Rural Livelihoods

CANARI

Caribbean Natural Resources Institute

Technical Report No. 402

Toute Bagai: Small steps to build resilience to climate change



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1. Introduction

In June 2012, under its *Rural Livelihoods Programme*, the Caribbean Natural Resource Institute (CANARI), with funding from the United Nations Development Fund for Women (UN Women), initiated an eighteen-month project entitled "*Empowering rural women through improving livelihoods*". The purpose of the project was to improve the livelihoods of rural women in Trinidad and Tobago by supporting them to develop or strengthen small economic enterprises based on the sustainable use of natural resources and also to communicate to policy-makers how to develop or strengthen enabling mechanisms to support rural women entrepreneurs.

The project sought to address two main challenges:

1. Rural women entrepreneurs often face significant challenges in trying to start and sustain successful small enterprises. These challenges include issues related to the internal capacity of rural women as well as inefficiencies in the macro-political and macro-institutional contexts to support women entrepreneurs, the poor and rural communities.

2. Rural community livelihoods, including those of rural women, are often based on the use of natural resources which are currently under threat from impacts related to climate change and unsustainable natural resource use practices.

The key project activities involved among other things, assisting the participants to understand the impact of climate change on their enterprises and ways to build resilience, establishment of a network of women in small businesses and disbursement of small grants for improvement of businesses.

One of the outputs of the project is a case study to show the ways in which one rural entrepreneur has used her new understanding of the potential impact of climate change to start a new enterprise.

2. Expected impacts of climate change in the Caribbean

Climate change is expected to have adverse effects on a broad range of human and ecological systems in the Caribbean. In the Caribbean temperatures are expected to rise by 1.4°C to 3.2°C by the end of the 21st century.

Climate change driven impacts such as sea-level rise, increased temperatures, changes in rainfall patterns and increased intensity of storm activity will pose significant challenges for a region with natural resource-based economies (e.g. agriculture and tourism) which are fundamentally climate dependent. Natural resources important to key economic sectors in many Caribbean countries are already being subjected to degradation due to a changing climate. For example, the coastal areas of some low-lying tourism dependent islands are being inundated by rising sea levels, causing the erosion of beaches that are main attractions for tourists. In other countries, intense storms and periods of drought and flooding are destroying agricultural crops. Consequently, persons whose livelihoods depend on these and related sectors are being affected by climate change.

Adaptive strategies can be implemented at the national level to enable individuals and communities to build resilience to climate change. In particular, building resilience will ensure that resource-dependent communities are able to cope with the immediate effects of climate change.

3. About "*Toute Bagai*"

Toute Bagai is a small business that was developed by Beulah Joseph-Clunis in her capacity as President of the Dorcas Women's group of Matelot, a rural community with a population of less than 1,000 people. It is located on the north coast of Trinidad at the very end of the road that passes through Toco on the north-eastern tip of the island before turning west along the north coast.

One of the stated aims and objectives of the group is to promote the interests and welfare of the community by fostering spiritual, cultural, recreational, educational, social and environmental activities. *Toute Bagai* specialises in the sale of plants and plant-based manures sourced from the mainly privately- owned forests in Matelot in the Northern Range of Trinidad. The business is based in Matelot and was established in 2013.

Beulah, a 64 year old mother of two adult children, conceptualised the business at one of the four one-day workshops led by CANARI under the project "*Empowering rural women through improving livelihoods*". The motivation for starting the enterprise was to create a business that would incorporate the Dorcas Women's group's love for plants and gardening. The women in the community were interested in growing and selling flowers found in the forests surrounding their community. Based on the training she received at the workshop, Beulah was able to conduct a feasibility assessment for the prospective enterprise including examining the options for the sustainable use of the natural resources that were the feedstock for the small business project. Although the small enterprise scored highly, the feasibility assessment revealed several challenges facing the enterprise. These include access to resources such as human resources, understanding climate change and lack of capacity of group members to undertake such an enterprise.

Beulah Joseph-Clunis stands in the greenhouse as she explains where she collected the plants.

While Beulah takes responsibility for the general management of the business, the other members of the Matelot's Dorcas Women's group help with the day to day operations. Among other activities, the women assist by contributing plants for sale, and their time to oversee sales.

As a business that is based on the use of natural resources, the key challenges to be addressed immediately are the impacts that climate change will have on the enterprise, and the financing of interventions to build resilience to these impacts.

4. Expected impacts of climate change on *Toute Bagai*

The Intergovernmental Panel on Climate Change's (IPCC's) Fifth Assessment Report projects a 1-4°C increase in temperature for the Caribbean. The southern Caribbean including Trinidad and Tobago is expected to have drier conditions with drying in the traditional wet season (June- November) (Carabine & Dupar, 2014). Researchers at the University of the West Indies (UWI) have further warned that the Caribbean can expect to receive 40% less rainfall between May and November by 2050[1]. The Caribbean is also expected to see increased storm intensity. Increased temperatures, storm intensity, and reduced rainfall can increase incidences of natural disasters such as floods, landslides and droughts. In 2014, Trinidad and Tobago and several of its Caribbean neighbours experienced dryer than average end of the year conditions that prompted fears of drought[2].

Climate plays an important role in the functioning, structure and health of forests. Climate change is predicted to affect future forest conditions by altering forest processes and biodiversity. For example, climate change driven impacts such as increasing temperatures create conditions that increase the probability of plant pest and disease outbreaks. Further, climate is expected to become more variable with greater risk of extreme weather events, such as prolonged drought, and more intense storms and floods. Such changes will constrain the growth and productivity of forests and negatively affect the survival of plants being nurtured for sale. This poses a serious threat to the sustainability of small enterprises, such as *Toute Bagai*, that depend directly on forest resources for their viability. Building resilience to these changes through adaptive measures is therefore critical.

The green house is located on the edge of a cliff overlooking the Caribbean Sea.

Matelot is a coastal village located on the northern coast of Trinidad. Most of the infrastructure such as the roads and the buildings in the community is located on the coast. There is the potential that infrastructure can be directly affected by sea level rise and storm surges. The attendant strong winds associated with extreme weather events expected in the region can also potentially affect roads and infrastructure leading to and in the community and therefore the sustainability of the enterprises located there.

1 http://www.caribbean360.com/news/climate-change-could-cause-caribbean-rainfall-to-decline-as-much-as-40-researcher?utm_source=Caribbean360%20Newsletters&utm_campaign=c6d008b24c-Vol_9_Issue_224_News11_6_2014&utm_medium=email&utm_term=0_350247989a-c6d008b24c-39346877

2 http://www.cdema.org/index.php?option=com_content&view=article&id=450:looming-drought-in-the-caribbean&catid=34:news&Itemid=266

5. Building resilience to climate change in the business

During the training workshops for the project, participants had the opportunity to learn how to incorporate climate change resilience measures in the development and management of their small businesses. Under the project, each participant was provided with a small grant towards the development of their business and the incorporation, where possible, of mitigation and adaptation measures with respect to climate change.

To climate proof the business, Beulah's group proposed construction of a greenhouse. The greenhouse would serve as a protective structure in which the group could house their plants to safeguard against pests and extreme weather conditions. Beulah's group submitted a proposal to CANARI with the budgetary requirements for the project. US$1,000 provided was used to finance the materials and labour to construct the greenhouse, which was completed in February 2014.

The greenhouse is a simple way to control environmental conditions for growing plants.

Some problems encountered in construction of the greenhouse and the operation of the business that restrict resilience to climate change include:

- The location of the structure – The greenhouse was sited based on the primary concern of security from larceny. However, other factors such as wind conditions and sea blast were not sufficiently considered. Consequently the structure is stressed by constant strong winds. This could affect the longevity of the structure.
- The design of the structure – This was taken from the internet without considering the local availability of materials or the ability/suitability of materials to withstand the existing environmental conditions. As a result, material substitutions had to be made which may have affected the integrity of the design.
- Availability of goods for sale – Too much reliance has been placed on hunters and foragers sourcing and supplying the forest plants.
- Marketing – At present the market for the goods provided by the business is limited to members of the immediate community who know about the business and are willing to support the women's efforts.
- Access – Because the roads leading from the community are poorly maintained, the women expect that there may be some difficulties getting their products to and from markets that are outside their community.
- Human resource capacity – The business is relying heavily on a few members in the community, many of whom are already engaged in other activities. This can stretch the human resources associated with the enterprise and negatively impacts its resilience.

The business was only recently launched so it is too early to assess the impacts of the greenhouse on the business operations and the impacts of the environment on the structural integrity of the greenhouse. The group is however, aware of the potential challenges that it faces as it seeks to develop the enterprise. The group is planning to move the greenhouse to a location that is not exposed to wind and that is accessible to all the members once it is identified. Beulah also hopes to one day pay women in the community to assist with the day to day operation of the enterprise.

6. Lessons learnt on climate proofing community enterprises

- In developing strategies to build the resilience of natural resource based small businesses to climate change, adequate research and planning must be undertaken to ensure the viability and success of the selected interventions. In the case of Toute Bagai, while a strategy was developed to protect the natural resource stock (forest plants) of the business, sufficient consideration was not given to the environmental impacts on the intervention (greenhouse) itself.
- Participation of a wider cross-section of the community (e.g. persons knowledgeable about materials and construction and the impacts of prevailing weather conditions on construction materials) in the planning phase of the project may have resulted in a design and materials more suited to the location of the intervention.
- Building resilience requires that all aspects within and outside of the business are considered. For example, internally it is important to strengthen human resource capacity for business management and operations. Infrastructure and market access are critical external factors that will affect the resilience of a business and contingency plans need to be put in place to address where these may be compromised and affect the business.

Community enterprises in the Caribbean islands are extremely vulnerable to the impacts of climate change and other threats (natural, social and economic). Participatory approaches to building resilience will be needed to engage community entrepreneurs in leading the analysis of threats, developing, and testing solutions. Approaches need to be piloted in communities and case studies documented to analyse lessons and recommendations on best practices that can be applied across the region.

Beulah and other members of the Dorcas Women's Group stand outside the greenhouse.

Beulah proudly displays one of her plants grown in the greenhouse.

References

Carabine, E. & Dupar, M., 2014. *The IPCC's Fifth Assessment Report: What's in it for Small Island Developing States?*. London: Overseas Development Institute and Climate and Development Knowledge Network.

Caribbean Natural Resources Institute

The Caribbean Natural Resources Institute (CANARI) is a regional technical non-profit organisation which has been working in the islands of the Caribbean for over 20 years. Our mission is to promote and facilitate equitable participation and effective collaboration in the management of natural resources critical to development in the Caribbean islands, so that people will have a better quality of life and natural resources will be conserved, through action learning and research, capacity building and fostering partnerships.

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