------|---------------------|---|
| Agroforestry and Silvopastoral Dev. (PADESAF)                                     | Austria                           | 0.264               | 1,676 farmers with demonstration plots and trained in GAP.  |
| Rural Development and Poverty Reduction (FOMEVIDAS)                               | Finland, Local Producers, GRUN    | 8.500               | 15 cooperatives strengthened management capacity for agricultural services; farm and non-farm vocational training for 663 youth (76% male, 24% female); improved water supply (122 wells constructed), sanitation (1,492 latrines); improved nutrition and health (54 community gardens, five school gardens); fruit and basic grains cultivation and reforestation.                          |
| Agricultural, Fishing and Forestry Development in RAAN and RAAS (NICARIBE)        | IFAD, BCIE, GRUN, Local Producers | 14.954              | 1,250 families in five RAAN territories and two RAAS territories increased rural employment by 40%, including youth and women; production increased by 25%; new income-generating activities and food security; seven territorial governments and 100 communities with functioning institutions and managing their resources; 40% of beneficiaries are women, 40% of beneficiaries are young. |
| Small-scale Producer Value Chain Inclusion and Market Access Project (PROCAVAL)   | IFAD, BCIE, GRUN, Local Producers | 37.950              | 12,900 families cost-sharing in value chain investments; forty producer organizations increased market access; 15% increase in production yields; 35% beneficiaries are women.  |
| Improved ag. prod. in indigenous/ethnic communities-Puerto Cabezas (TAWAN IGNIKA) | Japan                             | 2.600               | Agricultural extension training to some 140 promoters, 42 extensionists across 30 Good Agricultural Practices, to the benefit of 24 indigenous communities.   |
| Basic Grains Seed Production for Food Security (PAPSSAN)                          | European Union                    | 13.000              | Forty communities improved basic grain seed varieties (beans, corn, rice and sorghum); 20 community seed banks established; 35 seed grower organizations increased sales of certified seed production; 1,000 seed growers trained in crop management and post-harvest technologies. Heirloom varieties restored.  |
| Improved Plant, Animal and Forest Health Services                                 | IADB, GRUN                        | 8.000               | Maintaining the exports of agricultural products, facing the new requirements and standard of their exportation (FOB value of the top 10 Nicaraguan agricultural products). Exports increased by US\$ 754 million compared to the baseline year 2004 (US\$ 536 million).  |
| Second Agricultural Technology Project (PTA II)                                   | World Bank                        | 22.000              | 50,000 farmers access better agricultural services, technology, and innovations. 1,200 farmers (31 cooperatives) receive training/financing to improve capacity to produce certified seeds of basic grains.   |
| Support for National Development Plan Implementation                              | IADB, GRUN                        | 45.000              | Increased exports: meat products increased by 15% (goal achieved), coffee by 5% (goal achieved) and tourism 10% (goal achieved).  |
| Promotion of Sustainable Agricultural Productivity                                | IADB, BCIE, GRUN                  | 52.000              | 1,290 farmers (exceeded goal by 30%) implemented at least one new agricultural technology 13 rural enterprises constituted (goal achieved).   |



32. The Proposal would also scale-up and deepen food and nutrition education, which is a cross-cutting theme of the PNDH. In order to promote health and reduce the risk of nutritional diseases, the Food-Based Dietary Guidelines (GABAS) for Nicaragua serve as an educational tool to include nutrition recommendations in dietary composition while grounded in Nicaraguan eating habits. Project stakeholders include: male and female small- and medium-sized landholders, male and female laborers, landless producers, existing producer organizations, youth, fishermen with no equity or assets and equipment owners with no additional equity. Table 5 presents the Results Framework for the GAFSP Proposal and its alignment with PRORURAL-I.

**Table 5: GAFSP Proposal Results Framework**

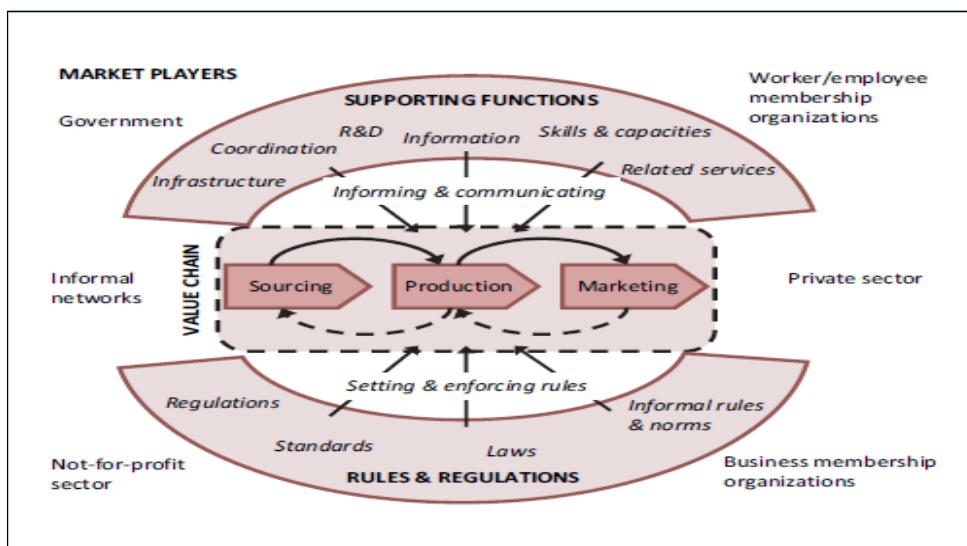
| <b>Objectives</b>  | <b>Outcome Indicators</b>  | <b>Means of Verification</b>   |
|--|--|--|
| Promote increased and environmentally sustainable agricultural productivity in the Nicaraguan Caribbean Coast to ensure both food and nutrition security and sovereignty.                                    | <ul style="list-style-type: none"> <li>• 30% in agricultural net income for 14,000 producers (at least 50% of whom are women).</li> <li>• % participating rural producers adopting climate change mitigation, adaptation and risk management practices.</li> <li>• % young people and women in leadership roles for producer organizations.</li> </ul>   | <ul style="list-style-type: none"> <li>• Impact Evaluation</li> <li>• Sectoral and Institutional Reports</li> <li>• SISEVA</li> </ul>  |
| <b>Component 1: PNA - Increased Agricultural Productivity</b>  |  |  |
| <ol style="list-style-type: none"> <li>1. Agricultural Technology Generation and Transfer</li> <li>2. GAP Capacity Building</li> </ol>   | <ul style="list-style-type: none"> <li>• % increase in agricultural yields for 12,000 participating producers implementing IDPs.</li> <li>• % of participating producers adopting at least two climate change adaptation practices.</li> <li>• 60 IDPs financed and implemented by rural producer organizations.</li> </ul>  | <ul style="list-style-type: none"> <li>• Impact Evaluation</li> <li>• Sectoral and institutional Reports</li> <li>• Supervision missions</li> <li>• Approved IDPs</li> </ul>   |
| <b>Component 2: PNAIR - Non-Farm Rural Livelihoods</b>   |  |  |
| <ol style="list-style-type: none"> <li>1. Non-Farm Entrepreneurship</li> </ol>   | <ul style="list-style-type: none"> <li>• % change in participating producers' income from non-farm sources.</li> <li>• 1,400 rural producers trained to manage family-run businesses.</li> <li>• % increase in market share for locally-produced agricultural inputs</li> <li>• 20 IDPs financed and implemented by rural producer organizations.</li> </ul>   | <ul style="list-style-type: none"> <li>• Impact Evaluation</li> <li>• Fishery and Aquaculture Yearbook</li> <li>• Sectoral and Institutional Reports</li> <li>• Supervision missions</li> </ul>  |
| <b>Component 3: PNAIR – Investments in Market Inclusion</b>  |  |  |
| <ol style="list-style-type: none"> <li>1. Food Safety and Plant and Animal Health Surveillance</li> <li>2. Strengthening Productive Organizations</li> <li>3. Strengthening Integrated Production</li> </ol> | <ul style="list-style-type: none"> <li>• % income increase from value-added activities for producer organizations implementing IDPs.</li> <li>• % farms that adopt plant traceability and phytosanitary systems.</li> <li>• % participating livestock farms that maintain satisfactory animal/plant health.</li> <li>• 20 IDPs financed and implemented by rural producer organizations.</li> <li>• % participating food processing centers that achieve HACCP certification.</li> </ul> | <ul style="list-style-type: none"> <li>• Impact Evaluation</li> <li>• Supervision missions</li> <li>• Sectoral and Institutional Reports</li> <li>• Project area field trips</li> <li>• Food Safety Service Records</li> <li>• Animal Health Inspection Records</li> </ul> |

| Objectives  | Outcome Indicators   | Means of Verification                |
|---|--|--------------------------------------|
| <b>Component 4: PNA – Reduction Childhood Nutritional Vulnerability</b> |  |                                      |
| 1. Food and Nutrition Education   | • Participating households increase dietary diversity.   | • Nutrition Assessments              |
| 2. In-school Meals  | • In-school meals increase dietary diversity.  | • Impact Evaluation                  |
| <b>Component 5: PRORURAL-I Technical Assistance</b>                     |  |                                      |
| 1. PRORURAL-I Capacity Building   | • Increased budget PRORURAL-I budget performance.  | • Impact Evaluation                  |
| 2. Improved Government Spending Management                              | • Increased satisfaction of rural producers with service provision from PRORURAL-I.  | • Sectoral and Institutional Reports |
| 3. Participants’ Planning and Organizational Strengthening              | • # Public private partnerships established and functioning.   | • SIGFA                              |
| 4. Strengthening Public and Private Partnerships                        | • # trained additional civil servants financed by government budget by 2017.   | • SIAF                               |
|   | • # PRORURAL-I institutional plans articulated and operationalized in synergy with the plans of the Councils, Regional and Territorial Autonomous Governments of the Caribbean Coast alienated to the framework of national strategies that promote the productive sector. | • SIAGRAFOR                          |
|   |  | • SISEVA                             |

33. Inappropriate production and business administration practices currently exacerbate food and nutrition insecurity given the strong barriers small producers face in accessing markets. Implementation of inappropriate production techniques, poor crop competitiveness and yields and absence of quality standards also contribute to natural resource degradation and increased rural poverty because of low commodity market prices. In this context, both public and private agencies, concerned about food safety and production sustainability, would promote Good Agricultural Practices (GAPs) jointly with different stakeholders along the agri-food chain.

## 2.2 Activities to be financed

34. The value chain approach will be a strategic tool to diversify and complement actions in the short, medium and long term to reach objectives and goals as expected towards fostering competitiveness practices. In the short term, production models will be fostered (agriculture, livestock and artisanal fishery) at the family and community level, aimed to increase food production based on fishery and fast-cycle crops such as basic grains and vegetables. Medium-term production models would focus on generating additional income using perennial crops. These actions will be accompanied by the introduction of top quality seeds and genetic material, storage facility and agro-industrial processing plant construction and retrofitting. Finally, long-term agro-forestry production models would ensure environmental sustainability and promote locally endemic timber species. The five components of the Proposal address: (i) supporting functions; (ii) regulatory environment; and (iii) core value chain interventions e.g., sourcing, production, transforming, marketing, and consumer (see Fig. 5).



**Figure 5: Public and private roles and functions across the value chain**

**Component 1: PNA - Increased Agricultural Productivity  
(US\$26.2 million total cost; US\$18.9 million from GAFSP)**

35. The component would, as part of the PNA, increase agricultural productivity and rural income based on economic and environmental sustainability and strengthened local capacities. Two proposed interventions include a combination of public goods and on-farm investments.

36. *Agricultural technology generation and transfer* would improve production yields, strengthen the public goods provision of strategic and adaptation research, and finance technical assistance to boost agricultural technology generation and transfer, increase production diversification, ensure sustainable natural resource use and build in resilience to the dynamics of climate change. These activities would reach 12,000 Caribbean Coast organized producers through technical assistance and training. Rural promoters would be trained in INTA methodologies, encouraging motivational and attitudinal changes to build local capacities and adopt generated technologies for increased production yields. Demonstration farms would be established in production areas covered by rural promoters in order to facilitate technology adoption. To ensure environmental sustainability, agricultural/livestock technologies fostering agroforestry or silvo-pastoral models would be disseminated. Also, drawing on recent innovations such as AgResults, pull mechanisms (e.g., advance market commitments) would be an incentive-based option technology generation and effective adoption.<sup>13</sup>

37. INTA Technology Innovation Offices, Technology Development Centers and Experimental Stations would be further equipped to reinforce the institutional presence of PRORURAL-I in the following communities and municipalities of the Caribbean Coast: Waspam, Bilwi, Prinzapolka, Siuna, Bonanza, Rosita, La Cruz de Rio Grande, Desembocadura del Rio Grande, El Tortuguero, Pearl Lagoon, Kukra Hill and Bluefields. These investments would permit INTA to advance technology generation and validation applicable to the Caribbean Coast and capable of mitigating the effects of climate change, thereby increasing Caribbean-appropriate crop production and productivity. Germplasm banks and community seed banks would also be financed, taking into account the experiences of technology generation and validation (agriculture and livestock) under the World-Bank financed PTA II and the EU-funded PAPSSAN (see Table 4).

<sup>13</sup> [http://www.cgdev.org/sites/default/files/1427029\\_file\\_Elliott\\_innovating\\_for\\_food\\_security.pdf](http://www.cgdev.org/sites/default/files/1427029_file_Elliott_innovating_for_food_security.pdf)

38. *GAP capacity building* would target knowledge services to rural producers to expand their production and management know-how as an input toward increased productivity. Business and financial management training and workshops would complement these knowledge services. The knowledge transfer would extend the possibility frontier for rural producers and help them to seize innovative crop management methodologies, tap into new and existing product markets, and identify new locally-appropriate production alternatives.

39. The means of packaging technology transfer (activity 1) and capacity-building (activity 2) for rural producers would be Innovation Development Plans (IDPs). The IDP would capitalize on the above-mentioned knowledge services and pool producer organizations' contributions (both cash and in-kind) with those of other stakeholders (i.e., private sector) and program funds under a matching grants methodology to finance fixed investment in on-farm innovation designed to boost both rural competitiveness and sustainability.<sup>14</sup> IDPs would include top quality, locally appropriate vegetative materials, production capacity building and climate-smart adaptation inputs and technologies to reduce related loss risks and increase productivity. External inputs (e.g., inorganic fertilizers) would be phased out over time in favor of bio-inputs validated through INTA and produced locally. Through the IDPs, producers and other interested stakeholders would determine the investments needed to adopt GAP, as well as clean technologies that can reduce CO<sub>2</sub> emissions and raise resilience while bolstering economic growth. The process of formulating the IDPs would itself strengthen producer organizations and help them to access financing and business know-how. The matching grants to producer organizations would finance up to 90% of investment costs under their respective IDPs. Anchor enterprises and financial institutions would be expected to play roles in IDP formulation and implementation, including finance. Private-sector alliances would also be sought through investment promotion via PRONicaragua.<sup>15</sup> (see Text Box 1).

**Text Box 1: EcoPlanet Bamboo: Private Sector Engagement in the Caribbean Coast**

With MIGA guarantees of US\$27 million, EcoPlanet Bamboo is financing the purchase and conversion of degraded land into commercial bamboo plantations for the sale and export of bamboo fiber. The company plans to establish a pre-processing facility for the production and sale of its Forest Stewardship Council-certified bamboo fiber. The fiber will be targeted for U.S. and multinational timber manufacturers for use in industries such as laminates and composites for construction and furniture, pulp and paper production, and the generation of renewable energy. Waste and lower value culls will be used for biomass energy to fuel the company's needs, with excess being sold to the local grid.

EcoPlanet Bamboo's decision to locate in Nicaragua confirms the great strides the country has made to attract investment. Non-traditional agricultural exports—like bamboo—are a target growth area for the country, particularly in the Caribbean Coast. The company's initial investment in Nicaragua has generated over 300 jobs in El Rama (located in the RAAS) and has restored 4,800 acres of degraded land into bamboo plantations—improving biodiversity and reducing pressure on surrounding forests.

In November 2012, EcoPlanet Bamboo became the first company to receive carbon validation through the Verified Carbon Standard (VCS) for its bamboo plantations in Nicaragua. The validation by Rainforest Alliance marks a major milestone as the VCS' first registered large-scale bamboo project. These plantations received validation for an initial 816,000 tons of carbon dioxide sequestered through the reforestation of 3,373 acres of degraded lands with bamboo forests.

Source: <http://www.miga.org/news/index.cfm?aid=3461>

<sup>14</sup> IDPs are the outcome of mapping and diagnostics conducted by local stakeholders – including rural producers -- to assess needed value chain investments in physical and human capital that enhance productivity and create the conditions for market inclusion on the part of rural producer organizations.

<sup>15</sup> PRONicaragua, the country's investment and export promotion agency, was ranked #1 worldwide in investment promotion in the 2012 Global Investment Promotion Benchmarking by the IFC. (<http://www.pronicaragua.org/>)

**Component 2: PNAIR - Non-Farm Rural Livelihoods**  
(US\$7.6 million total cost; US\$3.6 million GAFSP)

40. The component would promote innovative non-farm small enterprises and build capacities to increase participants' access to labor markets and self-employment opportunities. Non-farm activities would provide Caribbean Coast farming families with income-producing economic alternatives, such as the creation of family-community microenterprises or enterprises in support of women, youth and the disabled, business capacity building, technical assistance, all to reinforce knowledge and know-how in marketing, management, production technology, post-harvest management and entrepreneurship. Additionally, artisanal fisheries offer high potential, given its significance for a major share of stakeholders in Caribbean Coast.

41. *Non-farm entrepreneurship* would finance alternatives that complement and diversify participants' incomes, ensure food and nutrition security and train business promoters to accompany small producers throughout the entrepreneurship and plan/project management process. Alternatives noted here are the result of consultations carried out during preparation of the GAFSP proposal in *Siuna, Pearl Lagoon, Kukra Hill* and *Waspam*, including experiences under programs implemented by the MEFCCA<sup>16</sup> and INTA.<sup>17</sup> Also, private sector programs such as the Family-run Business Management Program (PRODEF)<sup>18</sup> and TAWAN ING NIKA were also considered (see Table 4).

42. These activities will be implemented through IDPs similar to those under Component 1 and could include agricultural services (e.g., grain processing, seed sales, organic fertilizer, bio-pesticides, and vermicomposting), light manufacturing (e.g., cabinetmaking, essential oil and coconut oil, pine resin extraction, fruit processing) and sustainable rural tourism. Investments to support the modernization of artisanal fisheries would benefit communities in the RAAN (Tawaira, Prinzu, Awala, Prinzu-Auhya) and RAAS (Little Corn Island, Awaltara Lupia Nani). Given the scarce income-producing alternatives available in these areas, existing validated technological models would alleviate pressure due to overexploitation of species, e.g. shrimp and lobster.<sup>19</sup> The component would support artisanal fishery improvements while observing fisheries laws and regulations and meeting sustainable fishery parameters.

**Component 3: PNAIR - Investments in Market Inclusion**  
(US\$15.1 million total cost; US\$10.6 million GAFSP)

43. This component would forge market linkages for organized producers, encouraging value-added in agricultural, livestock and fish products. These activities respond directly to the development objective of the PNAIR, which is to increase small-and medium-sized enterprise value-added by strengthening and promoting new processes in post-harvest, improved products and processes and transformation, contributing to create jobs and increase income of young, women and men of rural families, indigenous people and ethnic communities. This component aligns with the technology generation, sanitary and phytosanitary surveillance and innovation development financed under component 1. The GRUN prioritizes value chain inclusion to increase primary

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<sup>16</sup> Programs: FOMEVIDAS, PRODESEC, PROCAVAL.

<sup>17</sup> Kellogg Foundation-funded Rural Youth Program.

<sup>18</sup> This entrepreneurship model has as driving force the business development specialized in assistance and capacity building aimed at family business owners (businesspeople), teachers, consultants and young entrepreneurs.

<sup>19</sup> Private-sector company (Morgan) has validated and implemented this model in Corn Island.

production transformation, expand market access, and foster producers' business management capacities and skills in favor of young entrepreneurs and women.

44. *Food safety value-added* would ensure quality standards are met for agricultural, livestock and fish products. These investments will also contribute to maintaining currently low rejections levels of shipments (see PRORURAL-I indicators, Table 1). First, producer organizations would be sensitized as to the enforcement of sanitary regulations and controls throughout all chain levels, check listing all processes and fixing each checkpoint within selected production regulations. Second, these organizations would be provided with basic food safety, sanitary, hygiene and enforcement tools applicable throughout the value chain, eventually permitting the certification of each successive with a sufficient level of reliability, in conformity with relevant regulations. The regulatory agency, the Animal Health Department, would expand services to register new users subject to food safety regulations in artisanal production and manufacturing, storage facilities, agro-industrial plants processing animal, plant and fish products and byproducts. The foregoing will be realized by training technical staff and producers with the aim to improve livestock and plant production quality. Training will focus on Good Agricultural Practices (GAP), Good Livestock Production Practices (GLPP), Good Manufacturing Practices (GMP), Good Hygiene Practices (GHP) across fish and aquaculture production units, dairy and cheese production units, particularly artisanal production centers and storage facilities. Training would target small and medium-scale producers through communication and sanitation training campaigns oriented towards Standard Sanitary Operating Procedures (SSOP) and Hazard Analysis and Critical Control Points (HACCP).

45. *Plant health and animal health surveillance* investments would support public goods provision toward improved sanitary and phytosanitary levels by increased pest and disease control in the Caribbean Coast. Diagnostic services for products animal or plant origin would be expanded. Finance of additional plague and disease surveillance and monitoring would aid in crop loss prevention. Inspection of seed varieties (i.e., community seed banks) would permit eventual certification and ensure quality standards. Likewise, surveillance would be enhanced of existing seafood storage facilities and processing plants. Targeting training of local health promoters would also contribute to improved access to and quality of animal and plant health services.

46. *Strengthening producer organizations* would support the formation of legally constituted producer organizations. Caribbean Coast small producers tend to sell their production individually through local/foreign middlemen, who offer low prices and impose quality and volume standards and requirements that most of these producers are unlikely to meet. As such, the component would promote and strengthen producer organizations in line with territorial and communal characteristics. Organized producers can improve their competitiveness, improve management and decision-making capacities, optimize production processes and resolve problems jointly, all while respecting other participants' autonomy. Technical support via training workshops would strengthen knowledge in terms of the benefits of collective action (e.g., manuals, handbooks), managerial skills, sales, basic bookkeeping, local economic development and agribusiness. The component would also finance the training of commercial and partnership (associative) promoters responsible for providing technical and business assistance to these emerging organizations.

47. *Value added IDPs*, similar to those financed under components 1 and 2, would support income diversification for vulnerable populations and young people to mainstream them into income-producing activities, scaled-up crop loss reduction in the Caribbean Coast and small producer integration into value chains. Support to producer organizations in the formulation of value-added IDPs would ensure primary production processing and access to local and domestic markets. For example, consultations during the GAFSP proposal preparation confirm that cassava processing offers opportunities in Kukra Hill and Siuna. In the fisheries value chain, cold chain

investments would work to strengthen sanitation conditions and ensure seafood safety. There is also strong potential for scaling up successful programs in the cocoa sector (see Text Box 2).

**Text Box 2: Cocoa farming in the Caribbean Coast - two scalable programs**

Building on a successful program in the Pacific region in the coffee sector, Ecom (a large international commodity trader) and IFC have recently embarked on an effort with other donors (GTZ, UNIDO and Lutheran World Relief) to roll out next-generation extension services to **cocoa farmers** in the Caribbean Coast. The project is developing customized technical content on cocoa renovation and rehabilitation, best-practice training materials for farmers, support for certification, and an IT-based farm-level monitoring capability. The program targets over 3,000 farmers who are linked into the supply chain.

A second program, financed by the Japanese Social Development Fund and implemented by a regional coalition of indigenous NGOs (ACICAFOC) also targeted the cocoa sector. Focusing on Afro-descendant and indigenous farmers in the RAAN. The project used "farmer field schools" with an emphasis on women farmers to strengthen the capacity of indigenous organizations. Activities include: (i) development of integrated management systems for agro-forestry on around 1,000 small cocoa farms; (ii) improved marketing to international fair trade chocolate companies; (iii) capacity building in social, commercial and environmental management; and (iv) grants for financing subproject investments.

48. *Market information and financial services* would contribute to a favorable environment that nurtures improved small enterprise performance through equitable access to: (i) market infrastructure; (ii) rural financial services; and (iii) price and market information. The 2011 National Agricultural Census confirms that of the nearly 265,000 farmers nationwide, only 15% received credit for the 2010-2011 crop year. Financial intermediation is particularly scant in the Caribbean Coast and is a primary justification for the one-time matching grant approach under the IDPs. Territorial, regional, national and international trade fairs would be financed, drawing on lessons from the FOMEVIDAS Program (see Table 4). Farmers' markets are also instrumental to scale-up production and sales and also foster exchange of experiences. Investments in applications for smartphones and other ICT would link rural producers to market data sources that would reduce information asymmetries and increase bargaining power.

**Component 4: PNA – Reduction Childhood Nutritional Vulnerability  
(US\$6.5 million total cost; US\$4.7 million GAFSP)**

49. *Food and nutrition education and school feeding* would complement ongoing activities to increase nutrition for schoolchildren and promote their consumption of autochthonous produce. PRORURAL-I, under the PNA, includes actions aimed at one of the main challenges faced in the Caribbean Coast of Nicaragua: food security and nutrition of poor families. The School Feeding Program and other social food programs are critical to keeping children in school, improving their learning and health and promoting food security. The GRUN seeks to create a new generation of sustainable and effective in-school meal programs by establishing community school gardens, emphasizing nutritional education – in line with GABAS<sup>20</sup> – and tapping local farmers produce.<sup>21</sup>

<sup>20</sup> The GABAS will provide information in terms of diet and healthy lifestyle, taking into account culturally acceptable foods and population resilience; therefore, the stakeholders will change attitude in a sustained and permanent impact on the reduction of diseases related to malnutrition, both in deficit excess.

<sup>21</sup> This is similar to Brazil's National School Feeding Program, which requires that 30% of foodstuffs be sourced from local family farmers (National Law 11.947 [http://www.planalto.gov.br/ccivil\\_03/\\_ato2007-2010/2009/lei/111947.htm](http://www.planalto.gov.br/ccivil_03/_ato2007-2010/2009/lei/111947.htm))

According to the World Bank<sup>22</sup>, School Feeding Programs in poor countries may have significant educational benefits related to attendance, improved student learning and classroom performance, particularly if accompanied by complementary interventions, such as deworming and micronutrient-fortified biscuits or micronutrient supplementation.

**Component 5: PRORURAL-I Technical Assistance  
(US\$4.6 million total cost; US\$4.2 million GAFSP)**

50. This component would improve the effectiveness of PRORURAL-I and its executing institutions in administrative and financial management in collaboration with the private sector and in line with the institutional mandates of MAGFOR, MEFCCA, INTA and INAFOR. To deliver high-quality and relevant public services, these PRORURAL-I implementing agencies and their partners must strengthen their capacities and skills and further enhance their ability to monitor and evaluate the program. Knowledge management is a key element for continuously improving public services delivered to rural producers. Concurrently, capacity building can bolster ownership and harmonization toward better structured interventions. The private sector also plays a vital role in terms of service provision (e.g., financial access, agricultural inputs, specialized technical assistance) and contributing to greater market access for rural producers as part of the Grand Alliance expressed in the PNDH (i.e., Public Sector, Private Sector, Workers).

51. The demand for technical assistance and training to increase crop productivity focuses on technology innovation, sustainable forest development, and livestock health and food safety. However, the public sector institutions responsible for PRORURAL-I require partnerships and alliances to build the capacity and services required to develop all steps of the value chain such as transformation, processing and sales, as well as organization, administration and management.

52. *PRORURAL-I Implementation Capacity Building* would support the MAGFOR, MEFCCA, INTA and INAFOR to increase their nationwide coverage, deliver higher-quality services to small- and medium-sized producers, strengthen public-private partnerships, expand technical staffing, train rural promoters, increase technical analysis capacity, and improve technology access, including computing, office, and other equipment to aid in communication and knowledge management.

53. *Improved Government Spending Management* would promote the implementation of a result-based budget process for PRORURAL-I, so that key decisions are tied to expected objectives, goals and outcomes reached by programs and public policies throughout the life-cycle (e.g., formulation, approval, implementation, monitoring and evaluation). The development of an appropriate fiscal policy management instrument that provides timely public sector income and expenditure data would improve decision-making and increase the efficiency of government spending in the sector. Information technology is critical to improve government administration and financial management, particularly computing systems that process, store and display government financial management information. The four PRORURAL-I implementing agencies employ different information systems, such as: (i) the Integrated Financial Management System (SIAF); (ii) the Integrated Financial and Administrative Management System (SIGFA); and (iii) Agriculture and Forestry Information System (SIAGROFOR). The integration of these systems would consolidate databases, streamline fiduciary responsibilities and improve public sector budget decisions and financial performance, including the generation of public sector financial statements and reports.

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<sup>22</sup> World Bank Publication, 2009: “Rethinking School Feeding: Social Safety Nets, Child Development, and the Education Sector”.



54. *Improved analytical capabilities of staff in planning, budgeting and reviewing* would improve the quality of sector public spending. Program reviews would be strengthened to assess whether the budgeted programs have delivered the expected outcomes—and independent evidence-based impact evaluations for all large programs would be carried out. Annual operational plans would be evaluated before allocating new resources. Finally, better analytical capabilities of planning and budgeting would increase the quality of interpretation of reports coming from the information systems.

55. *Rural Producer Organizational and Management Strengthening* would support formation of producer organizations, both in the Caribbean Coast and nationwide, and finance activities that aid them in identifying and diagnosing demands and associated problem-solving activities toward the formulation and implementation of Innovation Development Plans, such as those that would be financed under Components 1, 2 and 3 of this Proposal.

56. *Strengthening Public and Private Institutions* would contribute to the creation of a Territorial Coordination Agency and establish the conditions to enable the Central American Territorial Rural Development Strategy (ECADERT), elements of which include: (i) the formalization of the facilitation strategy and the territorial management team; (ii) sensitization and advice to key private partners and dissemination of the territorial management process; and (iii) collection and preparation of relevant information to identify stakeholders and arrange territorial management organization and participatory territorial planning.

### **2.3 Implementation arrangements**

57. Institutional arrangements for implementation of the GAFSP Proposal would build upon those already in place for PRORURAL-I (see Sect. 1.7). MAGFOR coordinates PRORURAL-I, working jointly with MEFCCA, INTA and INAFOR. Additionally, regional, municipal and indigenous territorial governments in the targeted regions of the Caribbean Coast would also play a role as would INPESCA. These institutions will implement the Proposal components and activities jointly with RAAN/RAAS regional autonomous governments, underpinning existing local coordination structures (producer roundtables and rural development grassroots organizations). The Caribbean Coast Development Council (CDCC), chaired by the Presidential Secretary for the Caribbean Coast and comprised of a broad group of national and territorial institutions and leaders, will ensure consistency between the Project strategies/actions and national policies.

58. The activities of the GAFSP Proposal would be led by a National Coordination Committee comprised of MEFCCA, the Executive Secretariat of the Caribbean Coast Development Council (SDCC), and representatives of MAGFOR, INTA, INPESCA and a representative of each Regional Government (RAAN/RAAS). The Committee chair would be appointed by MEFCCA. The National Coordination Committee would interface with territorial Governments of the RAAN and the RAAS in coordination with MEFCCA decentralized offices there.

59. Whereas the RAAN and RAAS are autonomous territories, indigenous territorial and community governments also have autonomous legal status. The GAFSP Proposal would develop coordination and support relationships within these jurisdictions, pursuant to current legislation. All activities of the Proposal would be executed in conformity with Law 445 and Municipal Authorities must coordinate with Territorial and Communal Authorities and respect their rights.

60. Under the Proposal, INTA would provide technical assistance for agricultural technology generation and transfer pertaining to agro-silvopastoral and/or culture systems. INPESCA would promote artisanal fishery, guaranteeing sustainability, environmental balance, and social and economic equalization across the Nicaraguan Caribbean Coast. MAGFOR would be responsible for animal and plant health and safety and would accompany producers in the production

certification process, from input selection through post-harvest. MEFCCA would support the participating producer organizations throughout the value chain, coordinating with other government agencies, to strengthen their business and production capacities and link them with local, regional and national markets.

## 2.4 Amount of financing requested

61. The total cost of the four components which complement PRORURAL-I interventions in the Caribbean Coast is US\$60.0 million. Available finance from the GRUN totals US\$7.3 million; the Development Partners have contributed US\$10.7 million. The GRUN therefore requests US\$42 million from the GAFSP to close the financing gap for the proposed interventions in the Caribbean Coast (Table 6).

**Table 6: GAFSP-funded Consolidated Components (US\$ Million)**

| GAFSP Components                                    | Component Cost | GRUN       | Development Partners | Total Available | GAFSP 1     | GAFSP 2     |
|---|----------------|------------|----------------------|-----------------|-------------|-------------|
| 1. PNA: Increased Agricultural Productivity         | 26.2           | 3.3        | 4.0                  | 7.3             | 18.9        | 15.1        |
| 2. PNAIR: Non-Farm Rural Livelihoods                | 7.6            | 2.0        | 2.0                  | 4.0             | 3.6         | 3.6         |
| 3. PNAIR: Investments in Market Inclusion           | 15.1           | 1.1        | 3.4                  | 4.5             | 10.6        | 8.4         |
| 4. PNA: Reduced Childhood Nutritional Vulnerability | 6.5            | 0.8        | 1.0                  | 1.8             | 4.7         | 4.7         |
| 5. PRORURAL-I: Technical Assistance                 | 4.6            | 0.1        | 0.3                  | 0.4             | 4.2         | 4.2         |
| <b>TOTAL</b>  | <b>60.0</b>    | <b>7.3</b> | <b>10.7</b>          | <b>18.0</b>     | <b>42.0</b> | <b>36.0</b> |

Source: PRORURAL-I 2010-2014, Medium Term Budgetary Framework 2013-2016, Budget Performance MHCP 2007 – September 2012, Central Bank of Nicaragua (Exchange Rate 2007 – November 2012)

62. **Priorities in case of reduced GAFSP funding:** In the event that the GAFSP reduces the requested amount (i.e., GAFSP 1 in Table 6 above), a reprioritization would: (i) scale back components 1 and 3 and associated costs by 20%; and (ii) maintain components 2, 4 and 5. The reprioritization would reduce the amount requested from GAFSP to US\$36 million (i.e., GAFSP 2 in Table 6).

## 2.5 Preferred supervising entity and government team

63. The World Bank has been selected as the Preferred Supervising Entity. Nicaragua enjoys a long history of close collaboration with the World Bank in the public agricultural and rural sector. The World Bank is also a member of the Board of Donors for PRORURAL-I, has a series of active operations in the agricultural and rural sector, and has played a lead role in switching the project approach to a programmatic approach by supporting the first Agriculture Sector-wide Approach (SWAP). The core GRUN team responsible for finalizing the GAFSP Proposal, led by the Minister of MAGFOR, the Minister of MEFCCA, Executive Director of INTA and INPESCA, Director of SDCC, would include the technical team of the governmental institutions.

## 2.6 Time frame of proposed support

64. The interventions proposed would be implemented over a four-year period (2014-2017), which largely aligns with the time lines for the PNDH (2012-2016) and would be concurrent with the implementation of PRORURAL-I (2010-2014).

## 2.7 Risks and risk management

65. Table 7 outlines risks and mitigation measures identified as well as the agencies responsible for risk management.

**Table 7: Risk Mitigation Matrix**

| <b>Risk</b>  | <b>Risk level after mitigation</b> | <b>Mitigation Measures</b>  | <b>Responsible Entity</b> |
|--|------------------------------------|---|---------------------------|
| <b>At the PRORURAL-I Level:</b>  |                                    |   |                           |
| GRUN/ Development Partners unable to close PRORURAL-I financing gap.   | Medium                             | Periodic sectoral working group meetings reinforce mutual financial commitments to PRORURAL-I;  | MAGFOR                    |
| Weak institutional coordination among implementing entities and stakeholders reduces PRORURAL-I effectiveness. | Medium                             | Broad participation and consultation of PRORURAL-I maximizes stakeholder commitment to objectives and interventions   | MAGFOR                    |
| <b>Risks at the GAFSP Level:</b>   |                                    |   |                           |
| Producer organizations reluctant to adopt climate-smart GAP to boost yields.                                   | Medium                             | Self-selection and cost-sharing of producer organizations ensures ownership; demonstration plots promote merits of innovation.  | MEFCCA/<br>MAGFOR         |
| Producer Organizations unable to formulate and implement IDPs.   | Medium                             | Knowledge services would provide options for innovations to be financed under IDPs; training would include procurement, financial and environmental management.   | MEFCCA/<br>MAGFOR         |
| Private sector and financial institutions unwilling to co-finance IDPs.  | Medium                             | Investment facilitation (PRONicaragua) would aid in building private sector alliances; consultations during preparation indicate financial sector readiness; matching grant approach creates incentive for counterpart financing. | MEFCCA/<br>MAGFOR         |

## 2.8 Consultation with local stakeholders and development partners

66. A comprehensive consultation process was undertaken in two levels. First, the development partners of the productive sector were consulted on two occasions: (i) Food Safety Roundtable (Jan/31/2013), where the participants expressed the importance of including different issues in the proposal, such as: land demarcation and titling, clear explanation of the Caribbean Coast needs and situation, formulate a integral project link with the main goals of the PRORURAL-I, soil degradation in RAAN and RAAS, and climate change mitigation; and (ii) PRORURAL-I Roundtable (Apr/25/2013), where the development partners voiced the following observations for improving the proposal: private and public sector articulation, private sector investment and support of the small producers, highlight the main projects linked with PRORURAL-I actions at national

level and the two Autonomous Regions (experiences, lessons learned, intervention area, among others), promotion of agricultural technologies in order to reduce the climate change impact, contextualize the proposal to the Development Strategy of the Caribbean Coast, provide clear information in terms of food security and nutrition, and sharpen the analysis of the PRORURAL-I financing gap. (Annex 3)

67. Second, small local producers were consulted on three occasions across the Caribbean Coast: (i) Siuna (Feb/01/2013); (ii) Pearl Lagoon and Kukra Hill (Feb/19/2013); and (iii) Waspam (March/01/2013). These consultations were attended by diverse organizations acting on behalf of Nicaraguan Caribbean Coast producers (agriculture and fishery), individual farmers, women, young people, business people and the private sector. Before carrying out the consultations in these locations, a methodology was developed to ensure implementation jointly with participants and ensure appropriate convening of stakeholders with support from local authorities, government agencies and the Caribbean Coast Secretariat. Each of these three consultations is detailed below.

68. Siuna Consultation Process: Phase 1 was devoted to producers and they became familiar with the national proposal to apply for GAFSP funding. Local stakeholders set out problems and likely solutions to ensure improved productivity in basic grains, livestock, perennial crops, etc. They also presented non-agricultural alternatives. Phase 2 referred to a focus group discussion held with women and young people, who set out proposals to foster their economic participation. Meeting feedback helped inform the Components under Part 1, in areas such as: (i) Productivity: Improved cultivation systems, non-traditional crops, technical assistance, training, plant and animal health, strengthening existing cooperatives, creation of new organizations, production infrastructure, production value added, agro-industrial plants, genetic improvement, organic agriculture, increased access to financing, improved high-quality seeds (seed banks), production and land regularization strategies, inter alia; and (ii) Non-Agricultural Activities: Essential oil manufacturing (volatile oils), environmental impact assessment, handicrafts (cactus, coconut, bamboo and precious stones), reforestation program (cactus), cabinetmaking, seeds sales, recycling project, baking, ornamental plant nurseries, sewing workshop, aquaculture/fish farming, honey marketing/harvesting/sales, organic fertilizer fertilizers, youth technical training, financing (cacao, among others), fruit processing (wine, vinegar), free zones, support food/craftworks/imitation jewelry entrepreneurs, advertising and marketing microenterprises, sports and recreation centers (youth), information technology centers (virtual libraries) and agricultural input manufacturing/sales.

69. Pearl Lagoon/Kukra Hill Consultation Process: Participants' feedback reflected support in favor of productive sector (willingness to establish Technology Development Centers or Experimental Stations to generate, validate and transfer wet tropic adapted technologies, increase productivity, diminish historical losses seen in roots and tubers and increase income by accepting the establishment of a new processing plant), fishery and income-producing economic alternatives that give them more opportunities to tap into new business that may be further developed if more training, technical assistance and citizen's consultations are provided. Among alternatives that may be developed by producers and also may apply for GAFSP funding as part of rural non-agricultural livelihood improvement, they proposed: Baking/confectionery, coconut manufacturing, fishery (fishing gear and equipment), sewing workshops, cabinetmaking/carpentry workshops (in support of women and youth), handicrafts, beauty parlors, event planning micro enterprises (weddings, birthday parties, funerals, etc.), decoration training, piñata making, agro-ecologic tourism, beauty shops, support women in the creation of fast /homemade food companies (sour milk, curd cheese or other products) and the establishment of women-supportive artisan market places as platform to showcase their products.

70. Waspam Consultation Process: Participants proposed complementary solutions that would benefit indigenous communities, based primarily on existing Territorial Development Plans, those recommendations were focused mostly on the productive sector, including: creation of seed banks and Technology Development Centers or Experimental Stations to generate, validate and transfer wet tropic adapted technologies, increase agricultural productivity (basic grains, roots, tubers, musaceae, fruits, etc.), livestock (small livestock and large livestock) and fishery (improved fishing methods and tackle), use of local resources, provide more technical assistance and training in agriculture, forestry, marketing, sales, value added, financing opportunities, safe markets as production target destination, agro-industry promotion (storage facilities, production surplus management techniques, citrus processing plant, etc.), support women and increase income by accepting the establishment of a new processing plants, other value adding actions already developed by producers. On the other hand, non-agricultural income-producing options may be developed during Caribbean lobster closed seasons or in parallel with current activities in the target territories, such as: handicrafts, cabinetmaking, green community tourism, pejobaye value chain, non-timber products, bakery/confectionery, clothing and apparel sales, basic grain sales and storage facilities, mining equipment and supplies (gold), tailor's shops, organic fertilizers, beekeeping (bees), resin harvesting, fish farming (tilapia) and vermicomposting; all these activities are crosscutting themes oriented towards women, youth and persons living with disabilities (PLWDs).