Evolution of a New Management Alternative
In the Vaca Forest Reserve

This document serves to systematize the evolution of a new management experience conducted in the Vaca Forest Reserve with the aim of presenting the steps undertaken by FCD in order to maintain this track of forest as a protected area based on principles of community involvement and participation.

Prepared by: Rafael Manzanero, Executive Director FCD
Arnoldo Melendez, Extension Technician FCD
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EVOLUTION OF A NEW MANAGEMENT ALTERNATIVE IN THE VACA FOREST RESERVE

Introduction - Target Area

The Vaca Forest Reserve was declared in 1991 with an estimated 52,000 acres through a Statutory Instrument (SI). The reasons behind its declaration included: to maintain adequate stock of renewable natural resources for sustainable use by the local communities and contribute to the national economy; as well as for watershed protection.

The Vaca Forest Reserve SI of 1991 contained a “save and except” clause taking into account land leases previously distributed. By 1995, a Forest Department inspection noted that there were 33 different agricultural clearances inside the reserve. The inspection also aimed at establishing all land leases granted, so that any further leasing could be prevented.

In 2003, the Ministry of Natural Resources, signed a Forest Reserve Consolidation (Amendment) Order for Vaca Forest Reserve where the total acreage of the reserved was decreased to approximately 40,375 acres. This translated to approximately 11,625 acres (22%) being excised with the objective of providing land to farmers from the buffering communities including Benque Viejo del Carmen, San Jose Succotz and Arenal. The excised land was located away from the Macal River in order to ensure that the Mollejon Dam remained protected from erosion and sedimentation. In 2011 a further 4,673 acres was de-reserved from the Vaca Forest Reserve for agricultural land use. The actual acreage of the Vaca Forest Reserve is approximately 35,701 acres (14,447 hectares).

But this has not placated the multiple interests on the Vaca’s resources. Degradation continues to occur within the Vaca Forest Reserve due to several anthropogenic activities which include logging, farming, cattle ranching, exploitation of non-timber forest products, wildlife poaching and looting.
Background

Since 1989 the Vaca Forest Reserve was visited by members of Friends for Conservation and Development (FCD) for recreational and educational purposes. At the time the organization was known as the Youth Environmental Action Group (YEAG). Youth members would traverse the milpa farms behind the village of San Jose Succotz, in order to reach the area. The prominent farmers in the area were the Morales and Martinez families. To this day, they still live in the area although the surrounding landscape has changed with more farmers that have moved in the area.

The 2003 election year prompted a major interest of farmers from the surrounding communities including Arenal, Benque Viejo del Carmen and San Jose Succotz to view the Vaca as a place for land grab. A land rush occurred, that threatened the integrity of the area. The primary areas sought consisted of those nearby the Macal River. The same year, the Ministry of Natural Resources signed a Forest Reserve Consolidation (Amendment) Order for the Vaca Forest Reserve where the total acreage of the reserve was decreased to approximately 40,375 acres. This translated to approximately 11,625 acres (22%) being excised with the objective of providing land to farmers and other interested parties.

FCD saw the excision of the reserve as a precedence that would imperil further the loss of the reserve in the future unless measures were taken to control the movement of people into the reserve. A foreign company, Bare Foot moved further south into the reserve in 2004 taking over approximately 70 acres of land and started to promote the sale of these parcels inside the protected area as a prestigious forest land for tranquility and wilderness experience. It was then that FCD started a campaign to report the illegal land grab of the Vaca Forest Reserve. No paper trail was found regarding any possible transactions made between Barefoot and personnel of the Forest Department, Land Department and the Department of the Environment. It was clear; however, that someone had facilitated for Barefoot to operate in the area. Eventually the Ministry of Natural Resources ordered the Company to develop an Environmental Impact Assessment that would serve to assess the viability of the development. Once it arrived at the National Environmental Appraisal Committee, the venture was not endorsed leading to the Company abandoning the area and losing tens of thousands of investments already made inside the reserve.

Fifteen years had passed since the first visit made by members of the YEAG and it remained clear that the threats to protected areas, particularly those categorized as forest reserves, would be challenged with the growing needs of communities found near these areas.

Legal Framework Review

In 2009 with financial support of the Food and Agriculture Organization (FAO) FCD contracted consultants to conduct a review of the Forest Act and explored if the legal framework permitted for community participation in the management and utilization of a forest reserve. The results of the study were produced on the document titled, “A Mechanism for Integrating Community Co-
management of Forest Reserves with Local Communities in National Forest Policy.” The review noted the following:

The Forests Act does not make specific provisions for co-management of forest reserves. This suggests that the Forest Department does not have the lawful authority to enter into co-management agreements with NGOs or communities. However, apart from the consideration that the forest legislation is generally skewed towards productive and environmental aspects of forestry, there is nothing which legally prohibits the Forest Department from long term-partnerships with communities for co-management of forest reserves.¹

The Forests Act would need to be amended in order for these partnerships to have a legal basis. Such amendment to the Act would need to specifically empower the Forest Department to enter into co-management agreements. Any co-management agreements signed prior to such amendments to the forest legislation would not stand in court, as has occurred with the case of “SATIIM v Forest Department, US Capital Energy”.

It furthermore states that the role of communities in forest reserve management is parallel to their responsibilities over the same: to ensure that there is proper use and management of the reserve by themselves and others, to secure the sustainability of the forest. The form which this role and responsibility takes can be varied, from direct management to partnership with the private sector, to participation in national or regional advisory councils. What must be assured is that there IS community involvement. This helps to create a reconnection of local people with the forests, provides new collaborative approaches in which confidence and trust can be built, and contributes to sustainable futures.

Ronnie de Camino (2005) describes the key advantage of community forest management as “giving access to forest resources to poor rural communities.” But also cautions that one of the greatest challenges to community forest management and the development of community forest enterprises is that these require technical and organizational capacities that may not be present in most communities. This means that significant investments of time and money are required for capacity building. Most capacity building initiatives have been established from the outside, without effective participation and control from communities.

**Stakeholder Involvement**

Given the importance of community participation, even at the stage of project development and eventual implementation, FCD ensured that there be a full and conscious participation of farmers working inside and on the periphery of the Vaca Plateau. Consultations were held and ideas and suggestions contributed by farmers and community members from Arenal, Benque Viejo and San Jose Succotz were incorporated in project documents presented to funding agencies in 2010. To launch the first project community meetings and a survey were held in order to obtain information

¹ Rather, it may a prevailing culture within the forestry sector globally that forestry is a science and should best be left to the capable technicians, which would in itself be prohibitive.
on the actual situation of the reserve and possible interventions to reduce land degradation and improve the quality of life of farmers operating in the area through sustainable livelihood projects.

The Vaca Forest Reserve Working Committee (VWC) was subsequently formed in August of 2010 comprised of representatives from the Belize Electricity Company Limited (BECOL), Forest Department (FD), Agriculture Department, Global Environment Facility/Small Grant Programme (GEF SGP), Friends for Conservation and Development (FCD) and the Cayo Quality Honey Producers Cooperative Society Limited (CQHPC). The responsibility of the Committee was to provide technical assistance to FCD’s Extension Technician for the conduction of the projects; provide recommendations and assist in monitoring and evaluation of conservation and development activities that would impact the reserve among others. The Committee met on a quarterly basis, reviewed progress reports and provided comprehensive recommendations on follow up actions. Overall these recommendations helped FCD’s Extension Technician to successfully implement project activities more efficiently and effectively.

In addition, the Forest Department responsible for the reserve held meetings with FCD personnel to discuss issues of mutual interest with respect to the implementation of a Landscape Management Project. The meetings were complemented with field visits carried out to the project site in order to verify that actions outlined on the project would be viable.

Finally, a participative evaluation workshop was held at the Mormons Church in the village of San Jose Succotz with farmers who were now members of the Friends of Vaca Forest Reserve, members of the Vaca Working Committee, members of the Cayo Quality Honey Producers Cooperative, representatives from the Agriculture, the Forest Department and Friends for Conservation and Development. Contributions given by participants formed part of the final evaluation report provided to the funding agency, GEF SGP. The Evaluation Workshop report provided an overview of the impact the project had on target communities and other stakeholders of the Vaca Forest Reserve. This project helped establish a formidable intervention that continues on for the protection of the Vaca Forest reserve through community participation and stewardship.

**Efforts Undertaken in the Vaca Forest Reserve**

The multiple interests that threaten the Vaca Forest Reserve, as described under the 2007 Technical Assessment Report of the Maya Mountain Massif (MMM), led FCD to develop and implement alternative actions that would address and maintain the functionality of the ecosystem. The technical assessment report provided sound recommendations on the promotion of sustainable income generating activities such as apiculture, cacao and xate production among others. Given the actual situation of Vaca Forest Reserve, FCD recommended a community forestry program that incorporated sustainable livelihood strategies thus diversifying local economic opportunities for farmers. This went in line with the landscape management goals of the Forest Department.

The efforts were contained within the scope of the following projects:
• Reducing Land Degradation in the Vaca Forest Reserve through Apiculture

• Instituting a Sustainable Land Management Demonstration Program in the Vaca Forest Reserve

• Management of Sustainable Agricultural Territories in MESOAMERICA

• Promoting Landscape Management in the Vaca Forest Reserve through Community Development and Support

The projects were aimed at:

1. Reducing Land Degradation in the Vaca Forest Reserve through the implementation of Beekeeping

2. Developing demonstration projects using sustainable land management approach and a plan that illustrated the most impacted area with management recommendations for the restoration and protection of the ecosystem.

3. Implementation of activities with farmers using agro-ecological methods, reforestation, farm plans and integrated pilot project and other sustainable alternative for the protection and conservation of the soil.

4. Promoting Landscape Management in the Vaca Forest Reserve through Community Development and Support by strengthening an apiculture local based activity inside and near the reserve; building the capacity of the Friends of the Vaca Forest Reserve and promoting an improved farming technology among farmers.

These projects have had a strong component of building a conservation ethic among the participants with the hope of instilling a stewardship program. The long term goal would be to prepare a responsible community enterprise that would seek to serve as custodians of the natural and cultural resources of the Vaca Forest Reserve. Generally, the projects addressed land degradation, poverty reduction and capacity development through the promotion of activities in sustainable land management. These activities were complimented with the establishment of a reforestation program.

FCD at the time did not possess the capabilities and knowledge to engage farmers in extension services and agro-ecology. But it resolved the challenge by reaching a formal partnership with CATIE. Not only was the partnership able to build our capabilities through technical support but it also financed several pilot projects. The invaluable contributions of CATIE provided farmers with the tools and instruments for the practice of agro-ecological techniques, using the “Learn as you do” methodology. These methods were implemented in the field through the assistance of CATIE/MESSOTERA field technicians. FCD’s Extension Technician accompanied the process.
Project Interventions in The Vaca Forest Reserve

Apiculture

The piloting of an apiculture project with farmers located inside and near the Vaca Forest Reserve was considered a viable enterprise and involved twenty farmers. This project was funded by the Global Environment Facility Small Grants Programme (GEF SGP) and provided start up bee colonies to fifteen (15) new beekeepers and complete bee gears to all twenty (20) farmers. A comprehensive training package was developed and implemented in the areas of 1) Basic Management of Africanized Bees, 2) Pre Harvest and Post Harvest and 3) Production and Certification of Organic Honey. These trainings were complemented with an exchange visit that was carried out in Retaluleu, Guatemala where Belizean beekeepers visited La Asociación de Apicultores del Suroccidente de Guatemala and El Programa MOSCAMED and learned how to produce docile queen and organic honey. The CATIE/MESOTERRA project also contributed to this exchange program.

To better organize the bee-keeping initiative inside the Vaca Forest Reserve, in 2011 a concession agreement was signed between the Cayo Quality Honey Producers Cooperative Society Limited (CQHPC) and the Forest Department (FD) where 5,000 acres of land was granted exclusively for the setting up of apiaries. Fifteen (15) members set up apiaries in and outside of the reserve and continue doing bee-keeping in the area. The concession agreement was given for a period of twelve months after which a renewal would be sought annually.

Apiculture is a profitable business in Belize. Honey is being sold at $2.50 a pound to the CQHPC.

The environmental awareness and the education component, that formed part of the apiculture project was very important in building the spirit of stewardship and promoting the importance of the protected area; created an understanding of the concept of landscape, biodiversity conservation, honey as a green business and community participation in reserve management.

Sustainable Land Management Program

The Sustainable Land Management Demonstration Program was the second project designed and implemented in the Vaca Forest Reserve. The project was aimed at developing a landscape management strategy that would serve as the roadmap for an alternative management practice of a forest reserve. This project was funded by the United Nations Development Programme (UNDP), through the Forest Department who were fully responsible for oversight of the project. A Consultant from The Tropical Agricultural Research
and Training Center (CATIE) from San Jose, Costa Rica, Mr. Ney Rios was contracted to prepare the Landscape Management Strategy for the Vaca Forest Reserve making special emphasis on the area already impacted by farmers who were actively engaged in agricultural activities inside the reserve. The strategy would provide alternative and sustainable livelihood options that would contribute to maintain our natural environment and restore areas already degraded. The overall goal was to maintain the productive capacity of the Vaca Forest Reserve while guaranteeing its ecological functionality.

The Landscape Management Strategy for the Vaca Forest Reserve was completed and submitted to the Forest Department. Verbally the strategy was endorsed by the Forest Department. This serves as the primary management and conservation planning tool used by FCD in the reserve. The strategy is the most comprehensive document to date that gives a detailed description of the reserve, present state, analysis of the threats and the key stakeholders. More importantly it describes six (6) strategic directions and fifty eight (58) strategic actions where a participatory approach is proposed and recommends a set of mitigation, restoration and production activities at a farm and landscape level.

Management of Sustainable Agricultural Territories in Mesoamerica

June 1, 2010 the Tropical Agricultural Research and Training Center (CATIE) and Friends for Conservation and Development (FCD) signed a letter of understanding to participate in the Management of Sustainable Agricultural Territories of Mesoamerica. This letter of understanding served as a reference for the development and establishment of a formal cooperation nexus and joint action between FCD and CATIE to develop activities to achieve the objectives of the project MESOTERRA in a pilot zone, namely the Vaca Forest Reserve. In addition, two staff from FCD participated on a week training course funded by CATIE/MESOTERRA at CATIE at Turrialba Costa Rica. The courses were related to the field of work that the project outlined.

Since the signing of the letter of understanding, CATIE provided funds to FCD for the implementation of activities with farmers working inside the Vaca Forest Reserve. An operational plan for 2011/12 was prepared and listed the activities that were carried out by FCD with funds received. Activities included:

1. A loan of $10,000.00 to Cayo Quality Honey Producers Cooperative (CQHPC) for the purchasing of honey
2. Financial assistance to farmers for the implementation of pilot projects
3. Financial assistance for the elaboration of a Business and Marketing Plan for CQHPC
4. Financial assistance for the establishment a reforestation nursery
5. Technical assistance for the implementation and facilitation of training in agro-ecology
6. Technical support on the exchange visit of CQHPC members to Retauleu, Guatemala and
7. Facilitation of environmental education to communities in Guatemala.

CATIE’s invaluable assistance and contribution complemented GEF SGP and UNDP projects since all the funded and supported tasks were linked to the protection and restoration of the Vaca Forest Reserve. The three projects had one common goal which was to provide sustainable livelihood opportunities to farmers that would contribute to improve their quality of life and at the same time reduce land degradation inside the Vaca Forest Reserve.

**Farm Planning**

Farm Planning formed an integral part of the capacity building program for farmers in the Vaca Forest Reserve. During the process of compiling information two workshops were facilitated by Mr. Jorge Cruz Bolaños at Water Hole with twenty two farmers from buffering communities. The objective of the workshop was to understand the present situation of farmers and to provide them with the tools on how to prepare a farm plan. Farm planning is very important for farmers since it outlines the different activities that farmers intend to implement in their farms over a 12 month period.

The farm plan helped farmers to prepare an inventory of the available resources they had on their farmland and to develop a list of actions to develop and goals to fulfill. Under the CATIE/MESOTERRA project preparing a farm plan was a condition for farmers in order to receive financial assistance. During the project life nine farm plans were prepared by nine farmers.

Once financed technical supervision was provided by FCD’s Extension Technician.

**Integrated Farming Systems**

The Vaca Forest Reserve is considered one of the most threatened protected areas in the Chiquibul Maya Mountain Massif due to the multiple pressures caused by human interactions on the environment. Based on this, Friends for Conservation and Development (FCD) took the initiative to help farmers with an alternative livelihood means that promoted local economic opportunity for farmers in food security and the reduction of land degradation inside the reserve.

For the 2011-2013 FCD worked with farmers, members of the Friends of the Vaca Forest Reserve and supported them directly through Integrated Farming Systems. The financial assistance came from CATIE Mesoterra. Integrated Farming is a system where more than one crop is cultivated in
the same parcel of land at the same time using the farm plan as a guide. Selected farmers prepared their farm plans and defined the activities that were carried out. By diversifying their crops farmers would have a better opportunity of a constant income during the entire year.

FCD’s Extension Technician used agro-ecological practices and farmer field school methodologies to empower farmers to identify and adopt the most suitable practices to their farming system thus improving their farm management skills. During the period, nine (9) farmers were involved, six (6) farmers were involved in basic grains and vegetable production, while three (3) were involved in the improvement of pasture through the division of pasture with live fences and the setting up of protein banks with leucaena and mar alfalfa. The “learning by doing” approach proved to be successful, by the many examples that are now visible in the Vaca Forest Reserve.

Reforestation

Taking the recommendations of the Landscape Management Strategy, a program of restoration was also imperative for the protection of the reserve. One of the proposed actions included the reforestation of denuded areas and management of forest zones aimed at conserving and restoring the forestry resources. This involved the replanting of native plant species in the interior of remnant primary forests, secondary growth and riparian forests.

Two reforestation nurseries were established by members of Friends of the Vaca Forest Reserve. The first was built inside the Vaca Forest Reserve while the second was established at an area known as Water Hole. The two nurseries had a total of four thousand five hundred (4,500) mahogany (Swietenia macrophylla) plants and five hundred cacao seedlings. 85% of the total seeds planted germinated and of this amount each farmer received one hundred plants which were transplanted on the perimeter of their farmland while the rest was planted in denuded areas inside the reserve.

On October 18, 2012 members of the Friends of the Vaca Forest Reserve transplanted one thousand and twenty mahogany plants, in addition, to those planted on their farmlands. The planting of these seedlings followed the advice of the Forest Officer who visited the area and recommended for farmers to plant mahogany along creek sides and on flat land while cedar should be planted on hillsides.
A demarcation line was opened and two signs were placed indicating that the area was being used for a reforestation program and that no farmers were allowed to disturb those areas. The establishment of these nurseries was made possible through the generous financial contribution of CATIE/MESOTERRA under the 2012 operational plan.

**Video Documentary**

In order to raise visibility of the work underway in the Vaca Forest Reserve an environmental education documentary was prepared. The documentary promotes the importance of protected areas, the concept of landscape management, biodiversity, green business and community participation. To do this a series of visits were made to the reserve. Information incorporated in the documentary included the following:

1. Present status of the Vaca Forest Reserve;
2. Importance of conserving biodiversity;
3. Importance of beekeeping as an alternative to reduce land degradation;
4. Training of farmers and the implementation of beekeeping and integrated farming systems inside a reserve as a green business.

The video documentary was used through the public outreach presentations conducted by FCD’s Environmental Educator. Ten communities that buffer the Chiquibul Maya Mountain Massif were visited. The production of this video documentary came through the generous financial contribution of the Global Environmental Facility Small Grant Programme.

**Business and Marketing Plan**

A five year Business and Marketing Plan was prepared for the Cayo Quality Honey Producers Cooperative Society Limited (CQHPC) under the CATIE/MESOTERRA Project. This formed part of FCD’s agreement reached in 2012 with the Cooperative. The Marketing and Business Plan was prepared by The Belize Enterprise for Sustainable Technology (BEST), a well known and respectable non-governmental organization based in Belmopan. The objective of the Plan was to provide a framework for the successful and profitable business of CQHPC. The consultant compiled, analyzed and interpreted all social and economic data relevant to CQHPC. The plan included a situational analysis of the Cooperative as well as a market analysis.
on supply and demand of honey products in Belize. The financial projections and analysis projected determined the financial viability of the Cooperative.

The Consultant worked along with the Management Committee of the CQHPC and identified the strategic objectives as well as the critical needs of the Cooperative. The plan provides a list of recommendations to be followed up by the Cayo Quality Honey Producers Cooperative.

**An Agro-Ecology Practical Guide**

An Agro-Ecology Practical Guide that describes the techniques and strategies on agro-ecology was prepared for members of the Friends of the Vaca Forest Reserve. This practical guide serves as background information to all the training modules facilitated to farmers over a period of fifteen months. The guide describes in chronological order the series of trainings and workshops provided to farmers in the Vaca plateau during the lifespan of the various projects. These trainings were provided by special in-country technicians and complimented by technicians from CATIE/MESOTERRA.

**Trainings**

Training workshops formed an integral component of all projects developed and implemented in the Vaca Plateau. They were geared at providing skills and knowledge to farmers working in and out of the reserve in order to reduce land degradation and enhance protection of the Vaca Forest Reserve.

This included a series of training workshops with the main objective of presenting new alternatives to the conventional farming system, namely “slash and burn” milpa system. All trainings had a theory and practical component that made it unique for farmers to absorb easy the information presented. The “learn by doing” technique and technicians being facilitators rather than teachers made the process and method comprehensible. The field school approach was complimented by the incorporation of the socio-ecological condition that strengthened the capacity of farmers to analyze their production systems, the identification of main constraints and possible solutions. The success of these training sessions led farmers to adopt the most suitable practices and technologies to their farming system and the need to become more productive, profitable and responsible to the changing environment.

Training was provided on the following areas:
The fundamental goal of the training workshops was to increase farmer’s capacity to apply new technologies and be able to share information with others on the best practices learnt. The trainings implemented under the three different projects complimented each other since it built and strengthened farmer’s capacity in the management of bees and farming techniques and helped promote a better care and stewardship for the reserve.

**Lessons Learned**

1. The Farm Plan technique helped farmers to understand the importance of planning their farm since it contributed to greater income through the planting and selling of different crops and vegetables throughout the year.

2. Training workshops facilitated during the implementation of the projects equipped farmers with greater skills and knowledge thus leading them to have better yields in vegetable production.

3. Farmers who had a sense of ownership of the project demonstrated more conservation consciousness in protecting the forest.

4. It is vital to have the support of the governmental agencies in regulating and enforcing laws which would reduce the negative actions of other non compliant farmers and illegal loggers.

5. In order for Friends of Vaca Forest Reserve to play an active role as custodians of the Vaca Forest Reserve the full support of the Forest and Land Department is necessary. Otherwise farmers consider that their efforts are in vain.
6. Improved access to the location is a requirement for effective monitoring of all activities which can further lead to a higher development and expansion of the honey and vegetable industry in the area. But opening a road can also create access for unplanned and undesirable development. Because of the importance behind this we can observe multiple interests eyeing it as an opportunity to assist but get a share of the Vaca. We have learnt that in the end it is not good for these interests to override community interests.

7. Providing finances to farmers in order to practice the tools and systems learnt is important if we want for them to test the new methods.

Conclusion

Using Landscape management as an alternative for taking care of a reserve is not only innovative but it makes a paradigm shift in the management and conservation of a forest reserve. Traditionally, a forest reserve is seen as an area where timber exploitation is prevalent and where de-reservations are more common. Yet despite all the anthropogenic threats on the resources of the Vaca Forest reserve, it has been proven, thanks to the financial donors and Vaca stakeholders, that there can be a better future for this forested area based on principles of economic and sustainable development.

At FCD we are conscious that the Vaca is a protected area and as such farmers cannot remain permanently settled in these areas. However, they can use these resources in a sustainable manner and through a formal understanding with the state. After all, if farmers and by extension other stakeholders can see the benefits derived by the use of the resources then they will certainly safeguard it from exploitation and degradation.

The state does not have the capacity to monitor and protect the Vaca Forest Reserve, thus the options are limited. But the direct involvement of farmers and other stakeholders in the use and management of the natural resources does hold a lot of promise. The platform created through the Friends of the Vaca Forest Reserve is already a major achievement towards building a true stewardship program.

Unlike the past, when it appeared as if though the Vaca Forest Reserve would have disappeared there now appears a new experience and hope for the protection of this northernmost protected area in the Chiquibul-Maya Mountains. It is a new experience which involves local people. It is a new concept that will need further support and to be studied and monitored closely as it evolves. The true maintenance and protection of this forest in the long term will depend on how closely the state works with these stakeholders and how compatible the decisions are made with the landscape management framework which contains four pillars: restoration, protection, production and participation.