

ASSESSMENT OF THE ASSET PROJECT

Prepared for:

**Office of Economic Growth
USAID/Haiti**

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EXECUTIVE SUMMARY

The USAID/Haiti Mission assembled an Assessment Team to evaluate the progress and impact of the ASSET Project's conservation agriculture and natural resource management activities in the Belle Fontaine area of the upper Rivières Grise and Blanche watersheds, and provide recommendations to the Mission on cost-effective use of USAID resources for this and similar environmental management activities. The five-person team, including representatives of USAID/Haiti, USDA/Forest Service, and USAID/LAC, as well as two consultants, conducted its assessment from December 10-19, 2001. Three days were spent in the field interviewing beneficiaries and field staff. Team conclusions and recommendations were unanimous.

The Team believes that the ASSET activities in Belle Fontaine are having significant environmental and economic impacts in the project area and should be continued in a streamlined form until mid- to late 2003 to consolidate the progress made to date and to provide appropriate lessons learned from this project's innovative approach to conservation agriculture and environmental rehabilitation.

The incremental benefits of continuing to finance this project at a reduced level include: 1) consolidation of the community organization efforts, conservation structures and agricultural innovations made in 1999-2001, allowing farmers to gain more sustainable benefits; 2) development of long-term maintenance and management systems for water collection infrastructure investments; 3) development of the potential shown by land use management plans to tackle conservation issues beyond the range of single landowners; and, 4) quantitative evaluation of the economic benefits generated by project interventions in a high-altitude agro-ecological zone quite different from those where other USAID programs are working.

The ASSET Project should begin transitioning now to a smaller, more streamlined operation, with this transition complete by June 2002. Work from July 2002 until mid-2003 can be effectively accomplished by maintaining most of the very capable Haitian field staff, but with a reduced number of international advisors and support staff in Petionville, and, hence, a lower budget. Specific recommendations on the transition are provided in the report.

The Team strongly recommends against merging the ASSET Project with HAP or any other project as this process would distract time and energy away from the effort of consolidating the field work in the limited time available.

The Team's specific observations and recommendations are summarized in the following points:

1. **Technical Approach:** The Team believes that the ASSET technical approach is appropriate for the circumstances of the Belle Fontaine area and perhaps other parts of Haiti. This is borne out by some substantial early results in community mobilization and organization, water infrastructure investment, and agro-forestry and soil conservation. The major design elements of the approach are viable, but the Team feels that some should be modified as recommended in the report.
2. **Environmental Rehabilitation:** The Rivières Grise and Blanche (RGB) watershed is a very large catchment relative to the scale of ASSET activities in Belle Fontaine. The reduction of

environmental degradation due to ASSET is currently on a small-scale, with localized effects. This is not related to a defect in the project approach, but rather to the much greater scale of resources and time required to affect change in the large RGB watershed. However, the project's approach of focusing on a landscape level is generating the potential for watershed rehabilitation on a significant scale within the Belle Fontaine area.

One success story is the recent community involvement in limiting and sanctioning free-range grazing through a collaboration with local government, based on the development of local authority over natural resources through *groupements*, the local civil society organizations. Other success stories include the improved productivity engendered by the small-scale residential rainwater cisterns and the development of new "islands of productivity" in the landscape, such as group soil conservation investments for vegetable market gardens and rehabilitated ravines.

3. **Community group formation:** Community group formation, i.e., *groupements*, has been on-going for three years. The Team believes that the *groupements* have made substantial progress in learning to work together effectively. They have had notable success in mobilizing community labor, organizing around the grazing problem, and are addressing other natural resource commons issues. They need time to implement the environmental solutions they are developing through the land use management plans.
4. **Water Catchments:** The *impluvia*, and especially the cisterns, have had a substantial impact on farmer production decisions and on household labor supply, i.e., much less time spent fetching water. However, the Team feels that once the existing and promised *impluvia* are finished, ASSET should not invest further in this technology, but should direct any infrastructure resources to cisterns. Cisterns are well-fitted to local social patterns.

The *groupements* will not be able to build either cisterns or *impluvia* without substantial outside resources, but they will be able to maintain them with some additional training. However, now that the demonstration sites are developed, it may be possible for *groupements* to attract funding from other sources for cisterns.

5. **Replication:** Project interventions have, to the Team's knowledge, not been replicated outside the project area. However, the number of functioning local *groupements* within the project area has increased from eight (8) to thirty-four (34) in the past four years. There also are examples of farmers who are not *groupements* members replicating some conservation techniques on their property, an indication of interest in and demand for Project interventions.
6. **Motivation of Beneficiaries:** The project beneficiaries are quite motivated to continue developing the agricultural potential of their lands while using appropriate conservation practices. Local farmers' participation in the local organizations is strong, and these organizations can, with additional Project help, be sustainable.

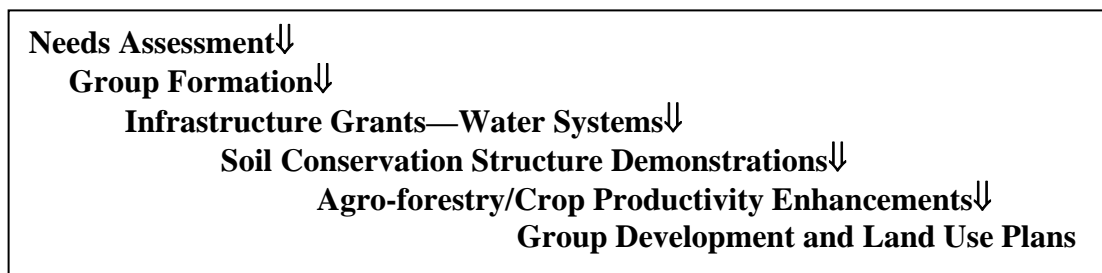
In summary, an extension of the Project to mid-2003 will allow the lessons learned by this innovative project to be usefully transferred to other USAID projects or to those of other donors.

1 INTRODUCTION

The ASSET Project has the stated purpose of “improving natural resource management practices while increasing agricultural productivity and income generation, and strengthening communities capacity to plan and manage their natural resources.” The watershed selected for the field portion of the Project was the upper basin of the Rivières Grise and Blanche (RGB) because of its perceived importance to Port-au-Prince water supply and downstream flooding and sedimentation. After some adjustments in scope, the Project has been working for three years in the *île central* sector of the Belle Fontaine watershed, a 50 km² subset of the broader 700 km² RGB watershed. This assessment is based on these three years of activity in the Belle Fontaine area and on plans as described in the FY2002 Project workplan.

The ASSET Project’s approach consists of an innovative, but somewhat experimental combination of infrastructure investments, conservation farming and forestry technology, and development of local organizations designed to foment long-term, locally-based natural resource conservation. The Project also is innovative in that by working through community organizations, it seeks to affect change at the landscape or sub-watershed level, rather than solely at the agricultural parcel level.

Project investments start with water collection systems because they are a high priority for the local people. To receive grants for the desired water systems, the Project requires that the local population: 1) be organized into community groups (*groupements*) and contribute local labor and materials to construction of the water systems, and 2) establish a number of demonstration soil conservation structures in their area, also with *groupement* labor. Once soil conservation parcels are established, members are provided with improved agro-forestry and field crops for use on their *lakou’s*¹ and fields. The *groupement* then initiates a process of community land use planning. These land use management plans are intended to guide future conservation work within the *groupement* area, based on priorities identified by the group members. To a large extent, each element in this approach builds upon the preceding element, as reflected in the figure below.



¹ The Haitian peasant system of production generally includes three or four distinct parcels. The *lakou* is a house-and-yard residential compound including a mix of annuals, trees and other perennials – *jaden devan pòt kay* (garden by the house door). Belle Fontaine farmers also have gardens adjacent to the *lakou* called *jaden prè kay* (gardens near the house) farmed intensively for annual food crops, with little or no tree cover. Other more distant field gardens (*jaden lwen*) produce a more limited range of cultigens, emphasizing dry site cereals and stalk beans.

The following section analyzes the relative value and success of the technical elements of this system. Section 3 addresses the community organization aspects of the program. Section 4 provides overall conclusions of the assessment, and Section 5 presents some recommendations for the transition phase of the Project.

2 OBSERVATIONS ON PROJECT TECHNICAL ELEMENTS

2.1 Water Supply Collection and Management

Water scarcity is the single greatest impediment to improved agricultural productivity and quality of life in the Belle Fontaine area. The Project's strategy is to increase access to and reliability of water supply through the construction of rainwater collection systems—small-scale cisterns and larger *impluvia*—and use those investments to encourage formation of local groups for broader conservation objectives. The Team believes this strategy is sound and effective.

The rainwater collection systems improve household productivity in two ways: 1) they provide extra water for dry-season irrigation of nurseries and high-value fruit and vegetable crops, and 2) they free up valuable time for women and children that otherwise would be spent collecting water from far-off springs (up to four hours of water hauling daily).

Impluvia: The community-level rainwater catchments called *impluvia* require a large community labor commitment, and require strong community coordination to manage the infrastructure and water supply. The prospect of receiving *impluvia* provided the incentive for the formation of three *groupements* that joined the Federation (a regional umbrella organization of *groupements*). However, the *impluvium* creates a common property resource which, if not adequately managed, has the potential to engender conflict among *groupement* members, related to who gets access to community water, rationing, and dealing with misuse/abuse. Overall, performance is mixed; some *impluvia* appear to be successfully managed, while community control of others is more lax.

Lakou Cisterns: The Team believes that the construction of cisterns in *lakou* residential compounds is a critically important Project investment. Targeting one backyard cistern for each cluster of three to five houses fits with the traditional residential patterns of Belle Fontaine based on extended families – a pattern far more developed in Belle Fontaine than many other areas of rural Haiti. These systems are highly valued by Project participants. While some cisterns have developed minor maintenance problems, the benefits to improved and diversified crop production, and to family labor savings are undeniable. The Team believes that with some maintenance training, the cisterns will be sustainable investments.

Technical Recommendations on Water Supply:

- The Project should honor existing commitments to finish construction of planned *impluvia*, then discontinue investment in this technology. *Groupement* time and effort and Project resources should be devoted to other activities, e.g., cisterns, soil conservation structures, and marketing.

- ASSET should continue to support construction of cisterns and seek to maximize cistern coverage in the project area. Cisterns are integral to the expansion and success of crop diversification, income generation, and sustainable lifestyle for people in the region.
- The Project should experiment with alternate forms of appropriate technology in cistern design to lower costs and increase the potential for replication, e.g., use masonry tanks and existing coffee drying patios for water collection.
- The Project needs to strengthen *groupement* ability to manage, operate and maintain water supply infrastructure, including addressing issues of conflict resolution, operation and maintenance responsibilities and financing for repairs.
- The Project should provide basic education on drinking water disinfection and sanitation, as the cisterns and *impluvia* also are used to satisfy domestic water needs.

2.2 Expansion of *Lakou* Agro-forestry and Adjacent Gardens

The ASSET project is attempting to expand and improve the productivity of the *lakou* and adjacent production sites and gardens that make up the traditional agro-forestry and gardening system used by most families in Belle Fontaine. The Team believes that this is a very important focus of project work because it builds upon the investment in rainwater catchment systems, especially household cisterns, and supports the expansion of improved fertility and conservation of the farmer's most productive soils.

Specific Project interventions of note include expansion of temperate-climate vegetable crops (cabbage, beets, carrots, potatoes, garlic, etc.), increased coffee production, and introduction of new varieties of avocado, citrus, plantain, banana, and chirimoya. Farmers are eager to engage in more vegetable cropping, coffee and fruit production as an alternative to their current economic reliance on black beans and maize on erodible soils. If the Project can consolidate their work thus far, and continue to increase soil fertility, water supply, and marketing, the Team believes Belle Fontaine farmers will invest more in soil-conserving *lakou* systems and less in soil-degrading grain crops, thereby saving soil and improving the local environment.

The best farmers in the area appear to invest heavily in their *lakou*'s and adjacent gardens, especially in vegetable crop production for seasonal markets. This indicates that assisting more farmers to move in this direction is a good investment. Composting to enhance soil fertility for vegetable crop production is another complementary project intervention that seems to interest farmers.

Technical Recommendations on *Lakou* and Adjacent Gardens:

- ASSET should continue to prioritize *lakou* production and other adjacent gardens. This supports Project and farmer investments in water supply, soil conservation, and plant material, especially for temperate vegetable crop production. It also leverages Belle Fontaine's altitude and climate and relative proximity to Port-au-Prince.
- The Project needs to evaluate the economic viability of expanding certain *lakou* crops, especially coffee and fruits and obtain expert advice on marketing issues.

- The Project should continue to experiment with lighter, easy to transport *lakou* crops such as spices (e.g., thyme), garlic and others which take advantage of Belle Fontaine’s altitude and climate.

2.3 Extensive Agriculture and Soil Conservation

Farmers in Belle Fontaine produce a significant portion of their meager income producing black beans, maize, pigeon peas, and sorghum on dry rocky slopes that are extremely vulnerable to erosion due to their poor crop cover and steepness. The Project’s strong emphasis on using *groupement* labor to build rock contour barriers has yielded significant visual results on the landscape—many thousands of meters of barriers (*murs sec*) have been built or repaired. In many cases these walls have a built-up layer of deeper soil on their uphill face, and the Project has helped plant bananas, plantains, malanga, sweet potatoes or other crops in that strip of productive soil.

The Project has also assisted some *groupements* to build gully-plug ravine treatments which halt further erosion of the ravine, create new “islands” of productive soil for perennial crops, and reduce downstream erosion and runoff. Elephant grass vegetative barriers on sloping fields without rocks show promise too, especially if integrated into a diverse *bann manje* vegetative strip, protected from livestock.

Labor/Trade-Offs: The Team believes that the rotating group labor of the *groupement* is a good system for creating large numbers of rock barriers or gully plugs in a short time. The Team also believes that the trade-off between labor effort and increase in productive soils needs to be more carefully considered in site selection. For example, in a few areas where shallower slopes allow – particularly near residential compounds, ravines or eroded river banks – closely spaced rock barriers can be turned into level bench terraces, which create highly productive areas which, with adequate water supply, are an excellent investment.

Erosion in Grain Cropping: The Team would assert that heavy investments of labor to build rock walls on long steep slopes used for extensive grain cropping are not necessarily economical. If they do not increase productivity, they will not be maintained. Many Belle Fontaine farmers need to move rocks out of the way to plant grain crops, one of the reasons they are agreeable to the rock wall idea in the first place. But it is important to understand that on many of the steeper slopes, the erosion which damages soil productivity will continue between the rock walls if grain cropping systems do not include more cover or mulch, or less soil cultivation.

Technical Recommendations for Soil Conservation:

- To reverse the degradation of soils on the steeper slopes, the Project should encourage the use of live soil cover or mulch; rock barriers are not enough. Given the shortage of material for mulch, either permanent tree/grass cover, or green manure crops which protect the soil surface from rainfall impact are needed – *Mucuna* (velvet bean) or *Canavalia* are options.
- Rock barriers require a huge amount of work, and that work is likely to be most beneficial to farmers on sites where the return on investment is best, such as near a *lakou* or ravines where

lesser slopes allow bench terracing and build-up of productive better-watered soils. River beds in Bassin Medor also are a highly productive place to build rock terraces for silt capture.

- The Project should emphasize more the use of vegetative barriers due to ease of establishment. Vetiver grass is a locally-available element which deserves more use for this purpose, as a complement to more easily damaged, less rigid elephant grass.

2.4 Improved Tree and Vegetative Cover

Forestry activities are well-integrated into the other elements of the project, including the conservation demonstration sites, the *lakou* agro-ecosystem, and the land use management plans. To date the project has planted more than 1.4 million trees, with an additional 600,000 trees to be planted under the current Work Plan (July 2001 to June 2002). Survival rates of out-planted forestry seedlings appears to be high, and demand from farmers continues to be high. These plantings represent an excellent investment in stabilizing conservation structures, generating organic matter for soil fertility enhancement, and providing wood products. As such, their potential for increasing farmer income in the medium-term future is good.

Nurseries: The ASSET Project established three types of forestry nurseries—three high-production nurseries in Bassin Medor near the river, community nurseries next to *impluvia*, and *lakou*/home nurseries near cisterns. The nurseries are producing appropriate species of local and introduced high-yielding forest and fruit trees for local consumption and for extra income, as well as shrubs and grasses for use in soil conservation activities. The large nurseries in Bassin Medor have served their purpose in jump-starting massive tree production, but the Team believes that the most viable scale for sustainable nursery production is in the family-managed *lakou*.

Technical Recommendations for Forestry:

- The Team feels that the forestry component is an integral part of the overall Belle Fontaine restoration program and should be continued as long as the project is in existence.
- The Team feels that when the major forestry activities of the project are completed the three riverside nurseries should be closed. The Team feels these nurseries could not be maintained by the *groupements* in the Belle Fontaine area due to their distance from most planting areas.
- ASSET should continue training *groupement* members in home-based nursery management which they can use to grow trees in the *lakou* with water from cisterns.
- ASSET should engage the *groupements* in Morne Bouton and Doko in a planning process to assure sustainable harvest of the significant pine forest in the area.

2.5 Community-based Land Use Management Plans

The land-use management plans (LAMPs) form the basis for affecting natural resource management changes at the landscape level. The LAMP planning process has been used to identify common property issues that will require community response, such as: free range grazing and the lack of suitable grazing areas, ravines (e.g., high run-off and flash flooding, expansion), deforestation of fragile areas, water scarcity, abandoned lands, and landslide

dangers. Some *groupements* have even begun to institute new grazing regulations based on these community planning efforts.

The LAMPs will be the *groupements*' tool to guide their future management of natural resources, and, therefore, the means by which natural resource rehabilitation objectives of the project will be realized. In some areas, the planning process has allowed the *groupement* to identify families who own land in key problem areas, and recruit them into the *groupement*, and, therefore, into a possible solution.

Project technicians seem motivated to implement the process of establishing LAMPs and have made good progress in several *groupements*. The Team believes this process has great potential.

Technical Recommendations for Land Use Planning:

- The Project needs to ensure that *groupement* structures, training, and development contribute to the skill base required for the community to implement the land use management plans.
- The Project must ensure that each *groupement* has its champions for land use planning in the future absence of ASSET assistance. By definition the LAMPs are long-term projects that will necessitate continual promotion, and local leadership to motivate the community, promote activities, provide technical input in prioritization, etc.
- ASSET should utilize its animation team (to be recruited) as a key resource in the development of action plans to implement land use management plans, and generally in managing end-of-project transitions.

3 OBSERVATIONS ON DEVELOPING SUSTAINABLE LOCAL ORGANIZATIONS

Beneficiaries: Prior to ASSET, there were eight local *groupements* of small farmers in Belle Fontaine – none with legal recognition. In 1995 local groups joined loosely together as a federation, primarily to mobilize labor for road construction and to fight growing problems of crime.

By September 1999, a total of 26 *groupements* participated as partners in the ASSET outreach program – all with legal recognition. The majority of these groups formed after ASSET began operations in Belle Fontaine, beginning with its initial rapid assessment of the area in late 1997, early 1998.

At the time of the present assessment, there were 34 *groupements* in the Federation, including two new ones voted into the Federation in late November. These groups included a membership base estimated at 2,000, mostly adults, a third of whom are estimated to be women. Group members are drawn from households averaging six people per household. The membership base suggests direct project impact on around 10,000 people in Belle Fontaine including children and other family members.

In short, the number of groups and the membership base have both shown steady growth during the period of ASSET outreach in Belle Fontaine. Local interviews suggest that this growth can

be attributed in good part to the presence of ASSET, its dispersed network of NRM technicians, and its considerable investments in water infrastructure.²

Labor mobilization: The Belle Fontaine farmer *groupements* have demonstrated significant ability to organize unremunerated group labor for construction of water catchment systems, small community nurseries located near *impluvia*, and labor-intensive soil conservation structures such as rock walls in ravines, rock barriers and vegetative barriers in multi-plot zones of concentration, and vegetable gardens adjacent to residential compounds. The farmer *groupements* that work best are firmly rooted in traditional rotating labor arrangements including the *wonn* – an exchange labor group composed of 5 to 20 people. Most *groupements* schedule natural resource management (NRM) work at least once a week and sometimes twice weekly.

Grazing violations: In addition to the extreme shortage of water, farmers in Belle Fontaine consistently identify grazing abuses as a significant constraint to agriculture and reforestation. In response, the Belle Fontaine *groupements* have organized against uncontrolled grazing and created a decentralized monitoring network including monetary sanctions against violators. They have negotiated support for this effort from local elected officials at the communal sectional level (CASECs and ASECs) who play a role in local law-and-order arrangements in the absence of national police. The Team encountered some cases where non-members of *groupement* requested assistance and joined forces with *groupements* in the struggle against uncontrolled grazing.

Community-based NRM: In addition to grazing control, farmer *groupements* in Belle Fontaine are vested in other environmentally beneficial practices. These include soil conservation, upstream and downstream treatments in ravines, suppression of the use of fire to clear land, and its corollary, the production and use of significant quantities of compost – especially for high value crops such as vegetables. The *groupements* have also targeted zones of concentration to demonstrate heightened impact of dry wall (rock) terraces. In so doing, they have proved willing to treat plots owned by non-members and non-contributors. These organizational initiatives anticipate norms and practices that might well be built into land use management plans currently under development in 12 *groupements*.

Organizational framework: Despite successes in labor mobilization and organizing around NRM, some farmer groups suffer weaknesses in their structure and functioning. This includes problems of transparency, poor money management, poor diffusion of information, and centralized decision-making by the president or central committee without consulting with members. Decisions pertaining to distribution of benefits such as cisterns, or the distribution of scarce water resources from *impluvia*, have been subject to conflict and controversy. It is common for *groupements* to distinguish between “active” and “inactive” members without examining why some members become inactive. This lack of reflection can endanger the group’s future.

² These estimates are based on information from the Belle Fontaine Federation coordinator, Mr. St. Felix Orvilus, the ASSET rapid assessment report (Lowenthal *et al*, 1997), and the report entitled *Les groupements de Belle Fontaine impliqués dans le Projet ASSET* (Frisner Pierre & Zach Lea, Sept. 1999).

Furthermore, the Federation central committee is commonly viewed as the primary intermediary between local groups and ASSET in negotiating the delivery of ASSET services. There is evidence that the federation committee doesn't ensure free circulation of information and does not sufficiently consult with its membership base in making decisions.

Technical Recommendations on Development of Local Organizations:

- ASSET should move forward with recruitment of additional Haitian field personnel with good animation and community organization skills to work more closely with the *groupements* and the Federation in organizational strengthening.
- ASSET should carefully review the nature of its relations with the Federation level versus its direct ties with local *groupements*. It should negotiate program initiatives with those organizations most directly concerned, and deal with the federation only around issues that concern the federation as a whole, or that concern a number of *groupements*.
- ASSET should invest in sustainable strategies rather than grantsmanship, promote local self-financing and risk-taking, value the process on a par with the objective, use local willingness to invest as a litmus test for external financing.
- ASSET should apply principles of subsidiarity – funding direct users and risk-takers at the most local level possible, promote the participation of all members rather than just the leaders, and generally promote longer-term economic impact as a priority rather than short-term benefits.

4 CONCLUSIONS FROM ASSESSMENT

The Team's basic conclusion is that the ASSET Project approach is sound and that the Project is having significant environmental and economic impacts in the project area.

4.1 Watershed Environmental Impacts

The ASSET Project activities in the *île central* region of Belle Fontaine are having positive environmental impacts at a local scale: soil erosion is being reduced, new tree crops are being successfully grown on many farms, and the *groupements* are starting to address community-level environmental concerns, such as the serious issue of uncontrolled grazing, through community organization. These are effective responses to real environmental needs in the region.

It is important to understand that the ASSET Project is not having a major effect on flooding, sediment deposition, and water supplies in the lower RGB watershed simply because the financial and physical dimension of ASSET is not sufficient to address issues on such a large scale. The Team believes that ASSET-type interventions, if multiplied many times, are appropriate for rehabilitation of the entire watershed. But, the Team also believes that an effective rehabilitation program for the 700-square kilometer upper RGB watershed would cost hundreds of millions of dollars, and it would take several decades to show major downstream results. It is not appropriate to measure ASSET's locally-based natural resource management program against such a proposal.

4.2 Economic and Development Impacts

The Team feels that the strong local response to ASSET's initiatives to date is a reflection of the local belief that improved water systems, improved conservation agriculture, and improved local organizations can help people in Belle Fontaine increase their income and quality of life.

The Project is initiating a local economic shift from dependence on erosion-causing grain crops like black beans and maize, to a stronger emphasis on perennial fruit and coffee, and on intensive vegetable crops. Due to its high altitude, Belle Fontaine has an agro-ecological advantage over many other areas of Haiti for the production of temperate vegetable crops (cabbage, potatoes, carrots, beets, etc.). And, relative to all other high-elevation areas in Haiti, except Kenscoff, it is close to the Port-au-Prince and Croix des Bouquets markets. Therefore, it is reasonable to assume that vegetable and fruit cropping with soil conservation will be a successful method for improving income while reducing environmental degradation in Belle Fontaine. This point is illustrated by the following case study.

Success Story: Mr. Felice Bienéus is an older farmer with years of vegetable crop production experience in Belle Fontaine. He has been building rock terraces on the fringes of his *lakou* since the 1960s—he adopted the practice spontaneously after seeing it above Petionville. He is now growing large quantities of cabbage (at least four different serial planting dates), onions, sweet potatoes, and pumpkin on deep north-facing soils built up behind 2-4 ft. rockwall terraces. He uses a cistern built with ASSET to water his cabbage seedling bed and smaller outplantings. He has built a large compost bed with ASSET assistance for his vegetable crops, where he is composting weeds, bean husks and small quantities of manure. He markets his produce successfully in Croix des Bouquets, the traditional market destination for much of the Belle Fontaine area. Despite being an experienced, successful small farmer, he continues to improve his farm operations with ASSET assistance.

Mr. Bienéus' experience illustrates a successful local model for the ASSET package of environmentally sound production: long-term investment in strategically sited soil conservation, improved water supplies, soil fertility improvements, and knowledge of high-valued vegetable and fruit tree cropping techniques. His success validates the ASSET approach.

4.3 Justification for a Project Extension

The Team believes that the ASSET activities in Belle Fontaine are having significant environmental and economic impacts in the project area and should be continued until mid- to late 2003 to consolidate the progress made to date and provide appropriate lessons learned from this Project's innovative approach to conservation agriculture and environmental rehabilitation.

1. The ASSET Project approach in Belle Fontaine is an innovative one in Haiti, and initial results are promising. The Team feels that additional time is needed to fully develop the program elements already underway. The additional growing seasons provided by this extension are critical to these consolidation efforts.
 - Specifically, the Team feels that early results in water collection infrastructure, *lakou* agro-forestry and vegetable cropping, soil conservation such as ravine treatments, and development of community groups for natural resource management are very positive.

- The land use planning model now being initiated has generated some very interesting early results and should be carried through to its implementation phase. Also, an extension would provide the time necessary to replicate some of the community-scale demonstration activities.
2. Local environmental degradation in Belle Fontaine will continue to be reduced by Project interventions. For example, additional soil will be conserved, tree crops will continue to be successfully injected into cropping systems, and both grazing and forest harvest may be better managed as a result of continued community work. Local economic benefits at a farm-level are already being felt and productivity is expected to increase significantly in the medium-term as soils deepen behind conservation structures and perennial crops mature.
 3. The ASSET project requires additional time and effort to further develop local market connections for this increased agricultural production. Technical assistance on marketing vegetable, fruit or spice crops from Belle Fontaine would be useful.
 4. To amortize the investment made to date by USAID, the ASSET project needs time to consolidate operation and maintenance of water collection systems and to strengthen agricultural production systems.
 5. The Haitian agricultural extension staff working for ASSET in Belle Fontaine is well-trained and capable, with good leadership and a strong team feeling. That staff has invested substantial time in developing positive working relationships with the communities. Dismantling this staff before they have an opportunity to consolidate the innovative agricultural conservation programs now underway would squander USAID's investment.
 6. The activities being developed can have programmatic applications outside the Belle Fontaine watershed. Additional time is needed to allow USAID and others able to judge the utility and replicability of this approach for other natural resource and conservation agriculture activities in Haiti, including community-based land use planning, local organization for labor mobilization, and rainwater collection infrastructure.

5 RECOMMENDED PROJECT TRANSITION STRATEGY

The Team makes the following recommendations regarding project implementation beyond June 2000.

1. The Team believes that the additional year of project work can and should be accomplished with a dramatically reduced project staff and budget. The current administrative staff and infrastructure reflect the Project's former multiplicity of activities; they are over-dimensioned as support structures for the Belle Fontaine effort.
2. The Team believes that much of the work which remains to be done after June 2002, can and should be done by the capable Haitian staff of the project. Gradual phase-out of international advisors is appropriate. The core extension staff with a small administrative and maintenance support staff can carry out the key activities for the extension period. A single international

advisor present during the extension period for team leadership, contract management, and technical backstopping would be ideal, but the costs will have to be carefully examined.

3. The Team estimates that the total budget for an additional one year of activity beyond June 2002, would be in the range of \$600,000 to \$800,000, depending on how many months of international advisor time is included. This estimate is based on the Team's firm belief that remaining project activities require the presence of the complete agricultural extension team and the addition of one or more animators, but that civil engineering, administrative, maintenance, drivers and other staff can be reduced significantly without affecting the Belle Fontaine activities. Such a reduction in budget also assumes a reduction in the number of project vehicles and a smaller, substantially cheaper office in Petionville or Port-au-Prince.
4. The Team asserts that the key project activities from July 2002 through June 2003, should focus on the following:
 - strengthening local organizations,
 - consolidating operation and maintenance for existing water system investments,
 - increasing construction of *lakou* cisterns,
 - further developing the agricultural production aspects of conservation farming in the enhanced production areas of *lakou's*, adjacent vegetable gardens, treated ravines, and other soil conservation systems, including marketing support, and
 - continuing community environmental education activities through the land use management planning process and in schools.
5. During this additional year of work the chief-of-party should be responsible for seeking financial and technical assistance support for longer-term activities in Belle Fontaine to continue after ASSET is entirely closed down. That support may come from Haitian or international NGOs or other international donors. The purpose will be to provide links between Belle Fontaine community-level organizations and outside funding sources to carry out environmental management activities identified in the land use management plans and to strengthen the marketing of improved production.
6. Winrock should provide for expert assistance on project evaluation, including detailed agricultural economic assessments of project interventions. This evaluation should be designed in Spring 2002, and finalized late in 2003, following a period of data collection.
7. The Team strongly recommends against trying to merge ASSET with HAP or any other project as this would simply distract time and resources away from the field effort and detract from the effectiveness of the existing extension team in the time remaining.