



# National Coordination and preparation of the draft of the National Agroforestry Policy

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## Abbreviations and Acronyms

AF	Agroforestry
AFS	Agroforestry system
AMAF	ASEAN Ministries of Agriculture and Forestry
ASEAN	Association of South-East Asian Nations
ATWGARD	ASEAN Technical Working Group in Agricultural Research and Development
BLPA	Belize Livestock Producers Association
CATIE	Tropical Agricultural Research and Higher Education Center (acronym in Spanish)
CC	Climate Change
CGIAR	Consultative Group on International Agricultural Research
COP	Conference of Parties
CTCN	Climate Technology Center and Network
FAO	United Nations Food and Agriculture Organization
FTA	Forests, trees and agroforestry
IUCN	International Union for Conservation
PDT	Policy Development Team
MAG	Ministry of Agriculture and Livestock
NAFC	National Agroforestry Council
REDD+	Reducing Emissions from Deforestation and Degradation Plus
TA	Technical assistance
TCGA	Toledo Cacao Growers Association
TFCGA	Trio Farm Cacao Growers Association
TIDE	Toledo Institute for Development and Environment
UB	University of Belize
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change



## Introduction

### Output 5 in CATIE's technical assistance

The objective of CATIE's technical assistance (TA) is: "To develop an integrated and comprehensive Agroforestry (AF) policy framework that will aid in mainstreaming this form of land use countrywide, providing practical knowledge and skills to the national team (National Climate Change Office, the Agriculture Department and the Forest Department) to understand and use a tested and successful process to develop a National AF Policy (NAFP) for Belize.

Based on the Terms of Reference of the "Development of an integrated and comprehensive AF policy for Belize Technical Assistance", CATIE is submitting Output 5, i.e. National Coordination and Preparation of the draft of the National Agroforestry Policy.

**Deliverable 5.1-** Technical Guideline draft to set up a national task force to mainstream agroforestry.

**Deliverable 5.2-** Technical Guideline report, product from the interview with key groups and individuals at national level that allow mainstreaming agroforestry in Belize.

**Deliverable 5.3-** First draft of the national agroforestry policy

These Output 5 deliverables correspond to specific objective 6 of the TA which is "Coordinate and prepare a draft of the national agroforestry policy".

### Importance of Agroforestry and as a strategy to adopt to climate change

Agroforestry systems (AFS) are multifunctional systems that can provide a wide range of economic, socio-cultural and environmental benefits. Most AFSs aim to increase or maintain production and productivity of farming systems; reduce agricultural inputs and thus reduce production costs; and diversify production through a variety of possible tree products; for example, food, fodder, timber and other building materials and fuel wood. AF promotes biodiversity and produces various ecosystem services. Thus, they provide and receive ecosystem services and disservices. These agroecosystems provide direct services and the management of their ecosystem determines the delivery of those services (Palacios, Bucheli & Bokelmann, 2017).

AF is not a new practice but instead it has been a common traditional way to produce food, fodder, fibre and fuels. Furthermore, developing AF for food production can also



help in the mitigating the challenges of climate change, environmental degradation and biodiversity loss (Vi Agroforestry, 2020).

Based on the REDD+ scheme and plans, having AFS can help combat or reduce greenhouse gas (GHS) emissions from deforestation and forest degradation by forest conservation of forest carbon stock through carbon sequestration either on trees or in soils. AF practice such as woodlots, conservation of riparian forest, forest buffers, intercropping and silvo-pastoral systems are way that can assist in carbon sequestration.

Belize has committed itself to developing, adopting and implementing policies to mitigate the effects of climate change through the National Determined Contribution (NDCs) and projects like REDD+. NDC has placed a great emphasis on sustainable forest management as a way to combat climate change through AFSs. Having AFS eliminated the GHG emissions associated with agrochemical leaching and releasing into the air and also minimizes the release of GHG from soil degradation. AF is an adequate strategy to implement in Belize and its importance is well known; however, its implementation has been fragmented.

For this reason, the country saw the need to develop and is developing a National Agroforestry Policy (NAFP) which will set a clear roadmap for mainstreaming of AF in both large and small-scale farms, build research capacity and establish new AF projects countrywide.

## **Belize country profile**

Belize is a small subtropical country (22,966 km<sup>2</sup>) which was occupied solely by the Maya people before the arrival of the Europeans and prior to becoming a British colony (Mitchell et. al, 2017). Belize, formerly known as British Honduras, is located on the east coast of Central America facing the Caribbean Sea (15°53'-18°30'N; 87°15'-89°15'W). The country is bordered on the west and south by Guatemala and on the north by Mexico. The western, south-western and southern part of the country holds the "Mayan Mountains", whereas the entire coast and northern part of the country corresponds to the "Low Plains" (Rosa Cruz, 2010 FAO 2018).

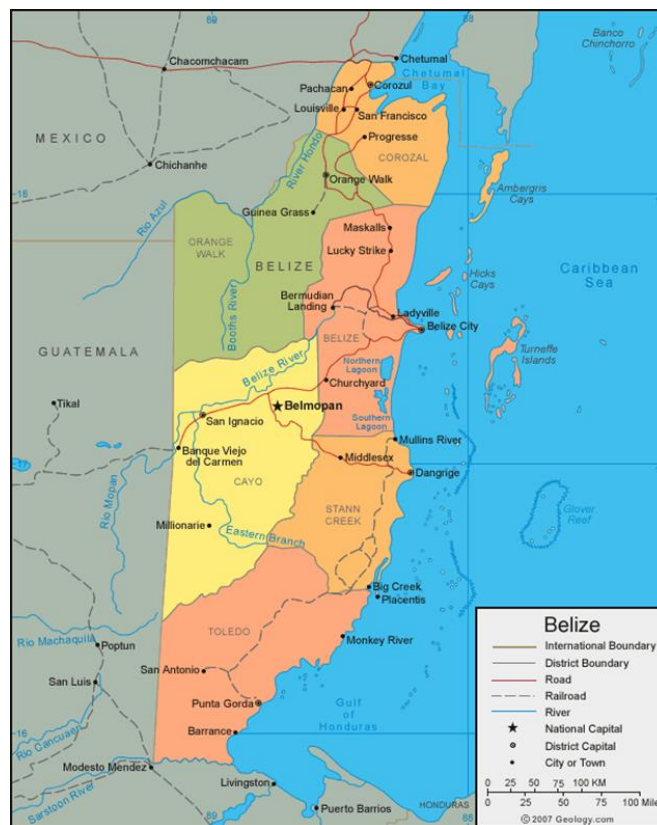
Belize has three distinct physiographic regions: i) the flat northern lowlands, with a complex mosaic of lowland, semi-deciduous feet, savannahs, freshwater rivers and wetlands, with saltwater lagoons and mangroves along the coast; ii)the southern coastal plain that supports the tropical pine and broadleaf forest; iii)the Maya Mountains of granite quartzite's and shales. Seventy ecosystems have been identified within these broad categories (Salas and Shal, 2015).



The country holds approximately 1,014 native species of vertebrates and 3,411 native species of plants. The forest cover is estimated in 60% of land area. Over 100 protected areas cover 35% of the country's total land area and 10.6% percent of the country's total sea area allowing in total protected areas to cover 22.8% of country's national territory (Kay & Avella, 2010).

The country is populated with more than six different ethnic groups each with its unique cultural traditions and languages (Kay & Avella, 2010). Belize's current estimated population is 408,487 inhabitants. Of these 44.71% (182,663) live in urban areas, while 55.28% (225,824) live in rural areas (SIB, 2019). Belize has a small economy, and it mainly depends on tourism and agriculture; these two sectors account for more than half of Belize's economy; and agriculture alone contributes 13.6% of GDP (SIB, 2019; Gob, 2015).

**FIGURE 1. ADMINISTRATIVE & POLITICAL MAP OF BELIZE**



The agriculture sector in Belize is characterized by three main sub-sectors (Avila 2011):



1. A fairly well-organized traditional export sector for sugar, banana, citrus, and marine products.
2. A more traditional, small-scale farm and farming family sector producing food mainly for local consumption.
3. A well-integrated large-scale commercial sector, basically the Mennonite communities, who are leaders in the basic grains, cattle, poultry, and feed industries.

It has been estimated that approximately 0.83 million ha, or 38% of the land area, are suitable for agriculture, and about 15% of this amount is under farming every year. A 2010 census of farms in Belize shows that 24% of farms have less than 2 ha, 33% between 2 and 8 ha, and 74% of farms in the country are below 20 ha. It is estimated that 24,290 ha is in sugarcane, 17,000 ha in citrus, 15,400 ha in corn and 60,730 ha in pastures grazed by some 80,000 head of cattle. A new national census was planned for 2020 to update these data, but due to Covid-19 it has been postponed to 2021.

## **Technical Guideline: National Agroforestry Development Team**

The development of the technical guideline was conducted with the support of both the project coordinator and with the consultation and approval of the National Climate Change Office (NCCO) along with the input of the CEO, Dr. Percival Cho, from the Ministry of the Fisheries, Forestry, The Environment and Sustainable Development (MFFESD).

In the meeting with the NCCO the status of the draft of the Technical Guideline was discussed, and a decision was made to change the name of the team from National Task Force to National Agroforestry Development Team. The main responsibility of the team is to oversee the agroforestry formulation process and provide feedback on the document.

Below you can see the technical report documentation of the Technical Guideline of the National Agroforestry Development Team.

### **Guidelines for National Agroforestry Policy Development Team**

National Office for Climate Change/CATIE (July 17, 2020)



## Background

The Technical Assistance “Agroforestry Policy for Belize” responds to a request of the Government of Belize to the Climate Technology Center and Network (CTCN). The CTCN is the operational arm of the United Nations Framework Convention on Climate Change (UNFCCC) and it is administered by the United Nations Industrial Development Organization (UNIDO). The Tropical Agricultural and Higher Education Center (CATIE) was contracted by CTCN to provide this technical assistance.

The objective of this Technical Assistance is to:

***To develop a policy framework that will help integrate agroforestry practices throughout the country, providing practical knowledge and skills to the national team to understand and implement a proven and successful process to develop the Belize National Agroforestry Policy (NAFP).***

Agroforestry can be defined as:

A land-use system or combination of practices which integrates trees and shrubs with crops and/or animals, in some form of spatial arrangement or temporal sequence, to enhance short- and long-term objectives related to productivity, diversity, food and nutrition security, profitability and/or ecosystem sustainability. Thus, introducing timber or fruit trees on cropland or pastures, or introducing crops or animals on forested land or tree plantations are also good examples of agroforestry.

The national policy development team (PDT) was constituted under the auspices of the National Office for Climate Change of the Ministry of Fisheries, Forestry, Environment and Sustainable Development.

The Tropical Agricultural Research and Higher Education Center (CATIE) is leading the development of the national agroforestry policy. Dr Marcelino Avila, an international agroforestry expert, with the support of Mrs Helen Choco-Galindo, the project coordinator in Belize, has been tasked with the development of the national policy. The project leader is Mr Guillermo Detlefsen at CATIE in Costa Rica.

## Objectives

The overall objective of the national agroforestry policy development is to mainstream agroforestry development in Belize.

The specific objective of the PDT is to guide, contribute and support the development of a Belize National Agroforestry Policy by reviewing the progress at each important step,



offering suggestions that would reflect their disciplinary perspectives and priorities, thereby enriching the overall implementation process. This process entails 8 specific steps, as presented below.

## Implementation Activities

The activities to be implemented are:

- a. Review supporting documentation and other relevant secondary information
- b. Analysis of Belize's strategy for SDGs, REDD+ and NDC commitments to determine what role agroforestry can play.
- c. Formation of a multi-disciplinary and multi-sector national policy PDT comprising of the relevant ministries/departments of the Government and other key stakeholders to oversee the policy development process.
- d. Coordination of PDT meetings for better policy coherence and synergies
- e. Development of 1<sup>st</sup> draft of the national agroforestry policy along with the national task force
- f. Consultation meetings with key stakeholders across the country such as Departments, NGO projects, producer associations, and private farms (such as Spice Farms in Toledo, TKO Farms in Cayo, and others)
- g. Consolidation of the final draft of the policy, and
- h. Conduct of a national meeting for a final consultation on the consolidated policy draft.
- i. Final draft of the national agroforestry policy including the recommendations of the national meeting.

## Expected Outputs

These are:

- a) Technical guidelines to set up a national task force to mainstream Agroforestry
- b) Technical report on the results of interviews with key groups and individuals at national level that allow mainstreaming agroforestry in Belize
- c) First draft of the national agroforestry policy
- d) Report on consultation meetings with districts including photos and media coverage
- e) Report on the national meeting with the PDT, and
- f) Final draft of the national agroforestry policy.

## Specific Responsibilities of the Policy Development Team



To ensure the relevance and effectiveness of the policy and in order to build multi-disciplinary/multi-sector coherence and synergies, the members of PDT will be expected to participate jointly at 3 discrete steps of the process:

- a) First meeting to review and improve the guidelines of the NPDT, the reports of interviews with key groups and individuals and the first draft of the national agroforestry policy.
- b) Second meeting to review the report on the consultations in the districts, improvements on the next draft of the policy and preparations for the national meeting.
- c) Third meeting of the Team and other important stakeholders to review and improve the draft national agroforestry policy, which will be used to finalize the main output of this process.

These meetings will be programmed to be time-efficient, hence an estimated duration of 10.5 hours in total. If need be, depending on Covid-19 situation, some or all meetings may have to be conducted virtually.

## Proposed membership

The participation of these departments or organizations is considered essential to the achievement of the objectives of this assignment:

- Belize National Climate Change Office (Chair)
- Department of Agriculture
- Belize Livestock Producers' Association
- Department of Forestry
- Department of Environment
- University of Belize (Faculty of Agriculture)
- University of Belize (Environment Research Institute)
- Ya'axché Conservation Trust
- Program for Belize

## Time frame

The project will be implemented from June 17 to September 15, 2020.

<b>Activities</b>	<b>Tentative Dates (duration)</b>	<b>Purpose</b>
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1 <sup>st</sup> Meeting of PDT	July 23 (2.5 hrs)	Review outputs (a), (b) & (c) and preparation for district consultations
District Consultations	July 27 – Aug 13	Consult on first draft NAFP – specific components.
2 <sup>nd</sup> Meeting of PDT	Aug 26 (2.5 hrs)	Review output (d) and preparation for national workshop
3 <sup>rd</sup> Meeting with National meeting	Sept 7 (4 hrs)	Present and receive inputs to finalize draft NAFP

PDT = Policy Development Team; NAFP = national agroforestry policy.

## Report on intersectoral meeting (1<sup>st</sup> Meeting of the PDT) for better policy coherence and synergies

### Introduction

As part of the policy work plan for the development of the National Agroforestry Policy it was the formation a National Development Team was encouraged to oversee the agroforestry formulation process.

Therefore, a meeting was held with all participation from offices of The National Climate Change Office, Forest Department and Ministry of Agriculture from the Government of Belize, Belize Livestock Producers, Program for Belize, Ya'axche Conservation Trust, University of Belize- Environmental Research Institute, University of Belize- Central Farm Campus (agriculture).

### Description of Task

The meeting was done virtually via Microsoft Teams, on August 13, 2020 at 2pm. The agenda of the meeting was:

- Welcome and introductory remarks
- Introductions
- Technical Guidelines
- Discussion of main issues
- Presentation of the first draft of the NAF policy
- Discussion of main issues
- Next steps
- Closing



The documents reviewed and discussed in the meeting were: Technical Guidelines for the National Agroforestry Development Team and First Draft of the National Agroforestry Policy.

## Objectives of the meeting

1. Present Technical Guidelines of the National Agroforestry Development Team to the participants of the team.
2. Present the first draft of the National Agroforestry Policy to the member of the Team and receive their feedback on the policy.

## Methodology

1. Meeting was held with the Deputy Chief of the National Climate Change office, where Dr. Marcelino Avila, and Helen Choco-Galindo, presented a first draft of the Technical Guideline of the National Development Team.
2. A preliminary list of possible members of the team was mentioned but it was decided to wait on the approval of the CEO Dr. Percival Cho.
3. Meeting with Dr. Cho was held on the 17<sup>th</sup> of July, approval and go ahead were given on the Technical Guideline and to the list of members of the team.
4. A formal letter sign by the CEO Dr. Cho was issued to all members of the Team
5. First meeting of the National Agroforestry Development Team was held on the 13<sup>th</sup> of August, 2020 via Microsoft Teams. This meeting was also chaired by the Chief Deputy Officer of The National Climate Change Office (see ANNEX 1)

## Results

The main comments and recommendations given in the meeting were the following:

1. To strengthen the role of the private sector in the policy development process. Therefore, an invitation will be done to invite a private sector representative into the Team and intensify consultation with the private sector.
2. Invite the Land Policy Unit of the Ministry of Natural Resources to join the Team.
3. Expand on the strategic approaches (programs) to deliver on the policy objectives and outcomes.
4. Highlight the profitability and poverty images evaluation in the planning stages of the AF development process
5. Analyse ways and means of integrating the proposed NAFC into the institutional map and multi-sectoral mechanisms in the public sector, so as to avoid



unwarranted duplication and demand on its limited professional and financial resources.

## **(Draft) Agroforestry Policy**

The draft of the agroforestry policy was developed based on the deliverables produced during the project, along with 3 interviews carried out with different stakeholders. Below you can find the first draft of the agroforestry policy.

### **Chapter 1: Introduction**

“The best time to plant a tree was 20 years ago. The second-best time is now.”

Chinese proverb

“Until you dig a hole, you plant a tree, you water it and you make it survive, you haven't done a thing. You are just talking.”

Wangari Maathai, Kenya

Belize became independent from the United Kingdom in 1981, and today it is a thriving democracy with a population of some 0.4 million of diverse cultural heritage comprising Mestizos (or Latinos), Creoles (or Afro-Belizeans), the Maya, Garifuna, Mennonites, East Indians, Europeans, and many others, as well as mixtures of all the above.

Belize is an active member of the United Nations, Organization of American States, Caribbean Community, Central-American System of Integration, and therefore is a signatory and abides by their multi-lateral conventions, agreements and programs. Belize also has bilateral relations with numerous friendly governments such as those of the European Union, United States of America, United Kingdom, the Republic of China on Taiwan, Cuba, and Mexico, which provide technical cooperation and financial assistance.

Like many developing countries, Belize has made significant progress, doubling its per capita income, in the last 20 years and raising the socio-economic standards of living of its people. Today Belize is considered an upper-middle-income country. However, the country is hampered by the persistent problems of declining productivity in the primary and secondary sectors, rural poverty, natural resource and forest degradation, and climate change threats in the form of devastating droughts, excessive rains/flooding, and hurricanes, with increasing frequency.



AF (AF) is an old practice but a new science, which is defined as land-use systems or practices involving the management of trees on the same land with agricultural crops and/or animals, in some form of spatial arrangement or temporal sequence (Steppler and Lundgren, 1988; Somarriba, 1992). AF can increase agricultural production, food security, nutritious feed for animals, construction materials, medicinal plants for rural communities, as well as other products of great value to society, such as bio-energy, conservation of natural resources, and ecosystem services, sustainability and resilience (Nair and Garrity, 2012). Based on the experience in other countries with similar characteristics of Belize, AF has demonstrated excellent results in addressing the development and environmental challenges of today.

Although some local institutions in Belize have been experimenting with agroforestry systems (AFSs) and components, AF development today continues to face various challenges such as inadequate knowledge dissemination, legal constraints, lack of unfavourable incentives, and poor coordination among sectors that is needed and to which it contributes (CATIE, 2020c). From preliminary assessments and dialogue with international experts on the topic, AF has great potential for Belize at this stage of development. However, such potentials cannot be realized without a clearly convincing and effective policy at the national level, a policy that would lay out a solid justification, succinctly explain how agroforestry can contribute to the economy and sustainable development, and above all, delineate what exactly is needed to make that potential a reality for Belize.

With that purpose, the Ministry of Forestry, the Environment and Sustainable Development (MFESD) through the National Climate Change Office (NCCO) along with assistance of the Climate Technology Centre and Network (CTCN), has requested the Tropical Agricultural and Higher Education Center (CATIE), an expert institution in AF, to assist Belize in developing an integrative and comprehensive Belize national AF policy (NAFP).

This NAFP was developed in a stepwise process with a National AF Policy Development Team integrated by the relevant institutions with experience in the field of AF, which are:

- Ministries and Departments, i.e. Belize National Climate Change Office, Department of Agriculture, Forestry Department, and Department of the Environment
- Belize Livestock Producers' Association
- University of Belize (Faculty of Agriculture)
- Ya'axché Conservation Trust, and
- Program for Belize



The process followed in the work plan included:

- Review of relevant literature and legislation
- Consultations with key stakeholder representatives across the country
- Drafting the national policy outline and sections
- Consultations and feedback inputs in each district
- Redrafting and improving the original draft, and
- National meeting to review and agree on the final draft.

The proposed NAFP was also reviewed and supported by international partners who have invested in its development as a basis for mobilizing technical and financial resources for AF development in Belize.

## **Chapter 2: Justification for a National AF Policy**

There are convincing and compelling evidence for this policy in terms of the strategic needs, opportunities and contributions that AF can make at this stage of development in Belize. Without a national AF policy, none of this can happen (Buttoud et al, 2013). For this reason, the national AF policy is timely and relevant, and will be found to be attractive to the national policy makers, farmers, producers, environmentalists, investors and citizens interested in the sustainable development of the country.

### **The External Context**

The Sustainable Development Goals (SDGs)

As a member of the UN, Belize is a signatory to 17 sustainable development goals (SDGs) approved on September 2015. In 2018, a technical report was published based on an extensive literature review of 1,000 scientific publications about practical AF projects and the impact on environmental, social and economic benefits (Andersson, 2018). The report presents evidence of how AF can contribute to 9 out of the 17 SDGs. It has the strongest impact potential on:

- SDG 1: poverty reduction
- SDG 2: hunger alleviation
- SDG 13: climate action, and
- SDG 15: biodiversity conservation and sustainable land management.



AF can contribute to other SDGs by improving gender equality (SDG 5), human health (SDG 3), as well as by increasing access to clean water (SDG 6), sustainable energy solutions (SDG 7) and responsible agricultural production (SDG 12).

## **Climate change mitigation and adaptation**

Today greenhouse gas (GHG) emissions are more than 50% higher compared to the level in 1990. Global warming is causing long-lasting changes to our climate system. Climate changes severely impact people's livelihoods round the world, especially the most disadvantaged groups, i.e. small farmers, women, youth, indigenous people and ethnic minorities. They must cope with extreme natural disasters and degradation of natural resources, and if Belize does not take action, climate change will cause serious irreversible consequences.

Belize is a signatory of the United Nations Framework Convention on Climate Change (UNFCCC) and is a financial incentive program to reduce emissions from deforestation and forest degradation plus sustainable forest management and conservation of forest carbon stocks (REDD+). REDD+ includes policy reforms and advocacy actions that address the drivers of deforestation and forest degradation, land tenure issues, forest governance issues, gender considerations, and environmental and social safeguards. Climate change mitigation in the nationally determined contributions (NDCs) places great emphasis on sustainable forest management and one way to achieve this is through AF. Agriculture and forestry are both identified as priorities, emphasizing sustainable management of resources and increasing resilience against climate change.

Belize recognizes the need for action on the ground and recognition of the multiple benefits of REDD+ as it relates to enhancement of ecosystem services and the potential delivery of wider social objectives (Simmons & Associates, 2014). Although emission reductions and CC mitigation will remain at the core of REDD+ in Belize, there are many other ecosystem services flowing from forests and trees that contribute to the human well-being and can be enhanced through REDD+. These services are largely underpinned by biodiversity which also supports ecosystem resilience, which in turn could contribute to human adaptation to climate change.

AF can contribute to REDD+ in many ways, such as improving forest governance and land tenure/access issues, build capacity among local farmers and land users, assist in lowering carbon emissions, help Belize to participate in the current voluntary carbon market and earn USD40 million per year with a reduction of carbon emission (10%), contribute to enabling sustainable forestry in Belize, and contribute to capacity building



and training with key line ministries relevant to the agriculture, forestry and land use management issues.

### **FAO, CATIE and ICRAF assistance**

AF has been defined as a land-use system in which trees and shrubs interact, ecologically and economically, in a significant manner with crops and/or animals. Trees in AF are multi-purpose, they have been evaluated for producing over a 100 products and services, for example, those related to food, timber, feed, fuel, soil fertility, water, shade, medicines, carbon sequestration, and aesthetic value. AF has attracted considerable attention from the scientific and development community as a very promising technology because:

- Farmers are already accustomed to practicing some forms of it.
- Agroforestry can address a rather wide range of household needs, and
- AF has a definite potential for smallholder farming systems from the perspective of sustainable resource management and environmental services.

Starting in the 1970s, ICRAF, CATIE and the UN Food and Agriculture Organization (FAO) have been conducting research and development (R&D) in AF and now are renowned scientific centers of excellence and leadership in the field of AF (Budowski, 1981; CATIE, 2020). They are able and ready to provide scientific and technical assistance to most if not all requests that could come from Belize. The NAFP will create the effective demand and tangible benefits in Belize from such organizations which otherwise would go un- or under-utilized.

## **The National Context**

### **Socio-economic development challenges**

According to the Table 1 below, Belize is a small country in terms of population and land area (22,806 km<sup>2</sup>), with a low but steadily increasing population density and a high proportion of its land area under natural forests. In the first half of the 20th century, the logging industry used to contribute over 70% of the GDP, but around Independence in 1983, agriculture had replaced logging as most important income and employment generator in the primary and secondary sectors. At present, the service sector, and in particular tourism, has overtaken agriculture, contributing an estimated 43% of the GDP.

Belize is classified as a middle-income country because of its per capita income which has almost doubled in the last 20 years, from \$5,746 to \$9,205. However, during the last 10



years, the real growth rate of the gross domestic product (GDP) has declined significantly, from 13% to less than 1%, to a level that threatens

**Table 1.** Trends of selected demographic and socio-economic characteristics of Belize

Criteria	2000	2010	2019
Population	247,315	322,464	397,628
Persons/km	10.8	14.1	17.4
Per capita income, B\$	5,746	8,650	9,205
Real GDP growth, %	13.0	2.4	0.3
Forest lands, %	65	61	58 (projected)
Poverty rate, %	23	41	50 (estimated)
International trade deficit, US\$ M	170.1	133.8	595.8
GoB debt/GDP, %	79	81	95

Sources: [Worldometers.info/world-population/Belize](http://Worldometers.info/world-population/Belize); [Wikipedia.org/wiki/Economy of Belize](http://Wikipedia.org/wiki/Economy_of_Belize); Statistical Institute of Belize; GoB Budget speeches; IMF Article IV Consultation Reports

the basic standards of living, particularly for those at the bottom of the ladder. Deforestation is increasing due to population growth and the expansion of the agriculture frontier (Cherrington et al, 2012). As a result, inequality has increased; poverty incidence has doubled, from 23% in 2000 to an estimated 50% in 2019. In Belize, a family of 5 requires at least an income \$678 per month (US\$1.9/person/day) to stay above the poverty line, and for comparison, one adult member working full time earns \$612 per month based on the official minimum wage. The public sector debt/GDP ratio is at 95% in 2019, a level way above the 60% considered financially sustainable by international financial institutions. The international trade deficit has been constantly growing. The value of imports has increased to approximately 50% of the GDP, and the value of food, feed stuffs and beverages accounted for \$220 million per annum in 2019. The international trade deficit has been increasing rapidly. Now with the Covid-19 pandemic, the trade deficit will decrease substantially as foreign exchange is bring limited to importing the essential products mainly, but also because domestic exports, though already decreasing in recent years, are expected to decline further due to technical and economic constraints in domestic production and due to declining international market prices.

## **During and after Covid-19**



In 2010, the Government of Belize (GoB) invested in major effort to articulate a long-term strategy and plan for the sustainable development of Belize (Barnett & Co,2011), which even now offers relevant guidance and support for sectoral recommendations for sector policies (GoB, 2015a and 2015b). However, all has been interrupted by the arrival of Covid-19.

Before Covid-19, the largest economic sectors were: a) the import, wholesale and retail sector, and b) the constantly growing tourism/ecotourism sector. Tourism was the leading sector, driven by the attractions of the natural beauty of Belize, i.e. picturesque landscapes of ecosystems with rich clusters of flora and fauna, as well as the proximity and easy access for the wealthy North-American tourists. Tourism expansion was complemented by an aggressive program of road infrastructure development led by Government with borrowed funds and huge investments in flashy supermarkets, department stores and petrol stations funded mainly by Chinese immigrants.

Since Covid-19 arrived in Belize and since it is spiking in the surrounding countries, the national economy has suffered a major meltdown due to the lockdown: no tourists, empty hotels, no jobs and no income everywhere, huge expenditures in public health/income and food relief from GoB, and more borrowing to cover the shortfalls in public revenues. Now the Government is almost broke, As the economy is re-opening, the international airport is being re-opened to allow tourists to return but with strict conditions, and while international borders remain closed for the time being, the people are being prepared to live under the new normal of social distancing, mask wearing, proper hand sanitizing practices, and being prepared for hard times ahead. Success against Covid-19 is quite possible, but it is conditional on heavy investments in public health, virus testing, tracing, quarantining, and an effective public education and awareness campaigns for the next year or until the Covid-19 is contained with available vaccines and therapeutic treatments.

There are many lessons to be learnt here. The agriculture sector is holding up, enough food and food security are not an issue yet, but some people are going hungry due to the lack of jobs and income. Hence there are urgent needs that must be addressed in the short term for farm families. There are also medium- and long-term measures that must be taken to strengthen and ensure the viability, sustainability and resilience of the agriculture and food systems. Belize is entering a new phase, one of high indebtedness, with no recourse to borrow, and with no option but to buckle down, produce more, not import, and grow the economy, which will have to attract the highest level of leadership, hard work, technology, investment, and business acumen. This will be the new normal, if Belize is to move forward successively in its long-term development pathway.

### **A Renewed and revitalized focus on agriculture**



There is urgency to prioritize income generation and the productive sectors by introducing new products and foods, value-adding and recycling resources at home and community, and to create employment opportunities for women and youth especially in the vulnerable sectors. AF development clearly does have an important contribution to make here.

There are development plans in gestation to strengthen micro, small and medium-size enterprises in production, processing and service sectors, with low interest (3%) loans, to expand the domestic economy to replace and substitute for the bulk of imported products and to increase exports to generate much needed foreign exchange. In this respect, there is great interest in the production of local foods, beverages, feed, energy, timber and construction materials, leather products, you name it. In addition to the basic staples, there is increased interest in investing more on coconuts, pineapples, cocoa, indigenous fruits, non-timer forest products, and even domestication of wildlife species, all possible components of AF systems. This focus augurs well for agriculture.

### **Deforestation or intensification**

Agriculture can grow through intensification to meet the increased demand for food, jobs and income, since growth by expansion into the natural forests is no longer a desirable option. Although Mennonite large-scale agriculture (farming/ processing/ marketing) is a success story, it was based on expanding the agricultural frontier into the natural forests. However, the forest-elimination strategy cannot go on indefinitely. Forests need to be managed as productive ecosystems, pursuing options of sustainable logging, non-timber forest products, and generating environmental services (i.e. water protection, CO2 sequestration). These options have been demonstrated to be more productive, profitable and sustainable than the traditional milpa and mono-cropping systems.

Deforestation and forest degradation in southern and western Belize are also caused by the milpa system, also known as the shifting cultivation, which is practiced by Belizean and illegal Guatemalan farmers in the west and south, and in the north and central regions of the country. Wild fires during very dry spells also destroy the rich quality of our forest-based resources. Although the milpa is an old AF practice, it is a minimum-input, low-productivity and unsustainable system, and since the farmers have no alternatives to secure their food needs, they will continue with the milpa. If left unchecked and unimproved, with high population growth, all forest areas will soon disappear or be degraded. Alternatives to the milpa system must receive a high priority in order to control deforestation and forest degradation in Belize.

### **Forest and tree planting traditions**

Because of our cultural background in the rural and urban, Belizeans love to plant trees, all kinds of trees. The cultural heritage and the logging industry, which accounted for



70% of the economy in the early 20th century, exposed the people to the valuable timber species and the wide range of indigenous fruits that grow naturally in the forests. Local fruit trees are ubiquitous and very much appreciated, delicious and nutritious: i.e. cocoa, mamey, custard apple, zapodilla, koine, cohune nut, guava, soursop, avocado, mango, plums, ramon, and coconut. And trees for animal feed, well known are the ramon, pixoy and others. People also have an old tradition of using medicinal trees. Local people have valuable experience on how to plant, take care and use trees. They love trees for multiple purposes; however, their processing and marketing are limited and need to be developed.

### **Participation of women and youth**

Beyond the compelling evidence for gender representation at all levels of agricultural development, the arguments are even stronger in AF because women, compared to men, prioritize the well-being of the children and family (i.e. food, nutrition, health, house construction, and conservation of natural resources), above short-term productivity and cash income gains (CATIE, 2020b). The unconscious bias towards the male heads can distort critical decision making in terms who makes decisions, what incentives are needed, who does the work, and who reaps or harvests the benefits. AF can be used to inspire women, capacitate them, and offer opportunities to them to lead in AF work, to contribute in the field, school or office.

It has been noted that young generations are more concerned than other age groups about the environment, climate change and sustainable development because these will be their inheritance and patrimony. Hence AF development can offer the youth an opportunity to act today in the interest of a better future for themselves. Their participation is also most desired in the rural productive sector, because due to the self-perceived gloomy outlook in agriculture, they are migrating to the urban areas in the pursuit of a better future.

### **Uncoordinated AF project efforts**

Several government departments or units (Agriculture, Forestry, and Environment), the University of Belize and non-government organizations (e.g. Program for Belize and Ya'axché Conservation Trust (YCT) are engaged individually in AF initiatives, because they can appreciate the valuable contributions AF can make to their own missions and mandates (CATIE, 2020c). However, there is no inter-ministerial coordination or insufficient collaboration among these AF initiatives. The usual strategy of each ministry is to work independently and therefore in the absence of a national AF policy, there is no reason and no motivation or effort to do otherwise (Government of India, 2014). Furthermore, because of the small size of each ministry or organization, there is limited capacity to mount the minimum interdisciplinary team in any institution. A minimum



“critical mass” is absolutely necessary in AF to have competent programs to produce the scope and quality of work required to make a credible impact on the productive sector and, more so, on the national economy.

### **Investment stimulation and mobilization**

AF cannot grow and be mainstreamed without investment, hence the highest priority of any NAFP is precisely to stimulate and secure investments from those who have resources. The argument to be made is about income, profits and better returns on the limited resources of land and capital in Belize. AF can offer good economic returns for all, even for the poorest of the poor.

## **Chapter 3: Agroforestry Practices and Potentials in Belize**

### **The Rise of Agroforestry**

The John Bene team’s report in 1977 on trees, food and people noted the existence of AF and recommended the establishment of the International Council on AF to study it (Bene et al, 1977). AF is an old practice of farmers who were planting trees on cropland and pastures, contrary to the conventional recommendations of the experts in agriculture. Today, AF is also an area of science that studies, improves, tests and evaluates, for example different spatial and temporal arrangements, below- and above-ground interactions, and the yield and services provided by the components of crops, livestock and trees, over time, albeit tangible and intangible.

There are three general types of AF based on the presence of the main components: agrisilvicultural (crops and trees), agrisilvopastoral (crops, trees, pastures and livestock), and silvopastoral (trees and pastures and livestock). The predominance of any AF type is a function of the cultural, ecological and socio-economic characteristics of each area or country. In Central America, for example, CATIE’s work on understanding the potentials of AF had its origins in its research on multiple cropping systems with annual and perennial crops, farming systems (including livestock) of small farmers, and its work on watershed/forest management systems. By the 1980s, CATIE had already established an AF program in this region, recognized as a leader in the world, similar to that of ICRAF in Sub-Saharan Africa, followed and complemented by other efforts in United States, Europe, Brazil and India (Nair & Garrity, 2012).

Starting in the 1990s, ICRAF and other collaborators started a global research program to develop alternative to slash- and-burn agriculture (SBA) in Africa, Latin America and Asia (Bandy et al, 1993). The program focused on: a) selection and improvement of tree species, b) understanding on the physical and economic interactions among components,



c) design of new systems to improve productivity and sustainability of the SBA cycle, and  
d) the identification of socio-economic constraints for adoption recommended alternatives, i.e. land tenure, institutional policy, household decision making and gender issues. Improving the cropping and fallow phases of the SBA systems as well as the natural forest ecosystem was important to reduce demographic pressure for forest conversion.

In East Africa, the farmers are experimenting with a diversity of approaches and projects for what they call restoration ecology. One example is reforestation conducted with local communities who are not only planting trees but doing so in a way that can secure access to carbon markets. This is implemented by following a quality standard for monitoring, training and employment of the farmers who participate, to ensure a high rate of success on long-term conservation. These are incredible initiatives designed for socio-economic and environmental impact.

In Costa Rica, the payment for environmental services is executed through the National Fund for Forest Financing and the National System for Conservation Areas (Ortiz & Kellenberg, undated). The payment program aims to protect primary forest, allow secondary forest to flourish, and promote forest plantations to meet industrial demands for lumber and other wood products. The program makes direct payments to landowners for ecological services which their lands produce when they adopt land uses and forest management techniques that do not have negative impacts on the environment and which maintain the people's quality of life. The program recognizes forest ecosystems for four ecological services, i.e.: mitigation of GHG emissions; hydrological services, including provision of water for human consumption, irrigation, and energy production; biodiversity conservation; and provision of scenic beauty for recreation and ecotourism. Financing comes from taxes on fossil fuels and from national and international payments for environmental services. The program has also negotiated payments with three hydroelectric companies, a private beer company, sale of Certified Tradable Offsets derived from forest ecosystems, and donations from the Global Environmental Facility.

### **Agroforestry in Belize**

AF began to receive some attention in Belize in the late 1990s (CATIE, 2020c). The Program for Belize (PFB) promotes the conservation of biodiversity and sustainable development of Belize through proper management of the Rio Bravo Conservation and Management Area (RBCMA) to conserve forested land and other natural ecosystems in north-western Belize threatened with deforestation and fragmentation. The PFB started some work on tree nurseries to produce seedlings of valuable timber species for AF with village farmers' groups, However, that work ended soon due to farmer group conflicts, money issues and lack of funding to continue.



The Ministry of Agriculture started its AF work with tree nurseries, selling seedlings to farmers at subsidized prices, which continued for some time but at a slow pace. Today, the Ministry's interest has increased since it is promoting various AF-related innovations, such as:

- Mixed farming systems: these include integrated farming systems, intercropping, alley cropping, organic production and sustainable agriculture; each system promotes "diversity". For example, the Farmer of the Year national competition puts considerable emphasis on farms that have tree/crop/livestock components.
- Regenerative agriculture: the objective is to improve and conserve soil quality (soil amendments, cover crops, bokashi, compost), water management (irrigation, draining, water harvesting), and more recently, educating and promoting principles and practices that increase biodiversity, carbon sequestration (above and below ground).
- Protein and energy banks: the objective is to produce forage with high protein and energy content, to discourage the producers from expanding grazing areas and teaching them better practices to improve the animal nutrition through intensification.
- Silvo-pastoral systems: this includes rotational grazing of animals, live fences with madre cacao (*Glyricidia sepium*), improved pasture species, scattered trees in pasture, and riparian buffers.
- Agro-silvo-pastoral systems: this is focused on crop production with livestock and tree components.
- Beekeeping: this program addresses forest preservation, creates adequate micro-climates for bee populations, and uses trees to protect hives from extreme weather events and to provide buffers for community safety and pollination.
- AF nursery: AF trees are made available to farmers, even though there is not any campaign or strategy to encourage tree planting on farms at present.

Although the Forestry Department does not have an AF program per se, the recently adopted National Forestry Policy which, inter alia, seeks to promote AF (GoB, 2015a). Thus, the Department works with forestry partners like YCT and VACA groups, close to Arenal in Cayo District, and with Friends of Conservation and Development (FCD) in integrated forestry systems.

YCT empowers and builds climate-resilient communities, protects wildlife, soils, forests, rivers, and the reef for a sustainable future in Belize. Their Community Outreach & Livelihoods program has successfully implemented climate-smart farming practices, such as the first cacao AF concession in Belize, beekeeping, Inga alley cropping, and works with fruit trees, i.e. avocado, cocoa, mango, coconut, breadfruit and oranges. The YCT is



collaborating with the Toledo Cacao Growers Association (TCGA) to improve the socio-economic standard of living of its members through a competitive, diversified system of production that incorporates sound ecological practices through AF practices. This is the rationale for producing cacao under shaded trees (timber trees), along with intercropping leguminous trees, plantains and other staples. YCT is also working with local farmers to manage bees for organic honey production in the forest reserves.

To work in the forest reserve, YCT signed in October 2015 a co-management Agreement for Maya Mountain Northern Forest Reserve (MMNFR) to reside, to cultivate or camp in a forest reserve, 379 ha for a period of 15 years. Certain conditions were imposed on the permit holder to abide by: i) clearly demarcate the area of cultivation, ii) assist Forest Officers in prevention and extinction of fires and other forest offences within the MMNFR, iii) if the conditions are breached, the permit may be cancelled within three months' notice and all property may be forfeited to GoB, and iv) the permit holder must abide to supplementary conditions of describing demarcated area, administering, sticking to the purpose and scope of the permit, allowable and prohibited activities, forest inventory and topographic survey, and providing the forest/AF management plan, royalties and fees, ecological consideration and requirements.

The Trio Farm Cacao Growers Association (TFCGA) is a private, for-profit community-based organization in the community of Trio. Members organized themselves in 2010 to seek access to land in the Maya Mountain Natural Forest Reserve (MMNFR) to support their livelihood by implementing cacao AF practices through a concession. The YCT and TFCGA are pioneering a community AF concession model in a natural reserve, since there are other organizations interested in participating in these AF practices depending on the results of the YCT projects.

The goal of the BLPA is to provide the livestock industry and all its stakeholders with oversight at the national and governmental levels and provide access to both new local and international markets. They also provide and disseminate new technology and information via extension officers, training, education initiatives and projects such as "Improving Productivity and Resilience to Climate Change in Livestock Systems". This program seeks to improve productivity, to increase resilience to climate change, and at the same time to reduce GHG emissions on small and medium-scale farms through the promotion of silvo-pastoral innovations.

### **Relevant AF Systems**

From a CATIE study, a number of AF systems were identified as having high potential for Belize, some because they were already being practiced and others because they could



address a very critical constraint or offer an excellent opportunity for farmers (Ibrahim & Beer, 1998). These systems are:

- Home-garden, or backyard farming, is a dense mixture of multipurpose trees, crops, vegetables, condiments, medicinal, small animals, etc. Traditionally the area is about an acre and had the highest total yield/acre of any agricultural system in Belize.
- Live fencing is trees planted on the borders and used as a fence or barrier with or without wire; the trees can produce fruits, fodder or firewood.
- Pasture with trees scattered in grazing areas; trees can provide shade, fodder, food, or fuel.
- Cocoa managed under shade trees: cocoa needs the shade and in addition the trees can be pruned periodically to improve soil structure and fertility.
- Farm or community forestry, is tree planting in woodlots or any open spaces on the farm or community.
- Border tree planting is the planting of valuable timber trees in rows on farm boundaries; the trees can serve as protection and windbreaks too.
- Taungya involves short-period cropping (vegetables, grains, pumpkins, watermelons during first 2-5 years of establishing tree plantation. Some shade-tolerant crops like ginger can continue to produce even after the tree canopy closes.
- Fodder bank is the intensive production of nutrient-rich trees and shrubs to supplement animal feed especially in the dry season. Some tree or shrub biomass have 20-30% crude protein content which is as good or better than a commercial concentrate with 18% CP content.
- Improved fallows are enriching cropland with nitrogen fixing trees to reduce the length of the fallow periods and also to generating valuable products of use to the farmers.
- Riparian tree planting is using valuable timber trees or fruit trees to stabilize river banks, thereby reducing erosion and producing desirable outputs.
- Multi-strata combinations: forests and plantations are enriched with shade-tolerant shrubs, fruit trees, spices and small animals. NB: the cocoa/tree system is already noted above.

The rapidly growing eco-tourism in Belize has created an effective demand for beautiful natural landscapes of high ecological quality, which AF with multi-strata arrangements can definitely offer, including the provision of environmental services to enrich the experience of visiting tourists. For this reason, Belize is now rated highly as an international tourist destination.



AF can also offer significant economic benefits, even for the rural poor. At present the timber industry accounts for less than 2% of the economy, and Belize even imports cured pine lumber from Canada, retailed at about \$3/ft<sup>2</sup> dressed. Farm forestry, a common practice, is planting valuable trees in unused niches around the homestead, small lots, boundaries, and subdivisions within the farm or in village spaces. Belize has excellent tree species for farm forestry, such as mahogany, Spanish cedar and teak. If a small farmer could plant at least 20 trees per year, in five years they would have 100 trees in development, worth about \$5,000 per tree when mature. After 20 years of growth for each batch, that asset could be worth as much as \$500,000 when harvested and sold in bulk. What if the small farmer could produce furniture, that asset could increase at least three-fold, a handsome return for their land and labour. Farm forestry can be an excellent investment for the future heirs or for a rainy day in the future. If 2 thousand farmers did the same, then this conversation would be about a multi-million business operation, borne from micro beginnings.

Another effective mechanism that must be exploited for AF is public-private partnerships because introducing and cultivating trees are a medium to long-term investment in training, inputs, support services and incentives for farmers. This partnership is a win-win strategy for the public institutions can provide training and extension, technical information and support, and networking and sharing experiences, whereas the private sector could assist with financing and subsidizing the investment and operational costs, and will benefit from downstream processing and marketing services. This partnership can be complemented with international or regional organizations engaging in R&D, infrastructure development and financial assistance or incentives for farmers and producers. This type of partnership arrangements can be a formula for successful AF development in Belize.

#### **Chapter 4: Constraints to AF Development in Belize**

After interviewing the current practitioners of AF in Belize, the main challenges presented to its development and adoption can be summarized under five topics, as follow (CATIE, 2020c).

##### **Farmers and Producers**

There is inadequate knowledge and awareness of the benefits of trees in their farming systems, and there is insufficient persuasion to encourage farmers to incorporate trees into their farms. As a result, some producers believe that incorporating trees into their farming systems can reduce productivity significantly and as a result they are not interested or motivated to plant the trees.



Limitations of time, financing and other resources prevent them from adopting AF in their farming systems. The present prices are low for agricultural products, such as cattle, grains, other food staples and even timber, at the producer level. The royalties paid on harvested timber from commercial plots are higher than for timber harvested from the forest. Then there are general sales tax, land taxes and export taxes, that together significantly increase cash costs for them. The scarce resources for investment force them to invest in short term options instead of investing in trees with longer term benefits. There are significant costs they have to make in procuring seedlings, establishing the plants, protecting and taking care of them, yet financing for such operation are not available, and when available, the costs of accessing them are too high or have a high opportunity costs for rural households. Some cited that to work on the desired of AF, they would need more land, which is increasingly difficult to access.

There are also people issues, customary practices and beliefs that present challenges for AF, i.e. working in groups, poor business practices, engaging the women, and motivating the youth, for participation. These social issues need to be analysed and addressed, hence the critical importance of engaging the socio-economic professionals in AF development.

### **Knowledge and Data on Agroforestry**

The level of expertise in AF and their land use management system is very low. There is need for sound empirical data, which are derived from formal R&D programs. Some specific areas highlighted include: good nursery practices to produce sufficient quality seedlings of trees in demand, competition of crops with trees, utilization of tree biomass produced, cost-effective methods to protect established trees, yields of combination of trees/crops and livestock over time, and performance AF prototypes relevant for specific objectives, farmers and regions.

### **Institutional and Technical Capacities**

There is need to build the capacities in education, R&D and extension and training for AF among the relevant organizations. Mixing trees, crops and livestock requires a higher level of expertise, and based on experience there is minimum level of expertise that is required from the agronomy, livestock, forest and socio-economic sciences to forge a "critical mass" to guide, plan and evaluate AF development (Avila & Scott, 1989). Because of the complexity and high level of interactions among the components, AF requires an interdisciplinary, systems approach that can integrate different structural components, can analyze different functional relationships over time, and assess the productivity of multiple components with criteria that relevant to the technical staff and, equally important, relevant to the potential beneficiaries (Avila 1992). Implementation, although



important, can be done by any competent institution or actor once the plan is well understood.

### **Legal and Regulatory Impediments**

Laws, regulations and measures that define forest-related access, tenure and user rights of land and trees, taxes and duties, benefit-sharing and decision-making responsibilities (CATIE, 2020a). Legal and regulatory controls are put on forests because of over-harvesting and wanton destruction of some valuable species that would rapidly lead to their commercial extinction. This led to the list of endangered species in the CITES Convention, which justifies legal controls in Belize. According to the Forest Act (Chap. 213 Rev. Edition 2003, under Forest Regulations, First Schedule), Section 5 states that no person shall convert primary, secondary hardwood and softwood into lumber. Primary hard woods are mahogany, cedar and teak. Secondary hardwoods include any other tree not defined as primary hardwood and soft wood are trees of any indigenous species and tree of coniferous class that have been introduced into Belize. Harvesting requires an application with a non-refundable application fee of \$24 and a permit/license if approved by the Chief Forestry Officer (CFO). According to Part III of the Forest Rules, no person shall clear, cultivate or break up land for cultivation except by the issuance of a license issued by the CFO to camp, reside and cultivate in a nature reserve. This permit was granted to YCT along with the TFCGA.

### **Land and Tree Tenure**

When introducing trees on rural spaces, there are a number of land and tree tenure issues that could potentially drive or impede the adoption of AF, hence the need to understand the legal regulations and customary practices in Maya lands, unused village areas, and boundaries between freehold properties. An AF policy should also enable the formulation and implementation of land and tree tenure policies that can promote AF. This could be achieved, for example, by providing a clear legal basis for AF, understanding local resource use and tenure practices (i.e. rights of whom, for whom and for what), formalizing land values with specific species of established trees, and creating incentives that can lead to greater participation and equity in rural communities through the adoption and sustainable management of AF.

### **Consumer-ready Products and Market Development**

In the agriculture sector, farmers complain about low product prices, unstable markets, low levels of processing and much waste at harvest season, particularly for perishable commodities. Since AF can generate a wide range of products and services, and perishables too (e.g. fruits), it is very important to develop each product so the presentation and quality, for wood products too, will fetch the best price in the domestic



and export markets. Hence there is need to invest in processing to add value to all the main products, by-products and residues, and in packaging and marketing plants. In this context, the Covid-19 pandemic is a blessing in disguise. Belizean leaders and people now realize that the local production and value chains in the food and agricultural sector must be given high priority and receive more attention to avoid high-level dependence on food and feed imports.

### **Financing and Financial Incentives**

There is limited financing and the costs of borrowing is prohibitive for agriculture since policy makers have maintained that agriculture must compete with the industrial and service sectors. This has not worked for farmers and producers; hence the levels of investment are low, profits are low and investment risks are high due climatic, biological and economic factors. So, even if farmers can appreciate the potential pay-off and all positive of AF, there is not much they can do if new investments and financial or in-kind incentives are not made available to them, and in the case of AF, though the risks would be lower, most of the benefit streams would be in the medium and long terms.

## **Chapter 5: National Policy Goals, Objectives and Principles**

### **Policy Goals**

In order to mainstream AF in Belize, the goals of the national AF policy (NAFP) goals are two-fold:

1. To establish a national AF council with a secretariat to implement the Belize NAFP as a means to coordinate and build synergies among the relevant sectors, institutions and programs for its widespread adoption and development as a viable and sustainable option for Belize.
2. To improve the total productivity, resilience and sustainability of agriculture and forestry through the adoption of AF systems in Belize, in order to improve the livelihood and well-being of present and future generations, with particular attention to the participation of the youth, women, the poor and indigenous peoples across the country.

### **Policy Objectives**

These are as follows:



1. Resolve the legislative and regulatory impediments and enact reforms and mainstream AF in the policies of relevant sectors that will enable the widespread adoption and management of AF systems, such as laws, regulations pertaining to the tenure, access and use of land, trees and services and pertaining to monetary and fiscal measures.
2. Strengthen institutional capacities for research, education and extension in AF to provide science-based data, professionals and practitioners with expertise in AF.
3. Promote tree planting in farming systems to meet the ever-increasing demand of timber, food, fuel, fodder, fertilizer, fibre, and other products.
4. Develop AF alternatives to the shifting cultivation (milpa), cropping, livestock and farming systems, as well as improve the resilience/risk management of agriculture and forest ecosystems during extreme climatic events, biological attacks or socio-economic shocks.
5. Develop AF as a way of reducing the pressure on existing forests and complementing the REDD+ target of increasing forest/tree cover for ecological stability and environment services especially in the vulnerable regions.
6. Mobilize investment and resources from local, national and international partners to complement the resources of GoB, local institutions, the private sector and farmers/ producers, in order to support the AF programs and to provide the appropriate incentives to the farmers and other land users.
7. Organize a review, planning and learning conference, at least every 2 years, with representatives of the main AF stakeholders, i.e. producers, educators, researchers, developers in the public, private and non-governmental sectors, and the interested international partners like CTCN, CATIE and FAO.

The first conference, planned right after the enactment of the NAFP, will be carried out as a national stocktaking review on current and past achievements with the purpose of identifying future AF development priorities and a way forward.



## Guiding Principles

The guiding principles and concepts implementing the NAFP are as follow (CATIE, 2020b and 2020c):

- **People-centred and inclusive development:** the focus is on sustainable livelihoods and on indigenous people and the rural poor. The private sector (i.e. those motivated by profit), civil society (i.e. those groups, organizations and citizens interested in advance community or common goals and agendas), and other stakeholders (those directly or indirectly affected by, or interested in, a given resource) will be courted to participate with government in the AF programs.
- **Gender sensitivity:** This policy will empower women through their participation in the leadership and implementation of the AF policy, access to training and education opportunities, creation of economic opportunities, and women's access to and ownership of land and tree resources. Special measures will be used to ensure that women and girls are safe, productive and secure in the mainstreaming of AF.
- **Systems and inter-disciplinary approach:** because of its multiple components in space and time, AF is a complex, dynamic system, with below-ground and above ground interacting processes. Hence AF development requires team work involving the experts and practitioners in forestry, agronomy, livestock, soil/water management, and socio-economics.
- **Communication and transparency:** the free flow of reliable information enables all collaborators and stakeholders to access, monitor, understand, and share in a timely manner the results and views on the progress of AF programs.
- **Compensation and incentives:** motivation for action or provision for a service (environmental) or sacrifice (work or benefit foregone) requires payment or compensation. In the case of AF, there are multiple options to mobilize funds to provide incentives for AF adopters, for example, because of the combination of commercial purpose, conservation of natural resources, environmental benefits (e.g. green market or payments for environmental services and carbon sequestration), and community support programs (e.g. poverty reduction, food and nutrition enhancement, and other SDGs).



## Chapter 6. The Pillars and Expected Impacts of the Agroforestry Policy

### Pillars and Building Blocks

The level of success in achieving the goals and objectives of the NAPF will depend on the following pillars.

#### 1. Leadership and coordination

Leaders are the key in terms of building consensus on the mission, setting priorities and planning the strategies and managing the programs to achieve objectives with limited resources, and managing interdisciplinary teams who can work together and effectively to achieve common goals. The leader needs to coordinate among different institutions to get their commitment and support, and mobilize and motivate range of different stakeholders. These leadership skills can be learnt, and every effort must be made to do so from the start.

#### 2. Knowledge of the science and practice

This is reflected in the state of the art, data bases or library (physical and virtual), and previous and on-going experience on R&D and education programs. For AF to be promoted, basic knowledge is required on all components involved (crops, livestock and /or trees), with respect to establishment techniques, adapted and quality germplasm or genetic resources (including use of seed, cuttings, scions and pollen), input and management regimes, pest and insect control, harvesting techniques calendars, product processing/ development, etc. In addition, empirical socio-economic data is required for the ex-ante or ex-post analysis of the AF systems or their components. Empirical data may be required on gender and policy issues, land use and tenure, etc as the case may be.

#### 3. Institutional capacities

Policy implementation will require having a basic capacity to conduct applied and adaptive R&D, education and extension or technology transfer to farmers and producers. A “critical mass” of professionals is needed, at least one or two from each of the basic disciplines of agronomy, livestock, forestry and socio-economics, who can function as an interdisciplinary team for the national AF programs and projects. They could be drafted from the different institutions and AF projects, and would agree to work as a team for the critical phases, e.g. planning projects, evaluating results and reviewing reports and publications.

#### 4. Human resources



There is need to strengthen all the human resources with current or potential interest in AF development, i.e. policymakers, researchers, educators, extension staff, farmers, producers, and business people. There is need to expose them to the latest information on AF approaches, good practices, and production possibility curves or services that can be generated for the well-being of people. This could be achieved through communication and networking, training, targeted support to project teams, creation of virtual platforms, tools and methods for gender analysis and gender-responsive, etc.

#### 5. Investment and financing

Without investment and financing for short term and long-term AF development, there is no way Belize can mainstream AF. Although not all components of the AFS are long term in nature, the main benefits do require a longer time horizon, compared to traditional agricultural systems. In fact, agriculture in Belize is undergoing a very difficult period at present due the inadequate levels of investment in the public and private sectors and the high interest and high administrative cost of financing for the sector. Hence, investment and financing will require some policy changes and innovations that would favour AF development.

#### **Outcome and Impact Areas**

AF and trees in particular provide a range of important products and services at household and community levels. Most trees have multiple uses, including cultural ones, and typically provide a range of benefits, tangible and intangible.

It is well known that AF can make a significant contribution to several SDGs on poverty, hunger, gender equality, enhancement of climate resilience, and others as listed above, and especially for the vulnerable and marginalized populations of our country. Depending on the overall priorities of the Government, these should be monitored and evaluated.

Over the short and long terms, the successful implementation of the NAFP will complement the national plans and strategies developed in the country for the agriculture, forestry, and environmental sectors, as well as for mitigation of climate change. Accordingly, after consultations, specific targets will be set as follows:

- Bring innovative diversified enterprises, hence will improve food security, nutrition and health of the people, affecting at least 5,000 households.
- Improve interactions and recycling process (e.g. bring up water and nutrients from deep in the ground and build soil organic matter and thus soil carbon ) in the productive components which will enable higher productivity and higher sale of crops, fruits, livestock, tree products, and non-timber forest products, valued at least \$100 million in income every year.



- Increase the asset base with planted trees reaching maturity stages, creating better micro climates and making agricultural landscapes more resilient, affecting some 20,000 acres in 10 years.
- Increase forest cover, conservation of flora and fauna species, and protect the biodiversity and water resources at the national level, affecting 50,000 acres in 10 years.
- Sequester carbon from the atmosphere, estimated captured CO<sub>2</sub> at 40 million tons of carbon every year.
- Fortify our ecosystems and environmental services, such providing wind barriers, restoring degraded lands, improving water conservation, prevent soil erosion, and adapt to climate change and build resilience to climate change, affecting another 50,000 acres in 10 years.
- Develop supply value chains and value adding capacities (plant capacity) for efficient input supply, processing and marketing by the private sector, affecting some 5,000 enterprises over the next 10 years.
- Improve the trade balance in terms of increasing exports of agricultural, food and timber products and reducing the import of the same products, valued at some \$300 million over 10 years.
- Train farmers and producers, at least 5,000 in all 6 districts of whom at least 30% are female.
- Train staff in public institutions and civil society, at least 50 with at least 20 professionals with MSc and 5 with PhDs; approximately 50% are female.
- Mobilize resources for investment and financing of AF programs and projects, targeted at least \$5 million per annum during the first 5 years.

The successful implementation of this policy requires systematic, interdisciplinary and farmer- or producer-driven approaches. Future priorities for analysis must be based on:

- Understanding and quantifying farmers' dynamic management and exploitation of AF systems.
- Determining short- and long-term impacts and implications of differing AF potentials, and
- Defining relevant indicators and refining cost-effective methods to describe, explain and predict AF impacts, adoption potential, and sustainability.



In brief, this type of analysis requires a strong input from the socio-economic disciplines from the start in analyzing the target farmers in order to identify appropriate indicators, types of analysis, and hence data requirements for AF development and adoption.

## **Chapter 7: Organizational Strategy and Institutional Mechanisms for Sustainability**

The main organizational mechanism for implementing the NAFP is the proposed National AF Council (NAFC) to be established with representation of the key organization with interest and capacity to participate. Its chair is to be selected by the membership and rotated every 3 years.

The NAFC will have an executive Secretariat, comprised of a full-time head and 4 part-time members who are actively involved in AF development programs in the public or non-governmental sectors. The members of the Secretariat will represent the disciplines of forestry, agronomy, livestock and social sciences. The NAFC Secretariat will carry out the substantive and administrative work as directed by the NAFC. The main functions of the Secretariat, in support of the NAFC, are to:

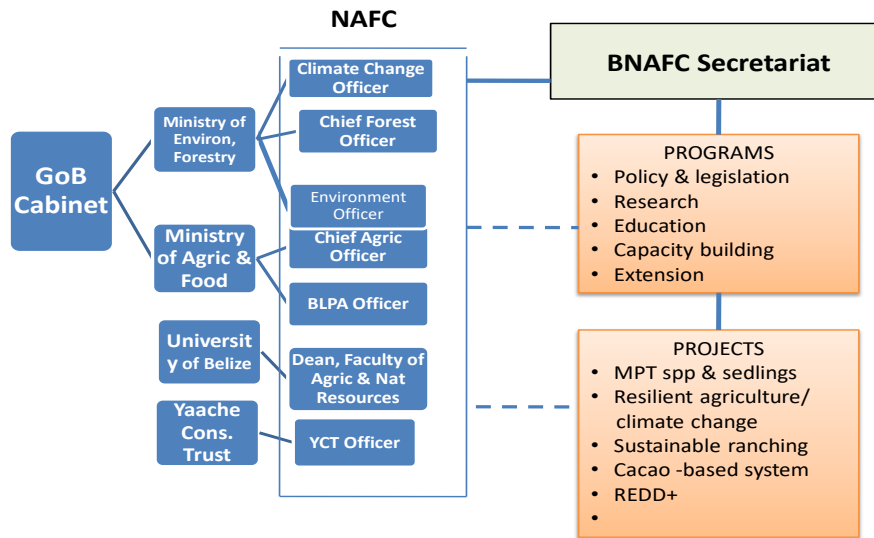
- Gather and prepare background information on various programs, projects and priorities of the stakeholders so that the Council can study the facts and make decisions as need be
- Implement the decisions made by the Council, track and facilitate activities and processes
- Organize periodic national planning and review meetings of the NAFP
- Keep the key stakeholders and general public about the work and achievements
- Monitor and evaluate organisational performance in terms of results, outcomes and outputs.
- Assist in preparing scientific and technical publications and communications
- Develop plans for the financial sustainability of the NAFP and support resource mobilization for AF development

The organizational structure for implementing the policy is presented in Figure 1. The main ministries are the ones responsible for forestry and agriculture, plus the University of Belize and the YCT, are to be represented in the NAFC, who will appoint the NAFC Secretariat, which in turn will oversee and lead the AF programs and projects.



Programs in this context are defined as strategic units mainly focused on developing technical capacities in strategic areas with differing but essential body of knowledge and skills, all deemed necessary in a balanced way, to implement the NAFP. Projects are defined as fixed term units with specific objectives, outputs and time-frames, confined mainly to its funding resource.

Fig. 1 Organigram for the Belize National Agroforestry Council



Depending on the source of funding, projects entail a logical framework with combined elements of policy initiatives, research, education, and extension and/or outreach activities, all necessary to achieve the project’s overall objectives. To plan and deliver on projects effectively and efficiently, programs should serve simultaneously as contributors and as beneficiaries of projects.

The success in mainstreaming AF through the NAFP will depend on three essential processes related to:

- **The institutionalization of AF** in the public sector, the private sector, and the nongovernmental organization. The latter do not need much convincing.
- **Networking and knowledge sharing** which can to be achieved through virtual platforms, empirical data base, and specific communication products which are targeted to specific audiences and forums across Belize.



- ***Strategic partnerships and targeted engagement strategies*** which are based on addressing felt needs and priorities of each partners and working in mutually beneficial, win-win strategies and tasks.

## **Chapter 8: Agroforestry Planning, Monitoring, Evaluation and Learning**

The life blood of the mainstreaming process of AF in Belize is the planning, monitoring, evaluation and learning process which will permeate all operations of the NAFP.

Firstly, the project cycle management refers to the process followed for planning, executing and evaluating a project, while maintain alignment with the strategy and objectives agreed upon by stakeholders at the onset. ICRAF developed and applied a practical framework for AF development which involved 4 iterative steps:

- Characterization and diagnosis of existing land use systems in a particular area or region.
- Design of AF interventions, components and management regimes that could address such constraints in that particular area or region
- Testing of the AF recommendations either on stations, farms or forests.
- Up-scaling of successful AF alternatives for wide-scale adoption in the target area and other areas.

Secondly, the NAFP requires a well-functioning monitoring, evaluation and learning system (MELS), to be implemented in the following six steps (Franzel& Avila, 1991). Based on the expected outcome and impact areas, indicated above, establish a consensus with target beneficiaries or stakeholders on a hierarchy of criteria and indicators to evaluate the performance of the AF interventions or components.

1. Agree on the specific, measurable, appropriate, reliable and time-specified (SMART) indicators for each AF system or component under evaluation, based on the expected results and outputs (or hypothesis in the case of an experiment).
2. Select the right tools and methods to measure each indicator, such as cases studies, field surveys, data recording or periodic measurements.
3. Assign responsibilities as to who will collect data and who will analyze and write up the results, and allocate resources so these tasks will be carried out.
4. Analyse results together among the team, and share the results also with all the stakeholders, in particular the farmers and producers.
5. Based on the analysis, improve the AF interventions for follow-up actions.



6. Use all the above to learn and design better AF programs, projects and above all, improve the NAFF, as well as the agriculture and forest sectors of our country.

The planning and MELS will be extremely vital to the success of the NAFF in that the most strategic output of the MELS will be the identification of new AF initiatives and proposals for projects that can attract financial and in-kind contributions from local, national and international donors. In this sense, the NAFC and its Secretariat will be predicated on their continued attention to updating and fine-tuning the financial sustainability plan.

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## **Annex 1. Inaugural meeting with the National Agroforestry Policy Development Team**

### **Report of the Inaugural Meeting of the National Agroforestry Policy Development Team**

**August 13, 2017**

**Via: Microsoft Teams**

### **Participants and brief comments they made:**

- Mr. Colin Mattis (Chair), Deputy Chief Climate Change Officer, National Climate Change Office
- Ms. Johanna Pacheco, Adaptation Officer, National Climate Change Office
- Mr. Max Ortega works with BLPA. His work with agroforestry (AF) included working on improving and building model farms with Climate Smart Silvopastoral Systems. He previously worked at IICA.
- Mr. Edilberto Romero, Program for Belize. His work includes working with agroforestry practices.
- Ms. Christina Garcia, YCT, works in the Maya Golden Landscape utilizing agroforestry practices with cacao and inga alley cropping for 12- 15 years. They work along with the indigenous community to teach sustainable practices. They have around 25 models of agroforestry practices.
- Ms. Giselle Marin (ERI) works at Environmental Research Institute in the Maya Forest Corridor. They also work with agroforestry practices.
- Dr. Elma Kay works of the Environmental Research Institute. Dr.Kay stated that they don't work with agroforestry per se.
- Mr. Wilber Sabido, Chief Forest Officer: he has formal training at CATIE in agroforestry. He considers agroforestry integral in their perspective and assisting in the economy especially in the local economy and communities who depend on forest.
- Dr. Marcelino Avila, International Agroforestry Expert, CATIE Consultant.
- Mrs. Helen Choco-Galindo, National Agroforestry Project Coordinator, CATIE
- Ms. Fay Garnett- District Agriculture Coordinator, Ministry of Agriculture
- Ms. Zoe Zetina- Director of the Faculty of Agriculture, University of Belize- Central Farm Campus
- Mr. Francisco Tzul- Professor, Faculty of Agriculture, University of Belize- Central Farm Campus

Mr. Colin Mattis gave the welcome address. He presented the agenda for approval. **Annex 1** has the agenda used for the meeting and time distribution for each item on the agenda.

He requested that each of the members gave a small introduction about themselves and give a small description on their work with agroforestry, as listed above.

### **Review of Technical Guideline**

The Chair gave a small thank you and gave Dr. Marcelino Avila the chance to present the Technical Guidelines **for National Agroforestry Policy Development Team prepared by the National Climate Change Office/CATIE**, which he presented in terms of:



- Background
- Definition of Agroforestry
- Objectives & Activities
- Expected Outputs
- Specific Responsibilities of Policy Development Team
- Implementation Period

After the presentation was finished, the Chair opened a space for the comments on the technical guideline.

Christina from the YCT asked how can we get the buy in from the private sector.

Colin mentioned that this question pertains mostly to the policy itself and that it can be answered later in the meeting, right after the policy presentation.

Edilberto Romero: stated that under Proposed Membership, Program for Belize is spelled in the British English. He suggested this to change from “programme” to “program”. He also noted that under specific responsibilities of the Policy Development team “... the member of PDT will be expected to participate jointly at 4 discrete steps of the process:” he added that there is a step missing and that there is only 3 step (a), (b) and (c). He also emphasized that there should be something that works toward Food Security and Ensuring nutritional balance and land management should be included on a long-term basis.

Wilber Sabido: asked that within the guidelines what safeguard has been taken to guarantee that these government sectors are actually involved so that when the time comes to endorsement and activation of the policy there will be no backing off from these two sectors in so far as they not saying that they were not involved or integrated in the discussion because many times that have been a fact that have caused that other policies to be implemented and executed successful.

He also added the private sector engagement is important. How do we integrate them to a certain extent within this group especially as it pertains to the small- and large-scale producer which to a large extent at the end of the day this policy should affect and to a large extent benefit. How to do we, through these guidelines, seek to have them integrated into the discussion and hopefully have that proverbial buy-in to ensure that they integrate this policy into their decision making, planning on day-to-day operational perspective so that in the end we fulfil the purpose and the objective of this policy.

Dr. Avila said that he fully agrees with the point that is being made by Mr. Sabido which was also highlighted in the comment that was made by Ms. Garcia on how we are going to integrate the private sector in the analysis of what this policy is destined to do. We have consulted with some farmers, producers, associations and possibly even some people who are involved in the processing and marketing of the type of products that we know will be important outputs of this policy. That is why the follow-up consultations in the districts are important but they are constraints because of COVID. But we must have that input from the private sector and the best way to have it is to go down to the districts, community and farmers level because that is where we can see the relevance and adoptability of a policy like this. At the national level, we can include organizations like BAPS, cane farmers association, SIRDI, DFC and commercial banks. Those are the powerful sectors that have to do with policy, those are the ones in financing and investment and those are the ones involved in marketing and processing and exporting, and those who are the ones managing farms whether they are large, medium and small operators, we need to make sure that we have their inputs.

Dr. Kay: Is there a way to include everyone - those who are missing into this group? Such as the Lands Department in particular because everything has to do with land use. There is a draft land-use policy that hasn't been implemented and with an implementation framework. So how do we articulate those things and if it doesn't work, how to get them



involved in this group? How are we going to reach out to make sure they are integrated, because they are such a key Department.

Dr. Avila: said that he did consult, they are one or two who can participate but we were never able to meet them. He added that we are trying to get the latest copy of the land-use policy but he did not succeed in getting a copy. Apparently, the copy is not available to the public but stated they would be available for an interview. He added that we can invite the head of the land use policy to enter the group. He also said that he fully agreed with the land use dimension of agroforestry because it cuts across agriculture and forestry and other sectors.

The Chair added that initially the intention was to have someone from lands but they (Technical assistance team and NCCO) wanted to limit the size of the committee and they didn't want to committee to be too large so they tried to streamline who were going to be in the committee. But it would be acceptable to include these key players not only in the team that we are discussing right now but to ensure that many of them are consulted as we go forward so that this policy can be owned by everybody. He added that they will make a special effort to make them part of the team.

Helen added that she has presented the letter "request for assistance" which was signed by the CEO and she had written an email with detailed reasons she needed the policy but she couldn't get a hold of the new land policy.

The Chair stated that they are going to work from their end to get a hold of that policy and will ensure that it is forwarded to the technical team so that it can be used for the development of the policy.

Giselle Marin asked: under the implementation activities where it takes about consultation meeting with key stakeholders, would we include industrial sector like the Mennonite and sugar cane industry because there is room for restoration and agroforestry practices in that area as well?

Helen added that some entities from the industrial sector have been interviewed; the private and industrial sectors such as SIRDI, Texbel and Lime Co, CGA, KT Enterprise, TKO Farms, the Spanish Lookout Community, etc. She also stated that they tried to get in contact with CPBL but couldn't get hold of them. She is trying to get the participation of Bowen and Bowen because they are doing agroforestry practices.

After this discussion was over, Dr. Avila moved on the presentation of the National Agroforestry Policy.

## **Review of the 1<sup>st</sup> Draft Belize National Agroforestry Policy**

Dr. Avila made a PPP starting with the basic framework followed in developing the Belize NAFP

- Chapter 1: Introduction
- Chapter 2: Justification for a National Agroforestry Policy
- Chapter 3: Agroforestry practices and Potential in Belize
- Chapter 4: Constraints to AF development in Belize
- Chapter 5: National Policy Goals, Objectives and Principles
- Chapter 6: The pillars and expected impacts of the AF policy
- Chapter 7: Organizational strategy and institutional mechanisms for sustainability
- Chapter 8: AF planning, Monitoring, Evaluation and Learning

After the presentation, the Chair opened a space for the comments on the AF policy.

The Chair thanked the participants for bearing with the us (technical assistance team and NCCO) in the meeting. He added that Dr. Kay noted that the Ministry of Natural Resources were working with Targets for land degradation neutrality and that report should be final. He added that he will try to get access to that report and hand it over to us.



He also stated that Dr. Avila will now answer the question that Ms. Garcia asked at the beginning of the meeting. After answering this question, then the other members can continue with their comments on the policy. He apologizes for the timing and pleaded to bear just until we (technical assistance team and NCCO) get over the comments and questions.

Dr. Avila said that the comment made was on chapter 4 of the policy with the issue of the private sector. He added that it's a very good note and suggestion and it is something that needs to be more explicit in how are we going to introduce, consult and involve the private sector in the elaboration of the policy. He added if she would have some specific suggestions for us we would greatly appreciate it.

The Chair asked if Ms. Garcia has to give her comment now or is it something that she can email to Dr. Avila later. He also encourages everyone to contact Dr. Avila and Helen for additional inputs towards the policy.

Christina Garcia: how best can we integrate the private sector because this was discussed at the beginning of the first meeting because they felt that it is necessary to involve the private sector at the beginning and to get buy-in from them because they are an important entity to bring forward and to participate in the overall discussion.

Dr. Avila responded that they would appreciate some feedback of the draft. If you could provide it on track mode, that would be excellent. He also encourages the other members of the team to do the same. And that we need to think about the suggestion and maybe include a section on private sector engagement and go back to our methodology and consult on these stakeholders and beneficiary.

The Chair asked Dr. Avila if he has any other additional suggestions on how we are going about integrating other member from the private sector.

Dr. Avila said that this needs to be done through the consultations to get their feedback, another possibility is to invite them to participate in this Team and explore whether they would be interested in participating.

Helen added there is some interest from the private sector, but because we wanted to keep the members of the team to a number below ten, so we did not want invite more.

The Chair added there is interest in including private farmers (Mennonite), private citrus and sugar cane farmers. He knows that the technical assistance team is trying to include everyone and that he is aware that Covid 19 is placing a bit of a challenge but that we will be working together to develop a good strategy to get in touch with everyone. He added that he would like to get suggestions from other team member on how to get to most key stakeholders.

Max Ortega added that based on his experience, introducing new technologies and climate change resiliency has been more challenging because it is basically changing the mindset of the people and it requires financing, and change in practice is an investment. They were developing loan profiles with La Inmaculada Credit Union and they have been trying to develop 10 model farms and they were planning a trip to Guatemala to show them exactly what was being done there. After 2 years of the interventions, the project will come to an end. He wants to know if we can work together to have continuity of the project because the project is at infancy stage. He added that the project in Guatemala took 10 years working to see if their fruits.

Dr. Avila said that if the AF Secretariat was working, the Secretariat would have planned and already have a proposal for continuity and there would have been someone who would have been interested in continuing with the project. He added that donors like hearing about success stories and would be more encouraged to donate more for continuity of the project that are beginning to produce good results.

Wilber Sabido: as it pertains to the inclusion of the private sector whether at the development team or at the national level seeing how we can enable them in providing feedback on the policy is critical. One of the main things we need to



be able to flip the coin and see how we can create incentives to have whoever is interested in AF to see AF not only as a tree planting exercise but to show them how they can benefit from an ecological, economic and medium to long term perspective.

How we can promote AF as a way of how people can benefit from, especially from the impoverished communities. It is really the background that was presented especially the fact that we have a 43% of our population in poverty. The other thing is how do we convince the producer to introduce these practices into their production, probably through production, increase yield. Probably that ought to be included in the agroforestry policy itself.

The other concern is that in the document chapters 2-5 where it mentions REDD+, it is as though AF is responding to REDD+. He doesn't agree because both as tools that can be used to reduce deforestation and lower carbon emission, the focus on these strategies should be as tools to meet the objective of the country's goals and international commitments.

He agrees with Dr. Avila having the Secretariat because it ought to be the vehicle that lead us towards to be integral stakeholder to implement agroforestry implementation and to have a very good idea of the different on-going projects so that they can build on each other so as to prevent concerns that Mr. Max Ortega has (no continuity of the project). There are many nationalized initiatives that are ongoing and some are in the pipeline that can complete the project that is going on. There is investment and willingness that can actually help achieve the national targets.

Mr Sabido continued: apart from the (proposed) council, there is SDG round table that can be aligned and could take note of what is happening in the development of the policy. "Really it is to see how we can communicate with each other and what can be the level of investment that can be shared to conduct different projects."

Edilberto Romero: the national agroforestry council, "does it include the look at economic feasibility and design of AF system? It is important to look at the economic development feasibility of agroforestry systems because we need to make sure we can come up with effective system that are cost efficient and profitable systems, unless we are talking about food security." He added that he doesn't see this in the AF council so he was wondering if it should be there. In the monitoring and evaluation looking at nutritional improvement, "we know that is a major issue. It is called for in the objectives so we need to make sure it is reflected in the outcomes in the monitoring and outcomes and evaluation. We also need to look at the preservation and maintenance of preservation of genetic material, because we can see how hybrid and GMOs are increasing at the expense of indigenous seeds and genetic material." He added that he would like to see this incorporated in the policy.

A question regarding in the outcomes, sequestration of carbon is at 40 million per year. He would like to know how this number came about and he would like to know if this is a feasible number and that the country will be able to meet this target.

Dr. Avila responded that we will try to get feedback from the draft or the main part that will be interesting and main scope of the private sector. He appreciates the short- and long-term benefits, he added that there is the need to have a combination, whether we want a long- and short-term combination. There is a need to emphasize that AF can deliver and contribute to some important national targets such as poverty, food security, environmental services and so forth, that can improve the lives of people and biodiversity. Thus, this needs to be the main justification of the policy. It is a justification that needs to be submitted to see if donors can contribute to the program and see if this falls within and can benefit from this within their own mandates.

We cannot present this NAF policy as independent; we need to understand where the linkages and synergies are and where this policy can fit within the national SDGs. We need to make the connections, to see where we can fit the policy within the country's plan (e.g. Plan Belize)



Mr Romero spoke about profitability, it is in the second goal, profitability in term of agriculture, in his terms of work socio-economic fits in there. An ex ante analysis needs to be carried out and what would be the cost and benefits of implementing the AF and state what this policy will do and how they will be affected and what will be done when they are implemented. The economic feasibility needs to be done, will it pay off, what is the rate of return and it needs to be done because it's a long-term investment which requires an ex ante evaluation, that is, before we "plant".

Dr. Avila indicated that the 40 million estimates came from a Forest Dept Report. He invited the Chair and Mr. Sabido to comment on whether this is a realistic estimate (i.e. the 40 million Carbon sequestration). Mr. Sabido answered that the number is based on mostly as an opportunity cost meaning the benefit we will receive if we don't cut down the forest.

The Chair called attention to a question on this chat: Will the proposed AF council be designated by law?

Dr. Avila: if the ministry and institutions who are behind the policy (the ministry and the team), if they are in favour, they would present a policy, which if it is approved, may give rise to several bills. One may be on the establishment of the National AF Council and Secretariat. It will need to be presented by one of the ministries to get legislated; if not, it will not be recognized. It is similar to a bill that was used to establish the sugar, banana, citrus, fisheries boards. The policy could be an act and the main article would be the creation of a AF council, a secretariat, some functions and some programs.

Question 2 by Dr. Elma Kay: is there any existing inter-sectorial roundtable that can take on the role envisioned by the council? I feel like that they keep creating a new council for each policy and we either continue working in silence or alone and we keep getting in all these activities and we end up with no time to keep paying attention to the work.

Dr. Avila answered he is not aware if there is any round table under the current development policies, goals or strategies. We need to find out about the round tables and we should not create a new council if this council can fit under an existing one.

The Chair spoke of the NCCO has a committee but he doesn't know if the AF policy can fit in the committee. Helen mentioned that it would need to the feedback from the team to know and learn other existing council so that a decision can be made.

Colin asked what can be done to avoid the council from falling apart.

Dr. Avila mentioned that he doesn't know the exact answer but that if the ministry understand that AF is a great opportunity, that the mechanism is multi-lateral and would need to involve several ministries and other non-governmental organizations, then the council and secretariat under one ministry would not work well under the current parliamentary system.

Helen added that for the policy to be implemented well, it needs the participation of the three ministries and that there would need to be the interest and willingness from the team to push forward the policy so that an implementation phase can happen.

Edilberto Romero: said that it's the same dilemma that happened when they discussed climate change and what was the best fit because it was something that was interdisciplinary. There is also the National Biodiversity Office that was established, it was seen as an office that has to work with other ministries and other organizations. The AF policy needs to have a sharp chair to galvanize and harvest the expertise that comes from the agricultural ministry and other areas. The major issues would be - where would this policy be housed institutionally, how it needs to be structured and what legal teeth it should have so that the policy can be promoted further.

In next step:



Helen mentioned that corrections will be introduced into the policy. Then there would be a district to district consultation, then the team would include the comments and feedback from the consultation activities. A final meeting with all the key stakeholders at the national level will be conducted with this Team to elaborate the final draft of the policy.

The Chair asked when the team will meet again? Dr. Avila mentioned that a meeting can be done after the district to district consultation assuming that there will be one (due to COVID 19) and then we would have a final meeting in September (the national meeting). So immediately after the consultation meetings, we can call an immediate meeting with the Team.

The Chair made the closing remarks. He apologized for running over-time at this first meeting and expressed profound gratitude for their valuable inputs and patience.

He requested and encourages the team to give feedback on the policy and council.

## **Annex 2. Agenda of the Inaugural Meeting of the NAFP Development Team**

### **National Agroforestry Policy Development Team First Meeting (Virtual)**

**Thursday, August 13, 2020  
2:15 to 5:00 PM**

<b>Time</b>	<b>Topic</b>	<b>Presenter</b>
2:20 pm	Welcome and Introductory Remarks	Mr. Colin Mattis, Chair
2:30	Introductions	All Participants
2.45	Technical Guidelines	Dr. M. Avila, CATIE Consultant
3.00	Discussion of main issues	All Participants
3.15	First draft of the NAF Policy	Dr. M. Avila
3:50	Discussion of main issues	All Participants
4:50	Next steps	Ms H. Choco-Galindo, CATIE, Belize
5:00	Closing	Mr. Colin Mattis

#### **Documents reviewed and discussed at the meeting:**

1. Technical Guidelines for the National Agroforestry Policy Development Team
2. First Draft of the National Agroforestry Policy

