



**AgEcon** SEARCH  
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

*The World's Largest Open Access Agricultural & Applied Economics Digital Library*

**This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.**

**Help ensure our sustainability.**

Give to AgEcon Search

AgEcon Search  
<http://ageconsearch.umn.edu>  
[aesearch@umn.edu](mailto:aesearch@umn.edu)

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

---

---

# AN ENVIRONMENTALLY SOUND BELIZEAN AGRICULTURE - NON-GOVERNMENTAL ORGANIZATION (NGO) ACTION

ANSELMO CASTANEDA

*(Coordinator, Natural Resource Management Program, Belize Enterprise for Sustained Technology (B.E.S.T), Belize, C.A.)*

---

---

## ABSTRACT

With the introduction of Westernized farming technologies in the late 1950s, modern agriculture in Belize has depended on expensive and poisonous external inputs. Decentralized efforts by NGOs during the last decade in the promotion of sustainable agricultural practices is documented and a few recommendations on what can be done in the near future are offered.

## INTRODUCTION

Belizean agriculture since the 1940s has moved from an organic base to one which is increasingly dependent on inorganic external inputs. It was not until the late 1960s that agricultural chemicals began to be imported by commercial houses in Belize City or commodity associations in the districts. However, it is very important to note that we can still find today in many parts of Belize corn, rice, beans, mangoes, citrus, etc. being produced organically or without external inputs.

Agricultural production for the export market has been the major user of external inputs. Subsistence farmers who are the main producers of the food consumed on Belizean tables have recently begun to use external inputs.

While export-oriented agricultural production is based on mechanized farming, the subsistence farmers depend mainly on Milpa, or slash and burn technology, to clear and prepare land for cultivation. While it is common to hear

that Milpa farming is the main reason for deforestation and soil erosion, we also always hear about commercial mechanized agriculture only as a major contributor to foreign exchange earnings but not as a contributor to the environmental degradation of our natural resources. Western agricultural philosophy has taught the use of the soil as a resource to obtain short-term benefits regardless of erosion or pollution which will render these soils useless to future generations. The care and love for this resource is not considered a priority.

The work of NGOs in Belize has centred over the last three to five years, on training the individual or group of farmers to become better managers of the soil by using various technologies. This note documents in part, some of the activities of the various agencies involved in one aspect or another of sustainable agriculture and show how their efforts can be coordinated to produce better land husbandry in the future.

Land husbandry is the implementation and management of preferred systems of land use in such ways that there will be no loss of the land's stability, productivity or usefulness for the chosen purpose. In the context of small scale farming systems, land husbandry involves rural land users and their families making decisions to manage their interrelated resources of soil, climate, plants, animals, implements, labour, knowledge and capital to meet their household needs on a sustainable and productive basis.<sup>1</sup>

## BELIZEAN NGOS IN SUSTAINABLE AGRICULTURE

In the five-year development Plan (1990-94), the Government of Belize clearly states that one of the objectives in the agricultural sector is to "*promote agricultural development which is consistent with national environmental and conservation goals*".<sup>2</sup> The activities which follow are within the major framework of government's development policy.

Starting in Northern Belize is an organization called CRWRC which is based one mile past Louisville village on the Northern Highway. Their contribution has been the promotion of cover crops, coffee bean (*Mucuna* sp.) and jack bean (*Cannavalia* sp.) as living and dead mulches, crop rotation between legume and non-legume crops and the introduction to the use of natural pesticides (neem) and crops as insect repellents. Their work reached as far west as the Valley of Peace. Working in the Orange Walk district is Help for Progress in the village of Indian Church where refugees or a major sector of the population. Composting, minimum tillage and repellent crops are included among the technologies which farmers are being trained to use and adopt. BEST has also assisted a Yo Creek Cooperative in using organic fertilizers and repellent crops.

In the Belize district, HELP and BEST introduced organic farming concepts such as compost making to a group of farmers of the Maskall area; again a refugee sector of the population was being targeted. A prominent agency promoting sustainable agriculture in the district is Parrot Hill Farm which is situated at Mile 31 on the Western Highway. Their main target is to make pine ridge soils sustainably productive using mechanized farming methods. A training centre with facilities for 20 interns is already in place. Monkey Bay Wildlife Sanctuary is another NGO which is promoting and practising organic farming. CARE, based in Belize City, also had a REAP program which introduced sustainable agricultural concepts to participating primary schools country-wide.

The Cayo district is covered by more agencies promoting and offering training in sustainable agriculture. In addition to BEST and

HELP, there is the Bio-gas program, based in Central Farm and partly managed among NGOs, farmers and the Ministry of Agriculture, which has as its main focus the use of the biofertilizer in production of crops. The National 4-H Centre has lately included sustainable agricultural technologies in its curriculum to train Belizean youth in agriculture. HELP has a small organic farm in the backyard of its headquarters. This farm is used for in-house training purposes for clients or the general public. BEST and HELP are also jointly involved in the promotion of the formation of a national group whose primary objective is to represent the interests of sustainable agriculture practitioners in all aspects, including training and marketing. BEST is also involved in coordinating two yearly one-week visits by Belizeans to Loma Linda Sustainable Agriculture Centre located 10 kilometers west of Tegucigalpa, Honduras. During the last two years over 40 farmers and teachers have received training and are also "spreading the gospel" at schools and rural Belize. BEST is planning to set up a training centre, CENTINEL, which will offer practical hands-on training to school children, youth out of school, male and female farmers and trainers in the development community for live-in periods of one to three weeks. This centre will cut across the five components of the Natural Resource Management Program at BEST. These components are conventional agricultural practices, sustainable agricultural practices, renewable energy sources, environmental education, and networking.

In southern Belize, in addition to HELP and BEST, there are other agencies promoting sustainable agriculture, namely, DEM DATS DOING, Belize Agro-forestry Centre, TAMP/VITA and the PACA project. BEST and HELP work with client groups in Hopkins, Georgetown, Santa Rosa in the Stann Creek district and with groups in Indian Creek, Big Falls, Columbia, and San Antonio in the Toledo district. DEM DATS DOING is a highly integrated farm where farmers can learn the principles of good land husbandry practices. This farm is also a model for small-scale eco-tourism in practice. The Belize Agro-forestry Centre, located two miles outside the village of Columbia and up the Rio Grande River, organizes workshops on per-maculture and is

managed by North Americans. The TAMP/VITA project, a USAID/GOB funded project, is now finished but their work on sustainable agriculture is being continued by a group of trained farmers under the leadership of DEM DATS DOING. The PACA project, a Central American regional project funded by USAID, recently opened shop to carry out training in environmental education and sustainable agriculture.

These efforts by NGOs are in the right direction in preparing the future for Belizean agriculture. However, the co-ordination of these training programs needs to be addressed urgently by a central agency within the department, the community or the Ministry of Agriculture. BEST stands ready to undertake this role.

## RECOMMENDATIONS

What are the basic requirements for Belizean agriculture to become sustainable? In attempting to answer this question, I will present some ideas on "how to" achieve sustainability in food production both for the local and export markets.

A *sustainable agriculture desk* at the highest level. The GOB's commitment to promote sustainable agriculture needs a formal and physical presence of an office within the MOA&F which will be mandated to facilitate and run a program of sustainable agriculture and set policies which will take into account the contribution of both the private and public sector in adopting environmentally-sound production practices.

The currently de-centralized programme being carried out by NGOs needs to be recognized and funded by the GOB since the farmers already identify themselves with the technicians and a partnership is already in place. Here it should be noted that the current staff of the Extension Service is not enough. The training of farmers to become para-technicians should be considered seriously. There is a need to strengthen existing local NGOs involved in sustainable agriculture rather than to create new ones, particularly foreign NGOs.

*Research and development* in sustainable agriculture practices by currently

existing agencies, e.g. CARDI, Central Farm, BABCO, are necessary so that the technologies developed become relevant to eco-agrosystems existing in the country. This local research and development becomes more important when commodities are for the export market which is so demanding for quality and residue-free products. The publication of a newsletter solely devoted to sustainable agriculture is now considered due. Special efforts should be made to include sustainable agriculture as an integral part of the curriculum offered at the Belize College of Agriculture.

Belizeans require sustainable agriculture training at the diploma, B.Sc., M.Sc. and Ph.D. levels in order to lead and be in control of the Belizean agricultural sector of the future. This *upgrading of the educational level* of Belizean agriculturalists is paramount to our survival as a leading tropical country in conservation and development of our natural resources and people.

*Commercial agriculture producers* should be convinced with hard data and practical example that mechanization can be used to make sustainable agriculture profitable. Parrot Hill Farm is already working in this direction. The commodity associations are to be strongly encouraged to invest in this direction. Government policy development and support should be made available to create the linkage between sustainable and commercial agriculture. This linkage is the key towards food security in the future.

The *farmers need to become the decision-makers* on which technologies are better suited for them. In order to do this in a sustainable way, development workers need to use structured training, education, information and technology sharing as well as *participatory development approaches* which will allow the farmers to be able to make decisions in order to adjust to change. This capacity to adapt to changing conditions ultimately determines the sustainability of agriculture which ensures the continuity of their way of life.

## CONCLUSION

Increasingly rapid changes in economic,

technological and demographic conditions in Belize, demand increasingly rapid changes in small and large holder farming systems. New market opportunities, promotion of chemical inputs and financial constraints may lead or force farmers to seek short-term profits and pay less attention to keeping their agriculture in balance with ecological conditions.

Until now, agricultural policies - whether oriented toward export production or local food production - have focused too narrowly on maximizing short-term profits rather than on long-term sustainable management of local resources by farmers. Although this is understandable from the point of view of policy-makers confronted with questions of food security, employment, foreign exchange and population growth, it does not take into account sufficiently, the interests of individual farmers and rural communities and does not lead to empowerment.

During the last 5 to 10 years, various international development organizations such as UN agencies and the World Commission on Environment and Development,<sup>3</sup> have laid out the preconditions and broad outlines for achieving sustainable agriculture. The responsibility for elaborating concepts and taking practical steps lies with our national government, national and international institutions, private development agencies (PDAs or NGOs) and, not least, the farmers themselves. This is a "call for action" for one and all to look at the future of Belizean agriculture as a sustainable one.

#### Endnotes:

<sup>1</sup>DOUGLAS, M. (1991): The Concept of Land Husbandry\*, *Contour*: 3(2):3-4. Indonesia.

<sup>2</sup>GOVERNMENT OF BELIZE (1990-94): *Development Plan*. pp.26.

<sup>3</sup>WORLD COMMISSION ON ENVIRONMENT AND DEVELOPMENT (1992): 'A Call for Sustainable Agriculture', In: *Farming for the Future*. Reinjntjes *et al.* (eds.). Macmillan, Netherlands.

#### LIST OF ABBREVIATIONS

BABCO	-	Belize Agri-business Company
BEST	-	Belize Enterprise for Sustained Technology
CARDI	-	Caribbean Agricultural Research and Development Institute
CARE	-	Cooperative Assistance Relief Everywhere
CENTINEL	-	Centre for Environmentally-Guided Training in Nutritional and Energy-Conscious Living at BEST
CRWRC	-	Christian Reformed World Relief Committee
DEM DATS	-	Them That Are Doing
DOING	-	Government of Belize
GOB	-	Government of Belize
HELP	-	Help for Progress
MOA&F	-	Ministry of Agriculture & Fisheries
NARESMA	-	Natural Resource Management Program at BEST
NGO	-	Non-Governmental Organization
PACA	-	Proyecto Ambiental Central Americano
PDA	-	Private Development Agency
REAP	-	Rural Education for Agricultural Production
TAMP/VITA	-	Toledo Agricultural Marketing Project/Volunteers in Technical Assistance
UN	-	United Nations
BUSAID	-	United States Agency for International Development