

PART ONE

EXECUTIVE SUMMARY AND INTRODUCTION

CHAPTER ONE

CONCLUSIONS AND RECOMMENDATIONS

1.1 Conclusions

1.11 Major General Conclusions

1. There have been dozens of attempts--some of them local, some of them large scale-- to implement soil conservation measures in Haiti during the past twenty five years. Though some attempts have combined reforestation and the building of erosion control structures (principally terraces, rock walls, and contour canals), most have focused on only one of these two general strategies.

2. Only a small number of these projects can be said to have succeeded. By success here is meant the adoption by farmers, as part of their own agrarian practices, of measures designed to combat erosion. There are regions where virtually all farmers, even after project inputs have ceased, continue to use new techniques which successfully combat erosion.

3. The principal determinant of success or failure is the degree to which the new practices are associated with visible increases in annual domestic income for the participating farmers. When such increases have become visible, the Haitian peasant has shown himself to be extraordinarily swift to alter his traditional techniques and to adopt new behaviors.

4. Where there are substantial increases in income, the projects have been found to succeed even where there are weaknesses stemming from the implementing agencies, the organizational models employed, the choice of specific techniques, and the presence of complicating sociocultural factors. Where profits are to be had, communities have found ways around the weaknesses that would otherwise sabotage projects. Conversely, where farmers have not perceived any short term gains for themselves, even well organized projects run by strong institutions using appropriate technologies will tend to fail.

5. The most impressive successes have been in the domain of terrace and rock wall building in the Kenscoff/Furcy area. But this economically effective use of terracing has occurred in communities whose altitude and whose proximity to Port-au-Prince make them the principal vegetable producers for the urban market. In general it will be difficult for projects to duplicate these specific conditions in most other regions of Haiti. That is, the money-generating potential of dry walls and terraces would appear to be at best modest for most regions.

6. Most wall building and terrace projects in other regions have attempted - with little success - to proceed on the basis of traditional crops such as corn and beans. This will not work, largely because the minor yield increases are not perceived as sufficient justification by the peasant for making the investments of time and energy required by the structures.

7. Rock wall and terracing projects are more likely to succeed if their introduction is combined with the introduction of fertilizer and/or compost. The increased yields stemming from the use of these inputs are capable, in certain circumstances, of raising benefits to the threshold where new erosion control behaviors can be introduced and sustained.

8. In general development agencies have overemphasized the theme of "protecting soil from erosion." Much more success has been achieved through the theme of "making more money from your land." The Haitian peasant is unlikely to alter his cropping behavior, to undertake time-consuming and costly innovations, in order to "protect his soil." He will, however, respond rapidly and enthusiastically to innovations which help him to increase his income, even when these innovations demand time, risk taking, and expenditure of money. In short, widespread soil conservation will occur in Haiti only as a secondary effect of innovations whose primary function from the point of view of the farmer is the generation of a higher immediate income. An intelligently planned project will embed soil conservation measures into broader economic schemes which simultaneously exert a positive impact on peasant income.

9. From the point of view of generating more income, the most promising erosion-control strategy for most of Haiti has been found in the planting of fast-growing trees. That is, as a general policy for soil conservation among Haitian peasants, project emphasis should be directed toward the reforestation, rather than the wall-building, strategy.

10. Unlike wall building, tree planting can be made worthwhile to the peasant even in the context of traditional cropping, because trees provide an independent source of income in a way that walls and terraces do not.

11. Several tree-planting projects have made the mistake of focusing on valuable but slow-growing hardwoods, especially mahogany. Trees with a quicker rotation are needed to kick-off tree planting behavior among peasants.

12. Out of discouragement with results, some foresters have been heard to advocate resettlement of peasants and the growing of true forests. But the institutional requirements for such a scheme are currently lacking in Haiti. Projects should shy away from resettlement schemes and move toward cash generating tree planting schemes to be implemented by the farmers themselves.

13. Discouraged with results, other technicians have advocated, not resettlement, but the planting of trees on agriculturally marginal, currently unoccupied lands. Such schemes would not only fail because of the maintenance and vigilance problem, but would also leave untouched the problem of erosion on farmland and the problem of searching for ways to generate more income for the small cultivators. Policy should focus at least in the beginning on devising schemes to motivate and assist the peasants to plant trees on their own land.

14. Others have begun to attempt the encouragement of tree growing by businessmen rather than by peasants. The current market for tree products endows these plans with some hope of success, but leaves untouched the above-mentioned problems. Development agencies whose mandate is to affect positively the economic life of the rural masses should probably first attempt to assist the peasant - not the peasant's future competitors - to gain a foothold in the tree-planting economy.

15. The major feasible route to this objective would appear to lie in the concept of cash-generating agroforestation, a type of reforestation in which trees are chosen and planted in such a way that they mesh with, rather than interfere with, the pre-existing agrarian economy.

16. Many soil conservation projects have involved tree planting. But thus far none has carefully planned tree-growing in a way that would make it a central part of the peasant cash economy. Rather, trees are for the most part presented as a resource with certain marginal benefits (shade, nutrition, perhaps a little cash in the distant future). No project planner has as yet worked out a detailed micro-economic model of an "agroforested plot" capable of producing cash for the Haitian peasant, even though the availability of "miracle trees" such as *Leucaena* and *gkasva* would make such a model now feasible.

17. Some planting of *Leucaena* and other fast-growing trees has been attempted by several projects. But the focus has up till now been on the technical problems such as selecting the best varieties rather than on the economic problem of timing and spacing the trees in such a way that they will mesh with traditional cultivation and produce cash for the peasant.

18. Peasants in different regions have themselves begun to demonstrate the feasibility of continuing traditional cultivation on plots that have recently been planted in trees. The strategy has been to lop off lower branches during the first few years.

19. In assessing the success and failure of projects, it should be remembered that these are not categories into which an entire project can be globally lumped. Many projects which are not totally successful--i.e. in which the farmers do not spontaneously adopt as their own the behaviors brought in by project organizers--nonetheless have partial successes. Farmers may make some efforts to protect the trees that have been planted, express the desire to have more trees, demonstrate an awareness of the utility of trees and erosion control structure. Such changes in orientation constitute partial successes even though the project may not have produced self-sustaining erosion control behavior.

1.12 Organizational, Motivational, and Educational Considerations.

20. Most projects have already found pre-existing community groups, but the larger projects have tended to override these groups to form other action units.

21. The most common type of unit to appear is the ekip, the work-gang. These are ephemeral groups, frequently containing outsiders, organized solely for the purpose of wage labor, dissolved after the task is done.

22. The ekip is convenient from the point of view of the disbursement of food or money. But it is not an adequate organizational base for sustained development. In the case of soil conservation projects, which will entail a long maintenance phase after the hillsides have been treated, the ekip lacks both the continuity and shared interest in common land which must serve as the base for the organization of soil conservation.

23. The traditional Community Council is also inappropriate in many aspects. Many were founded principally as collector-distributor groups to attract and disburse outside relief resources. In addition they tend to be too large and dominated by wealthy leaders whose occupational status frequently places them in a separate socio-economic category from the peasant.

24. There is no one organizational model which has been proven superior, but soil conservation appears to call for groups which are based on common residential or landowning interest, small in size, endowed with some operational decision making power, able to carry out multiple functions, and stable through time.

25. The vast majority of projects have used some sort of systematic reimbursement for project participation. Reimbursement of administrators and technicians is, of course, in cash. Reimbursement of community members, including in some cases foremen, is generally in Food for Work.

26. The issue of whether to reimburse or not is still hotly debated. The conclusion of this study, supported by arguments in the body of the report, is that systematic remuneration may be necessary, need not be counterproductive if done correctly, and need not take the form of simple wages. Certain projects have devised alternative formulas for payment.

27. Cash would be a better form of remuneration than food, especially in view of the fact that the vast majority of the food is converted by its recipients into cash anyway. But if resource constraints impose a choice between food or no payment at all, then the food can continue to be used.

28. Neither payment nor the use of a particular group structure are sufficient by themselves to insure project success. The prime determinant of success is the presence of profit-generating project objectives. Payment should be conceptualized as an interim measure designed to usher risk-taking communities through the first one or two rotations of fast growing trees. The case of the Furcy vegetable growers (to be discussed in the body) illustrates that once a practice has been proven profitable, the Haitian peasant needs no outside assistance to continue the practice.

29. Some projects have attempted to rush too quickly into tree planting and wall building, without informing the community of the project's purpose. The result has been, in several regions, openly expressed concern on the part of many peasants that the government or the foreigners were going to plant their own trees on the peasants' land. There had been widespread fears expressed, in at least three projects visited, that the entire reforestation scheme may have been a simple prelude to eventual expropriation.

30. One of the most effective initial educational strategies is to bring peasants from one region to view positive results of soil conservation in other regions. This not only facilitates the diffusion of technical skills, but also defuses possible worries about eventual loss of land.

31. It is possible to observe the degeneration of many projects through time. Lacking viable long-term objectives, the projects turn into simple wage-labor busywork, abandoning in some cases the planting of trees to do less threatening tasks such as road repair or river damming, tasks which bear little relation to soil conservation. It is in this type of simple wage-labor project that one tends to see crumbling walls and the vestiges of destroyed reforestation efforts.

1.13 Technical and Operational Considerations.

34. The most effective form of physical erosion-control structure is the bench terrace. Several have been built by different projects in different parts of Haiti. But they have not, and probably will not, catch on.

35. The bench terrace should ideally be built on the best agricultural land. But most bench terraces have been built on a demonstration basis by projects which have depended on peasants lending or renting land to build the terrace. But peasants have generally given projects the worst parts of their holdings for these "strange" experiments, with the result that most land in bench terraces is land that is good only for the grazing of livestock. One peasant even built his house on a bench terrace which a project had constructed. It is not seen as a particularly valuable agricultural strategy.

36. Questioning of peasants indicated that, whereas the sale value of land skyrockets after trees have been planted, the presence of terraces and walls does not substantially raise the value of the land in their eyes.

37. As indicated earlier, terraces take on value only when built as a central element in a complex of innovations which involves, in addition to the earthworks, profit-generating changes in the local agrarian economy.

38. Manuals on erosion control provide formulas for spacing walls and trees based on topographic or botanical considerations. But in rural Haiti the spacing of trees and structures must be done first and foremost in the light of having the innovations mesh with the local agrarian economy, leaving peasants space for their traditional pursuits.

39. The principal cause of the destruction of trees and walls stems from their interference with the local livestock economy. When trees are planted on good agricultural land and are intercropped with gardens, their survival rate is very high. When they are planted--as is more often the case--on agriculturally marginal grazing land, the livestock destroy them.

40. The most effective solution to this dilemma has been the planting of several rows of trees together to present a visually impressive unit which the peasant will be reluctant to destroy, but to space these small lots at a great enough distance as to permit tying of animals.

41. In the case of rock walls, survival is made more probable if the walls are so high as to discourage animals from attempting to ascend or descend them. Small rock barriers are generally destroyed, whereas higher walls last longer.

42. The timing of nurseries has frequently been poor. The seedlings have frequently reached a dangerously advanced state before the communities have been organized to accept and plant them. This has led to pressure from project directors on field technicians, and the result has on occasion been simple invasion of land by projects in a hurry to transplant maturing seedlings. The more common result, however, has been the simple destruction of tens of thousands of seedlings for which there have simply been no local takers.

1.14 Land Tenure Considerations

43. The above mentioned general fear of expropriation at the beginning of reforestation projects stems from a general insecurity of the Haitian peasant vis-a-vis the long range intentions of public or outside institu-

tions, not from the "deedless" land tenure situation of many plots.

Peasants were every bit as concerned about their deeded plots as their undeeded plots. These general fears eventually subsided as projects remained in regions and peasants began thinning the newly planted woodlots, perceiving thus that they were the true owners of the trees.

44. The land shortage which afflicts many household is principally with respect to good cropping ground. Probably most households, however, have tracts of agriculturally marginal land that could be planted in trees. That is, there is enough land in rural Haiti under the control of peasant kin groups to render agroforestation feasible from a land tenure point of view.

45. Land tenure issues are not the major stumbling block to soil conservation. Despite general wariness, peasants are secure enough in the operation of the present land tenure system to make substantial investments in land. The most dramatic manifestation of this is the local land market. Peasants regularly disburse hundreds of dollars to acquire new plots of land. Project organizers may safely assume that, if profit-generating objectives are convincingly presented by the project, peasants will make the necessary long-term investments on plots which they own and operate themselves.

46. Paradoxically, absentee landlordism is in some cases associated with better environmental protection. Many absentee owners of mountain lands, especially those in the Kenscoff/Furcy area, prefer to keep their land in trees and to plant woodlots where trees have been cut down, than to turn their land over to peasant cultivators.

47. There are three major instances of land tenure arrangements in which peasants are not "owner operators" and which thus present some complicating factors for soil conservation projects: State land, tenants of private owners, and undivided inheritance land.

48. Peasants cropping state land as tenants will in some regions be reluctant to plant trees, being unsure that the profits from the trees will accrue to them, or fearing that the presence of trees may increase the rent. But even this generalization must be qualified. The coffee growers of Baptista/Belladere--all of whose holdings are on State land-- appeared perfectly confident that they would continue to have access to the land and were in many cases undertaking expensive expansions of their coffee holdings.

49. In the case of the tenants of private land, or managers of private land who have cropping rights to the land, there is an additional disincentive to planting trees. In many cases tenants or managers will be given first rights to purchase if the owner has to sell land. But the purchase price will be substantially higher if there are trees on the land. There is thus a built-in reluctance against increasing the value of land.

50. Much agriculturally marginal land, good only for grazing, will be left undivided by kin groups. Rather than divide the land up into separate blocks, they will maintain it as an unit and simply share common grazing rights. When trees are planted on such land, under current project operations the ownership of each tree is also shared. But this creates a disincentive against allowing the tree to mature, as an indivi-

dual may attempt to make at least some money from the tree before his siblings or cousins do. In this case projects must specify the ownership of the trees clearly.

51. In general trees that have been planted on land that is owned and operated by a single owner--especially land that has been purchased by that owner--have a substantially higher survival rate than trees on land with diffuse ownership.

1.15 Institutional Considerations

52. Five distinct types of institutions have been found participating in soil conservation projects: Haitian Government agencies, international funding agencies, international and local relief agencies, local missionary groups, and U.S. based contract institutions, both academic and commercial.

53. Most projects of a large scale have involved the cooperation of more than one institution. In certain cases there has been ambiguity in defining spheres of responsibility and lines of authority.

54. In some instances the interrelationship among cooperating institutions produces top-heavy, cumbersome structures, as for example when an international funding agency contracts with a private firm which subcontracts with free-lancing technicians who work with Darien technicians who give instructions to community based foremen who finally direct the community groups which actually implement the soil conservation projects.

55. The impracticality of such arrangements is perceived by many individuals within the funding agencies, but they find themselves institutionally constrained from fielding more creative and more direct interventions.

56. At present there is no effective, soil conservation unit functioning within the Ministry of Agriculture.

57. Nonetheless Damien field technicians have been found to be playing active and important roles in several past and present soil conservation projects. They have plugged into projects supported, not by the Ministry per se, but by one or another international or private agency, and have shown themselves capable of mobilizing community action in areas where foreign technicians, unfamiliar with the language and culture, have not functioned as effectively.

58. The availability of these privately funded soil conservation projects has provided an excellent training ground for the Damien technicians involved. That is, there is no incompatibility between the objective of strengthening governmental institutions and the supporting of PVO projects. In Haiti the latter have been found in several cases to provide a training ground for government technicians.

59. The peasants perceive that the overall quality of Damien technicians has declined. The Agronomes of the late 1940's and early 1950's are remembered as giants of folk-heroes whose interventions--terrace building, the introduction of the plow, irrigation systems--helped transform entire regions. Current technicians, even active ones, are perceived by the peasants as knowing less and in general as caring less than their predecessors.

60. USAID has been involved, at least indirectly, in dozens of local soil conservation efforts by virtue of the support it gives to agencies such as HACHO, CARE, CWS, CRS, and others.

61. USAID has not in general exercised its de-facto power to encourage better soil conservation planning by recipient agencies perhaps because

USAID itself has not as yet developed a coherent policy on the matter. It is hoped that the concept of cash-generating agroforestation can provide one of the conceptual cornerstones needed to formulate a coherent approach.

62. The private relief agencies have had their attention diverted from creative developmental planning as they have found themselves dedicating large amounts of time and energy to administer and supervise the distribution of food from abroad.

63. A regular complaint heard from relief agencies and other PVO's concerned what they perceived to be USAID's burdensome paperwork requirements.

64. Most small, local PVO's contacted during research have contact with functioning community groups and seem willing to involve themselves more actively in reforestation. But they lack both resources and ideas. Their reforestation ideas tend to be limited to the concept of helping peasants plant a few fruit trees. If a more systematic and dynamic general model can be devised, USAID could supply these groups with both concepts and resources to begin implementing creative agroforestation projects in ways that could simultaneously involve the participation of Eardon technicians.

65. The currently prevailing system of contracting with private U.S. firms, though it could theoretically involve the best of U.S. private enterprise in soil conservation activities, runs an equally great risk of turning into a simple employment agency for U.S. technicians and consultants who find themselves either unemployed or retired. Because of the critical importance of agroforestation and soil conservation to Haitian development, program planners should be as cautious and demanding in their choice of technicians and advisors as are employers in the private sector.

1.2 Recommendations

The preceding summary and the body of the report contain a large number of specific recommendations. This summary of recommendations will restrict itself to the major points, distinguishing among general recommendations, operational recommendations, and project design recommendations.

1.21 General Recommendations

1. The problems of erosion control and reforestation should be given highest priority in the agenda of the Agricultural Development Office of the USAID mission in Haiti.

2. General program planning should make provisions for both tree planting and other erosion control structures, but a special emphasis should be placed on the former as being more likely to result in cash payoffs for participating peasant communities than is true of wall or terrace building.

3. In approaching reforestation, projects should for the present shy away from schemes which would entail planting trees on unused public land and to turn rather toward programs which motivate peasants to begin incorporating tree planting as part of their own economic strategy on their own land. Most projects up till now have in fact followed this approach.

4. The cornerstone of erosion control in Haiti should be the concept of agroforestation, and USAID should make this concept the central axis of its program and research plans. Models should be devised in which the use of fast growing tree species makes it possible even for the small cultivator to incorporate trees into his traditional economy. The agroforestation model devised should contain separate provisions for two fundamentally different arrangements: the planting of trees on good cropping land and the planting of trees on privately owned but agriculturally marginal land used principally for livestock grazing. USAID should support the design of models which calculate inputs and returns, in precise dollars and cents figures, for each of these situations. Such a model would be substantially more systematic than anything which any project has thus far attempted.

5. USAID should encourage its client agencies, both GOH and private, to improve their existing soil conservation programs and to undertake new programs based on carefully thought-out agroforestation models. They should be sensitized to the superiority of the theme of increased profits over the less cogent theme of protecting soil.

6. Client agencies should in addition be strongly encouraged to move beyond a perspective which takes into account only the technical problems of erosion control into a more realistic perspective which views the organizational, motivational, and educational tasks as equally if not more problematic. In concrete terms this means that project proposals, to be acceptable, must demonstrate specific insights into the economy and social organization of the peasant communities in the intended project region and must be quite specific about the manner in which maintenance of the trees will be assured.

7. By the same token USAID should encourage Damien to include, as part of its training to its soil conservationists, training in the economic and social organization of the mountain peasant community.

1.22 Operational Recommendations

8. The educational/motivational phase of projects should not be skimmed over. Projects should anticipate suspicion and fear of eventual expropriation on the part of peasants in the early stages, and the educational messages at the early stages of projects should deal with these matters.

9. Where possible, peasants should be brought to other regions of Haiti where projects have been in operation.

10. Projects should give heavy emphasis to wall building or terrace building only where these innovations are being introduced in the context of new crops or fertilizer which make increased profits possible. Otherwise these engineering structures are unlikely to catch on.

11. Even in the absence of profit-generating inputs, projects should still emphasize the building of check-dams in ravines, as these have been found to produce dramatic changes in the agricultural potential of the ravines, changes which consistently impress cultivators.

12. Detailed inventories should be prepared of the advantages of trees--soil improvement, nitrogen fixation, fodder, shade, and others--but the central message should be that the trees can be converted into a cash crop on the one hand and triple and quadruple the sale value of the land on the other.

13. The tree planting should be viewed as the function of a group, not an individual. But the landowner should always be involved, should never be a passive observer of a work gang invading his land. And the landowner should in addition have some organizational responsibility for the planting, in such a manner that he will be an actor, not a recipient observer, in the tree planting.

14. Though they are planted by a group, the trees should be assigned as the property of the individual landowner. Projects should avoid referring to the trees as the trees of the State or the trees of the foreigners.

15. The groups that are formed should not be simple work-gangs but should have the permanence and other characteristics discussed in the body of the report.

16. Peasants should be consulted as to the species of trees that will be planted. Projects should be aware, however, that the major profits will be made from wood trees, but that the planting of such trees is alien to the traditions of rural Haiti and peasants will not spontaneously request them. Projects should be determined, therefore, to educate communities as to the value of this new practice, and to make wood trees the central element in the arsenal of the agroforestation scheme. In this sense the projects must go beyond the "community development" objective of simply meeting the "felt needs" of the community.

17. Nurseries should not be planted before the communities have become to some degree committed to the project. Prematurely planted nurseries have led to either the destruction of large numbers of trees or--worse--the invasion of peasant land by impatient project directors.

18. Trees and walls should be spaced in such a fashion that ample room is left for animal grazing, if this was the prime use of the land before tree planting. In the case of newly planted garden land, such spaces need not be left, as the trees (if they are fast growing) will be large enough and out of danger by the time animals are admitted.

19. Strategies of remuneration should be employed during the organizational and planting stages of the project. If possible, money should be used, rather than food; and where possible "contract" systems--based on the number of surviving trees--should be used rather than flat day labor formulas. The remuneration should be presented, not as wages for a daily djob, but as a bonus for a group that is carrying out an important development task.

20. The practice of planting trees and abandoning them to hazard should be immediately stopped. Projects must start incorporating a maintenance phase into the project plan. If at all programmatically possible, cash inputs should be funneled into participating groups, to be withheld if the trees and other structures are not being taken care of during the maintenance phase. The maintenance incentives must be large enough to outweigh any advantages the peasant could receive by neglecting--or permitting the destruction--of young trees.

21. Projects should begin keeping records of whose land the trees were planted on, and project directors should cease leaving land tenure questions in the hands of subordinates, and at least begin to familiarize themselves with the question of whose land the trees are being planted on.

1.23 Project Design Recommendations

22. USAID should set itself a very specific planning goal: that of having helped to usher at least a dozen peasant communities in different parts of the country through one rotation of such agroforestation by the year 1985. This would entail immediate planning now, as the trees would have to be planted by the October rains of 1981. The communities would have had to have been organized by then, and the nurseries prepared.

23. These pilot communities should then be used as the model communities to which peasants from a much larger number of communities will subsequently be brought in an effort to expand the program into a much larger project. But in the beginning, it is absolutely critical that USAID focus its attention on the successful introduction of agroforestation into a small number of carefully monitored communities. Overambitious planning will sabotage the program as surely as the initial PDAI project was sabotaged. If there is pressure to move great deals of money, then ways should be sought in which project focus is not sacrificed. Planners should view this as merely the first phase of a larger process, a phase whose objective is to initiate tree-planting activities in communities which will serve as models for other communities.

24. In choosing implementing agencies, for this project, it would be unwise to lay all eggs in one basket. Some of the communities could be handled by a buttressed Soil Conservation Unit at Damien. But funds should also be made available for the participation of one or more PVO's

With a solid track record in Haiti. The outcome of those projects is too important to subject it to possible failure because of extraneous factors associated with the weakness of a single implementing agency. Like the peasant cultivator, USAID should diversify for such an effort, spreading it away several agencies.

25. Many agroforestation activities could be carried out as part of the support currently being planned for Damien. But in addition, large sums of money could usefully be set aside in the form of a special fund or project, earmarked specifically for agroforestation which could be administered by either USAID or one of the registered relief agencies, and to which other local PVO's could submit funding proposals as well. These proposals would have to adhere in general to the guidelines of the recommended agroforestation model to receive funding under this project.

26. If current planning is realized, Damien will soon receive a team of soil conservation technicians under contract from the U.S. But in addition, USAID could put together another team to serve as agroforestation advisors to PVO's who would apply for financial and technical assistance. This team could be composed at least partially of individuals who have already been living in Haiti for many years and have been directly involved in erosion control and reforestation activities. They would in effect be a mobile team which would assess the feasibility of proposals, assist in their implementation, and act as monitors for the progress of local agroforestation projects.

27. Mission management should move speedily on this matter. If a positive decision is reached, several months delay could set the project back a year or--even worse--lead to the planting of trees out of synchrony with the autumn rains of 1981.