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EXECUTIVE SUMMARY

The Comoro Islands are characterized by a high and rapidly increasing population crowded onto a small land area. Population density reaches 920 persons/arable sq km on Anjouan. The foundations of Comoran culture derive from the domination of the Shirazi sultanates from the fifteenth through the nineteenth centuries. Major legacies are the Sunni Muslim religion and law, a feudal-style socio-political domination of peasants by a small group of elites, and a propensity for trade and commerce. An earlier legacy is the "grand mariage," a conspicuous consumption rite, in which families spend six to seven years' income on one ceremony. French colonialists continued the domination of peasants by urban elites. Their plantations marred the countryside and left peasants raising annual subsistence crops on steep slopes.

A major blow at independence was the decision of Mayotte Island to remain French. A 28-month experiment with socialism under Ali Soilih reduced some social inequalities, but ended with unwelcomed red-guard-style attacks on tradition. Under the current president, Ahmed Abdallah, the Comoros are still characterized by the domination of the peasants by a handful of urban elites. On Grande Comore, social status is well defined in terms of the "grand mariage." On Anjouan, it is equally clear, but based directly on land ownership. Weak administrative structures and pervasive Muslim values are major influences on patterns of social interaction.

The Comoran economy is weak and suffers from a number of very basic constraints. Agriculture, which is not well developed in the Comoros, contributes about 35 percent to total gross domestic product (GDP). Industry, much of which is based on agriculture, represents only 4 percent of GDP.

Virtually all foreign exchange is earned by three agricultural exports: cloves, vanilla, and ylang-ylang, an essential oil used in the manufacture of perfumes and cosmetics. Although the market for ylang-ylang is relatively constant, the clove and vanilla markets are characterized by wide annual fluctuations in both price and quantities purchased. In addition, vanilla sales suffer from variations in exchange rates.

The government always operates at a deficit. Revenues are based on import and export taxes, which are relatively easy to collect. Income and business taxes, being more difficult to collect, contribute much less than they should. Government expenditures are almost twice the level of revenues. A large part of expenditures goes to the payroll of a large, inefficient civil service.

The value of exports is small relative to the value of goods imported, resulting in a trade deficit. Because the Comoros is far from its suppliers and especially because of its lack of good port facilities, transportation and insurance costs for imports are very high, reaching as much as 40 percent of the FOB value of imports. This is reflected in a rather large negative value for net services. Net transfers, which are large and positive, are the sum of monies sent home by Comorans living overseas and foreign assistance.

The Comoros has received a number of large loans to finance development projects since independence. The government has been unable to make all its payments and has accumulated arrears.

The Government of the Comoros must do three things to stabilize and strengthen its economy. It must increase the number of exports, which in the near future will continue to be agricultural products, so that the variation in the value of any one product does not have a pronounced effect on total exports. Second, it must increase tax revenues by increasing the efficiency of the tax collection service while reducing, as much as possible, inefficient expenditures. Third, the government needs to continue to solicit development assistance especially in the form of grants rather than loans. These grants should require a minimum contribution from the Comoros.

The agricultural sector of the Comoros also has a number of weaknesses that the government is attempting to address with the technical assistance and financial support of many bilateral and multilateral donors. The Comoros has two fundamental constraints about which nothing can be done: it has a very small productive land base and a very high population. The Comoros is the fifth most densely populated country in Africa.

The CEFADER/CADER system (the Federal Center for Agriculture and Rural Development and the Centers for Agriculture and Rural Development) is a decentralized government system responsible for agricultural extension and related support activities. Since its creation in 1980, CEFADER has been responsible for many rural development activities other than agricultural extension. These include road construction and maintenance, providing agricultural inputs, and administering an agricultural credit program. Not only is CEFADER overworked, it is greatly understaffed. The system functions only because a large number of expatriate personnel have been assigned to work within it. These expatriates effectively triple the number of upper-level technicians and managers in the CEFADER/CADER system.

Agribusiness is limited to two activities: product transformation and export. The transformation done in the Comoros includes the distillation of essential oils from ylang-

ylang flowers, curing vanilla beans, roasting and grinding coffee, and extracting coconut oil. Provision of agricultural credit and other inputs, transportation, and other marketing services are rudimentary or nonexistent.

The Comoros is self-sufficient in all foodstuffs other than rice, meat, sugar, and flour. Even if food production were to double by the year 2000 through development efforts, the country will still need to import the equivalent of 80,000 tons of rice.

According to the United Nations Development Programme (UNDP) 1987 Development Assistance Review, there are 15 development assistance projects in the agricultural sector. The donor community should be congratulated for the high degree of collaboration achieved between organizations and projects. However, there is a lack of coordination in project design so that all donors are not working toward a mutually agreed-upon set of goals and priority activities. UNDP will finance the development of a national agricultural strategy into which foreign donors can eventually place their projects.

The World Food Program (WFP) will begin its third phase of activities in 1989. If the current number of rations is maintained, the amount of rice to be imported by the WFP is negligible compared to the amount of rice imported commercially. Because of this, and since rice prices are controlled by the government, WFP rice imports will not cause the price of rice to drop causing disincentives to local rice producers. However, the recent decision to change the WFP ration from maize to rice will have an effect on maize production. Annual WFP imports (1984-88) of maize meal equalled total annual maize production. The price of maize meal was depressed on the local market. Now that maize meal is no longer imported the price of maize should increase, making it a relatively more profitable crop.

The complex and uncertain patterns of land tenure in the Comoros represent a fundamental constraint on development. An FAO study shows great heterogeneity. On Grande Comore, land tenure follows the social structure defined in terms of the "grand mariage." On Anjouan, various locations exhibit traditional patron-client relationships, small-holder squatters in overpopulated regions, and areas torn by violence over land tenure issues. An FAO land reform consultant recommended forming communes to govern public lands, but Comoran officials objected that this would be difficult given the individualistic nature of the Anjouanais. The FAO socio-anthropologist emphasized the need for original approaches, and described the new anti-erosion peasant groupings as warranting further attention.

Comoran national policy on land tenure followed the initial recommendations of the FAO legal consultant by adopting a "voluntary" policy involving a cadastral survey without immediate

obligatory land registration. With severe financial constraints currently facing the government, however, plans for such a survey have been put aside. Even if funds were available, they would be used for more pressing development needs.

Organizational structure at the village level on Anjouan is weak. The chief is appointed by the government and often not well-respected by villagers. There are men's associations, to which almost all men belong, and various women's groups, as well as religious, sporting, and dancing groups. In all villages there is a group of recognized elders, and approaches to them have been successful in establishing effective development committees. Women's groups also are open to various extension activities. Farming decisions are made by the man, but should be considered by the husband and wife together. Women, however, are unlikely to speak openly in front of men. Women's groups offer an opportunity for discussing new techniques for food crops.

Coulibaly calls Anjouan villages collections of households and notes that the essential organizational level is the nuclear family. The family is also weak. There is no rite like the "grand mariage" to link extended families. The matrilocal system puts distance between the couple and the husband's family. And, ties with the wife's family may also be strained since the husband is head of the household. Even relations between husband and wife are weak in this polygamous culture, where a new wife can be taken and the old put aside with no legal formalities. Since most villagers cannot afford more than one wife, divorce rates range from 48 percent on Anjouan to over 100 percent on Grande Comore and Moheli.

The international market for each of the Comoros' three export crops is unique. The Comoros is the second or third largest producer of vanilla, the price of which is negotiated at what is considered a high price. Most fluctuations in earnings from vanilla are due to fluctuation in the value of the U.S. dollar and the inability of the Comoros to negotiate aggressively with importers. The government should emphasize improving the quality of vanilla exports rather than increasing production.

The Comoros produces a small part of world clove production. Earnings have fallen as tremendous increases in world supply have caused prices to drop. A number of countries, most notably Brazil and Indonesia, have increased production in recent years, forcing market prices down. These increases in supply limit the potential for expansion of production.

Ylang-ylang has a very stable market. The Comoros produces most of the world's supply while both demand and price are surprisingly constant. It is unlikely that the demand for ylang-ylang will increase.

CEFADER was created to perform the functions of a ministry of agriculture. Over the years, however, donors have designed projects with road construction and maintenance, health, and credit components. Not only is CEFADER responsible for many more activities than it should be, but it is understaffed. The planning and monitoring office of CEFADER has one expatriate director and a young Comoran assistant with less than two years of experience. Given the many responsibilities for preparing annual work plans and annual budgets, the office has little time to devote to planning and monitoring. Policy formulation is difficult for CEFADER because there is no national-level development plan into which agricultural plans can be integrated.

The National Agricultural School on Moheli is almost two years old. It was created to train agricultural extension agents who will work in the CADERs. Reports indicate that CADER people are satisfied with the training the students have been receiving. As more students are assigned to permanent positions it will become easier to evaluate the curriculum and the school. The major problem for the school is that the government is unable to provide the operating expenses necessary to keep the school functioning. CEFADER is actively searching for a donor willing to finance operating expenses. CECI and the World Bank are both willing to provide instructors if operating funds are found.

The last chapter brings together the report's most important conclusions and recommendations and, in addition, gives general recommendations for project design. Recommendations found in the body of the report which do not directly reflect on project design or project philosophy are not repeated here. The general recommendations are:

o Phase 2 should continue to focus on the agricultural sector.

o During Phase 2, there should be specific emphasis on introducing or promoting crops that could be exported in addition to the crops currently exported.

o CARE should encourage farmers to be flexible in their response to market signals. Farming systems should be developed that afford some degree of latitude in the crop mixtures that might be grown from year to year.

o The project should be designed in such a way that the failure of the government to make its contributions will not endanger the success of the project. The redesign should consider whether alternative implementation strategies might result in lower long-term recurrent costs.

o Phase 2 should help increase the capacity of CEFADER to plan for future actions and to evaluate the effectiveness of projects in attaining stated objectives. The project should not include a planning component but rather one to train CEFADER staff in planning. This should include on-the-job training and some formal training of staff who have already gained a certain amount of on-the-ground experience.

o Phase 2 should include a component providing for a series of studies of the effect of current policy, or the current lack of policy, on agricultural development. These studies must lead to a series of policy discussions with high-level government officials.

The consultants specifically recommend that, given REDSO plans for a five-year budget of $3.5 million, the project should be designed along the following lines: CARE should continue to implement the Anjouan Soil and Land Conservation Project along the same general lines as it has in the past year. Expansion should be contingent on demonstrated success. CARE should recruit a person experienced in managing training programs to coordinate all CADER training on Anjouan. The CARE project should become involved in the National Agricultural School on Moheli, taking responsibility to teach courses there. Finally, CARE should give a $20,000 sub-grant to ENA (Ecole Nationale d'Agriculture), to be administered by CECI, to fund certain operating costs of the school.

A separate activity would provide technical assistance for the training of CEFADER personnel in monitoring and evaluating techniques through on-the-job training. The advisor would spend approximately 50 percent of his/her time with these activities. The other 50 percent would be spent monitoring policy formulation and progress toward policy reform. The advisor would be responsible for coordinating and supporting a series of short-term consultancies and providing continuity in the policy dialogue with different ministries.

CHAPTER I

INTRODUCTION

In May 1984 REDSO/ESA gave a five-year grant to CARE to implement the Anjouan Land and Soil Conservation Project in the Comoros. The project has three basic objectives: to reduce erosion, to increase the productivity of small farms, and to promote sustainability of agriculture by introducing agroforestry techniques. REDSO evaluated the project in May 1988 and has decided it will renew the grant for another five-year period beginning in May 1989. Design activities will probably begin late in 1988. (A garage project based in the capital city is often considered a component of this project. This report does not consider the garage project, as it does not directly affect the agricultural extension program nor will it be part of a second REDSO grant to CARE.)

American bilateral assistance began in 1984 and the U.S. Agency for International Development (USAID) has never had a representative in the Comoros. REDSO recognized the need to have a greater understanding or overview of the Comoran economy and the agricultural sector before the project redesign began. As a result, REDSO/ESA asked Chemonics International to send a two-man team to the Comoros to conduct an agricultural sector review. In September 1988 Chemonics sent an agricultural economist and a sociologist to the Comoros, the former for 17 days and the latter for 10 days. This report is the product of that consultancy.

The consultancy was to broadly cover three general areas: national policy affecting agriculture, institutional capacity in the agricultural sector, and socio-economic issues affecting the project. In addition to basic background, the consultants were to examine six specific issues. Discussion of these six issues are given in the five sections in chapter III of this report. Finally, REDSO requested recommendations on a short list of items that would be incorporated into the project design. (The details of the assignment can be seen in the Scope of Work, presented as annex A of this report.)

The review was to be based on secondary sources of information. The approach was to interview knowledgeable people and to review relevant reports. Annex B presents a list of people contacted in the Comoros and in Washington. These people include government officials, representatives of foreign assistance agencies, representatives of Comoran businesses, and private citizens. Annex C is a partially annotated bibliography of documents consulted.

One aspect of the Comoros is especially important in this regard. There is very little information available. Much of it is based on impressions rather than systematic studies. It is not uncommon to ask the same question to two knowledgeable people and get opposite answers. High-level government officials even give conflicting statements of government policy. This indicates that all information should be interpreted with caution and verified using other sources when possible. Because of the scope of the work to be accomplished and the relatively short amount of time allowed, the analyses and presentations are not as complete as they might be. The consultants do not claim to have exhausted any of the subjects.

This report was submitted to the CARE country director in the Comoros before the consultants left the country. Before returning to the United States, the consultants went to Nairobi where they submitted the draft report to REDSO and presented their findings to REDSO and CARE regional personnel. This version of the report was prepared after receiving written comments from REDSO.

The report is divided into four chapters. Following this introduction is a chapter on the development context of the Comoros giving an overview of the country, the economy, and the agricultural sector. Chapter III contains analyses of the five policy issues that may affect the CARE project as well as a description of the National Agricultural School on Moheli. Finally, chapter IV presents conclusions and recommendations.

CHAPTER II

THE DEVELOPMENT CONTEXT

A. Socio-Cultural Background

This section examines the social and cultural context for Comoran development initiatives: the geographic, historical, cultural, political, religious, and social factors influencing development. The analysis identifies fixed constraints, modifiable hinderances, and potentially facilitating factors. It focuses progressively on the national level, through Anjouan society, to Anjouan villages.

1. Geography, History and Culture

Geographic and historical factors have influenced the development of a specifically Comoran culture. Together, these define the broad context within which social and economic development take place.

a. Geographical Factors

Comoran geography provides the ecological context for Comoran society. The archipelago forms a natural series of stepping-stones between Africa and Madagascar in the Indian Ocean, attracting waves of migrants and traders. Its strategic location continues to draw interest from larger, more powerful nations (See map, figure 1).

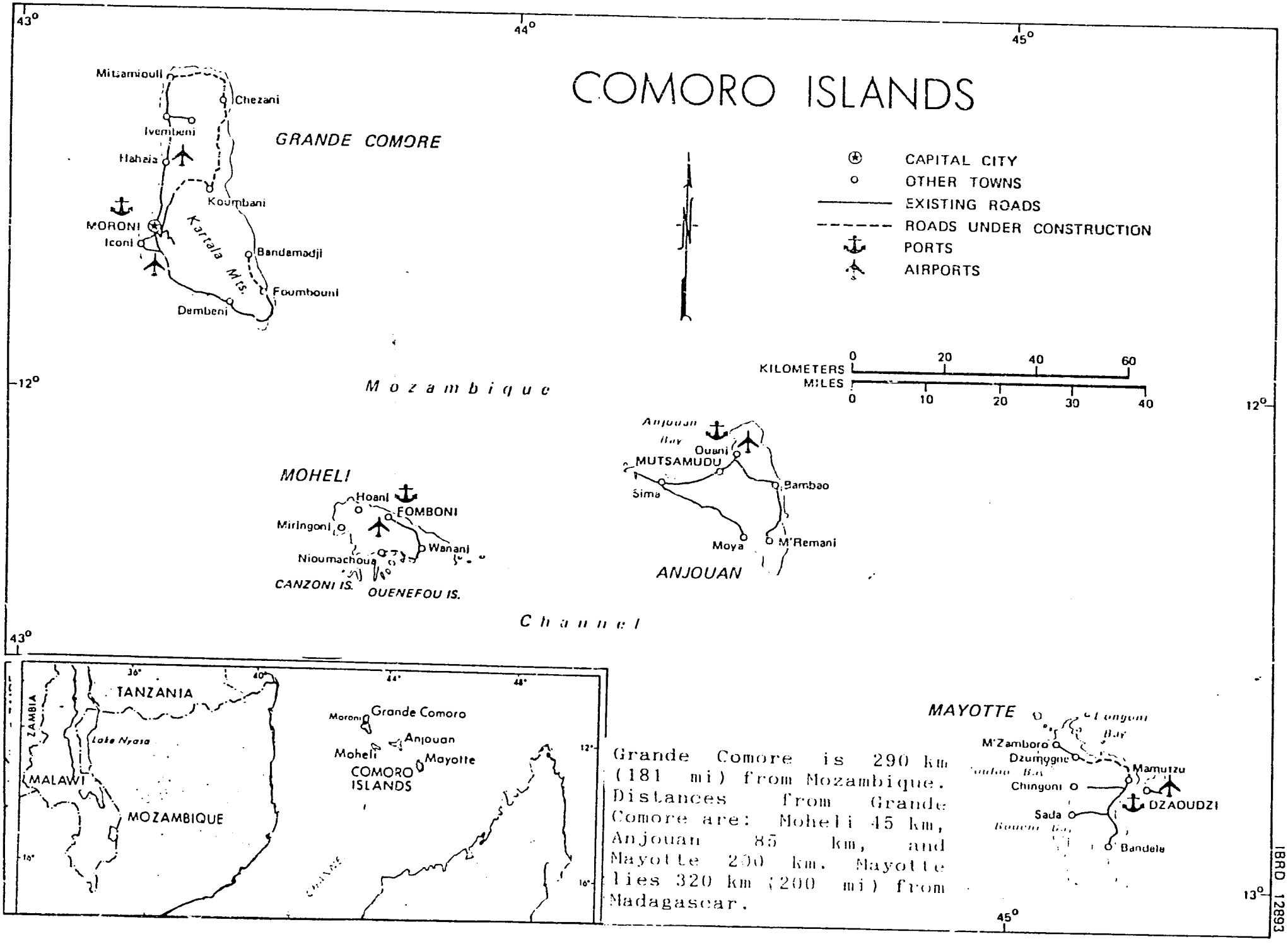
The characteristics of Comoran society are influenced by geographical factors common to many small tropical islands-- the ultimate limitation on land, mountainous terrain, volcanic soils, isolation from the mainland, fragmentation among islands, wet climate, indigenous coconut palms, availability of fish, and vulnerability to storms and volcanic eruptions (Battistini, 1984).

Most important for current Comoran development is its limited land resources which are now subject to increasing population pressure. Table 1 summarizes the geographic and demographic characteristics of the islands.

The table highlights the "crisis" level population pressure developing on Anjouan (Weightman, 1986). The islands total 203.3 square kilometers, of which Anjouan makes up 424, or 21 percent. On Anjouan, however, only half (47 percent) of this land can be cultivated. Population estimates for 1988 are extrapolated from the 1980 census using an annual growth rate of 2.7 percent (Battistini, 1984). It is currently estimated at 3.3-3.6 percent, one of the highest in the world. This yields a current estimate of 9.2 persons per arable hectare, with rapidly rising population

FIGURE 1

COMORO ISLANDS



Grande Comore is 290 km (181 mi) from Mozambique. Distances from Grande Comore are: Moheli 45 km, Anjouan 85 km, and Mayotte 290 km. Mayotte lies 320 km (200 mi) from Madagascar.

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Table 1. Geographic and demographic characteristics

ISLAND	AREA km sq	ARABLE AREA km sq	---POPULATION--- 1958 (000)	1980 (000)	1988* (000)	1988 POP./ sq km	POP./ ARABLE sq km
Grande Comore	1024	637	90.8	189.1	234	228.5	367.3
Moheli	211	129	7.2	19	23.5	111.4	182.1
Anjouan	424	199	61.8	148	183.2	432.1	920.6
Mayotte	374	240	23.4	52	64.4	172.2	268.3
TOTAL	2033	1205	183.2	408.1	505.1	248.5	419.1

* Estimated from 1980 census at 2.7% increase per year.

pressure. Traditional shifting cultivation with long fallows has been abandoned, steep slopes have been planted to annual crops, and massive soil erosion is causing rapidly declining soil fertility and crop yields.

b. Historical Influences

Little is known of the early origins of the Comoran people, but the ancestors of the Merina of Madagascar probably reached that island from Indonesia via East Africa, using the Comoro stepping stones as a migration route. They may have established human settlements there in the first millennium A.D. (Newitt, 1984: 15). These were followed by waves of Bantu from central Africa and Islamic traders extending their commercial empire southward from Kilwa in Tanzania and the island of Zanzibar.

Local legend attributes initial settlement to two families from Arabia after the death of King Solomon, citing a King Husain ibn 'Ali in the eleventh century (Bunge, 1983: 173). The present population reflects a blend of Malayo-Indonesian, Arab, and Bantu physical characteristics. The people are proud of their unique culture and do not see themselves as African. They identify themselves most readily by island (e.g. Anjouanais) or as Comoran.

The foundations of modern Comoran culture were laid in the fifteenth and sixteenth centuries with the arrival of the Shirazi Arabs from Persia, who brought the Sunni Muslim religion and law (the Shafi'ite school). They ruled in sultanates, built mosques, instilled Muslim marriage customs, emphasized commerce, and introduced slavery. They also introduced stone architecture, carpentry, cotton weaving, cultivation of various fruits, and the Persian calendar. Portuguese and Dutch accounts from the sixteenth century describe the sultanates as prosperous centers of trade with the African coast and Madagascar, but as constantly at war with each other (Bunge, 1983: 174).

Arrival of the Europeans in the area meant the establishment of plantations and greater demand for slaves. In 1785, the Sakalava of Madagascar began raiding the Comoros for slaves sold to work the French sugar plantations in Madagascar or Reunion. Thousands were captured and Mayotte was virtually depopulated. After the Sakalava were conquered by the Merina, groups of Sakalava and Betsimisaraka settled on Mayotte and Moheli. Comorans regained prosperity by joining in the slave trade. On the eve of the French occupation, Comoran society consisted of the Shirazi sultans, some freemen or commoners, and about 40 percent African slaves used by the elite as status symbols (Bunge, 1982).

The French established their first settlement on Madagascar in 1634, and gradually occupied Reunion, Rodrigues, Mauritius, and Seychelles. When most of these were ceded to Britain in 1814, a new port was needed. In 1841 the governor of Reunion, Admiral de Hell, negotiated with Andrian Souli, the Malagasy ruler of Mayotte, to cede it to France. Protectorate treaties were signed with the rulers of the other islands in 1886. It was not until 1912 that all four Comoran islands were made part of France's colony of Madagascar and a French administration was established, with its capital at Dzaoudzi on Mayotte. Under the French, the Shirazi elite continued as large landowners and civil servants. Slavery was abolished, but status differences remained.

Colonial rule established the major land-use patterns underlying current imbalances in the Comoran economy. Vast French plantations along the coastal strips occupied 40 percent of arable land and dominated the economy, focusing on export crops (vanilla, ylang-ylang, cloves, cocoa, and copra) so excessively that staples (mainly rice) had to be imported. Plantations often appropriated land that was more suitable for food crops, pushing these up the hillsides onto land more suitable for shrubs and trees. The clearing of woodlands and planting of annual cultures on steep slopes led to massive erosion and impoverishment of the soil (Gaspart, 1981).

The Comoran independence movement began abroad among youth in Tanzania who felt their country was being neglected by France and that the conservative elite was too closely linked to French hegemony. Working abroad remains an important formative experience for many Comoran youth as well as a significant ladder to economic and social advancement. Groups of youth overseas remain the centers of left-wing opposition.

A major effect of independence was the loss of Mayotte, which remained French. Mayotte remains a point of contention in otherwise close relations between the Comoros and France. It serves as an exit point for Comorans seeking employment abroad and provides a stark contrast between its rapid development and the Comores' increasingly difficult economic situation.

Independence has had important political and administrative consequences. At independence, few Comorans were educated and many administrative and technical positions were held by foreigners. The departure of French and Malagasy administrators overburdened the fledgling bureaucracy. Though progress is being made, this heritage remains a significant constraint to development. The government depends heavily on foreign aid and technicians.

One month after independence, Ahmed Abdallah was overthrown by Ali Soilih. The 20-month Soilih regime (January 1976-May

1978) was the Comoran experiment with socialism. Soilih's program called for three phases: independence from France, a social revolution to eliminate old customs such as wearing veils, the costly "grand mariage," traditional funeral ceremonies, and the decentralization of government administration. The French immediately cut off aid (40 percent of the government budget) leading to an economic crisis in which 3,500 civil servants were fired.

The period left both positive and negative impacts. The "grand marriage" ceremony, which has been estimated to cost six to seven years' income has, indeed, become less prominent, and wearing of veils has been abandoned. But, Soilih fostered Red Guard-style youth groups who attacked their conservative elders, Soilih's opponents and mosques. Additional strains arose from the eruption of Mount Kartala in 1977 and the influx of refugees from Madagascar. Soilih's support dropped so low that the band of 50 mercenaries who reinstated Ahmed Abdallah met no resistance from the army and were greeted as liberators by the civilian population. Soilih was killed (while trying to escape) on May 29, 1978.

2. Current Social Organization

Present-day Comoran society reflects the geographic and historical influences outlined above. A description of the major characteristics influencing development initiatives follows.

a. A Large Gap Between Elite and Peasants

Like the sultans and colonialists before them, the current elite dominate the economic, political, and social scene. A few important families control much of the country's wealth, power, and social status. They own the major importing and exporting firms, large plantations, and a few extant industrial companies. And, they hold the highest positions in the government and administration. There is no significant middle class; a huge gap exists between these elite, the small urban proletariat, and the mass of peasants.

This structure has both positive and negative aspects. On the one hand, elite status is based more on economic wealth than racial, tribal, or ascribed social characteristics. Thus, accumulating wealth is a recognized path to social advancement. On the other hand, it is difficult for new private enterprise initiatives to develop in competition with this powerful oligarchy. Appropriate development strategies must gain the support of the elite by showing them how they will benefit from increased economic activity within the country.

Among Comoran elite and on Grande Comore, social status is directly related to performance of the "grand mariage." The

"grand mariage" has been compared to the Potlatch as a social institution of conspicuous consumption in which each of the participating families may spend six or seven years' earnings. There are five social statuses or "hirimu" (Coulibaly, 1986):

- Mfaumamdji: Those who have performed the "grand mariage" and also married members of their own family and slaughtered additional cattle.

- Mnaikofia: Those who have performed the "grand mariage."

- Guzi: A derogatory term for those who were unable to perform a "grand mariage" at the same time as their peers and, thus, are left in a waiting state.

- Mfaumamnamdji: Those who have not yet performed the "grand mariage" but will soon.

- Nzuguwa-Mshondje: An inferior category of youths who fall within the traditional hierarchy.

These serve not only to define matrimonial status, but also age and wealth status. They serve to integrate the individual harmoniously into the society. They provide both social control and education, acting as apprenticeships for the young.

On Anjouan, however, the "grand mariage" is less important. Social status is defined more directly in terms of land ownership: urban versus rural, large landowners versus small landowners, peasant owners versus peasants not owning their land (Robineau, 1963). Coulibaly (1983) quantified status among Anjouan peasants as follows:

- agricultural laborers: peasants with no land and no other source of income except agriculture.

- peasants with no land but with non-agricultural sources of income.

- peasants with one field as family property.

- peasants with two fields as family property.

- peasants with three to five fields as family property.

- peasants with more than five fields as family property.

Grande Comore is characterized by relatively orderly village structures (the hirimu) with active customary law including special rights for women. This situation offers the potential for harmonious solution of social conflicts.

Anjouan, however, is characterized by heterogeneity, strong social inequalities, and the effective domination of certain groups. The situation is made worse by the difficulty, if not the impossibility, of social advancement for certain groups. This makes the social structure more rigid and thus subject to tensions (Coulibaly, 1986: 15).

b. Weak Governmental and Administrative Structures

Starting with a colonial inheritance of few trained personnel and underdeveloped institutional structures, the government has struggled to cope with the enormously increased demands of both administering their independent nation and promoting development. These efforts have suffered from inadequate policy formulation and uncertain implementation.

Unlike many developing countries, the Comores have no overall development plan. Only briefly from 1983-86 was an Interim Economic and Social Plan undertaken (Comores, Presidence..., 1983). In light of the desperate need for aid to counter the economic deficit, Comoran officials eagerly accepted aid for any project donors proposed. The resulting patchwork of projects sometimes yielded conflicting effects and did little to institutionalize a sustainable development capacity. The government is currently cooperating with the UNDP and World Bank to develop a long-range agricultural strategy, but assistance is also needed to compile an overall development plan.

Comoran bureaucratic institutions also demonstrate inadequacy in implementing specifically defined development programs. (See analysis of the CEFADER/CADER system in section II-C.) A series of constraints can be identified: insufficient training, ill-defined career incentives, lack of means (transport, fuel, implements, inputs), lax monitoring and evaluation, and poor motivation. FAO has proposed a consultancy for a manpower development consultancy to propose standardization of salaries and terms and conditions of service (Weightman, 1988:6). A major problem has been the recurrent arrears in the payment of salaries (now ranging from three-to-nine months). This constraint lies outside the Ministry of Production, in the Ministry of Finance and affects personnel government-wide. If financial planning assistance similar to USAID support in the Sahel and Kenya could help to alleviate this problem it would be a major contribution to Comoran development.

c. A Conservative Muslim Environment

Orthodox Sunni Muslim concepts, observances, and laws define the socio-cultural context within which Comoran development initiatives take place. Since the end of Ali Soilih's frontal attack on religion, the Sunni Muslim religion

has been accepted with all its facilitating and inhibiting influences on development.

Muslim customs most directly impinge on economic development by defining marriage and family relationships. The overpopulation of Anjouan might be directly attacked through birth control. The conservative Muslim environment, however, makes this slow work. Doctors on Anjouan report huge stockpiles of contraceptives that have never been requested or distributed.

Wives fear if they don't have babies their husbands will toss them aside. This fear may not be unfounded. According to Muslim law a man can have up to four wives. About a quarter of Comoran men have two wives and 5 percent have three or more. Only rich men, however, can afford to support two or more households. Among the poor, it is more common for the man to desert the first wife when taking a second. Divorce is easy for men under Muslim law and rates range from 46 percent on Anjouan, to 128 percent on Grande Comore, and 178 percent on Moheli (1980 Census). Ottenheimer (1985:96) notes that youth attitudes toward marriage are becoming more Westernized. Polygyny served the Comoran mariner, providing a home in foreign ports and a familial network for business ventures, but such needs have largely disappeared.

Large expenditures for religious ceremonies such as the "grand mariage" and pilgrimages to Mecca are another fixed constraint in the Comoran Muslim context.

3. Anjouan Society

Socio-cultural conditions vary from island to island. Mayotte culture, with its non-Muslim Creole elite, was so different that residents voted to remain French. Moheli never developed the elite-peasant gap that characterizes Grande Comore and Anjouan, since French plantations on Moheli were quickly abandoned and taken up by peasants. On Grande Comore, social status is defined in terms of having conducted a "grand mariage," while on Anjouan it has evolved in terms of urban-rural relationships.

Anjouan has a long history of feudal elites living in towns that dominate the economic activities of slaves or peasants living in surrounding villages. This was the pattern for hundreds of years under the Shirazi sultans and again under the French colonialists. Robineau (1963:61ff) describes Anjouan under the French and analyzes three types of social relationships: (1) between peasants and their urban land-owners, (2) between plantation "society" and their peasant workers, and (3) between peasants and the exporters to whom they sell their cash crops. For each, he shows how the urban elite dominate and exploit the peasant.

A small group of noble families claiming Arab or Persian descent, known collectively as "gabila," inhabited their own quarters in each town. They monopolized religious and political functions, intermarried, and often owned large tracts of land (Newitt, 1984:75; Martin, 1968). Many of the nobility identified closely with France and served in its armed forces, received a French education, or took part in the French administration. The other two social classes on Anjouan were the freemen "wamatsaha" and slaves (wadzalyia or makwa). Freemen were either urban hangers-on, artisans, or peasants. With the abolition of slavery in 1904, distinctions between the two lower classes have blurred and have become replaced by new class distinctions based on economic status.

Social divisions were radically transformed when the French "society" arrived and forced peasants to work for them in return for occupying small farm plots. As the companies relinquished their land, the peasants remained as de facto owners. On land owned by nobles, sharecroppers gave landlords one-third of their produce until the Soilih regime. Thereafter many peasants occupied their land as illegal squatters (Newitt, 1984).

The breakdown of traditional agriculture based on small clearings and long fallows dates from the European removal of the forest for large monoculture plantations. The exhaustive practices of the sisal and sugar plantations depleted the soil so badly that they closed down in the 1950s. Meanwhile, the Anjouan population, displaced to steeper slopes, exploded from 15,000 in 1900 to 183,000 in 1988. Population pressure, resource depletion, and falling prices have combined to worsen the peasant's lot in recent years and to bring soil erosion problems to a crisis situation.

B. Macroeconomic Setting

1. Gross Domestic Product

Table 2 shows the growth of gross domestic product (GDP) of the Comoros from 1968 to 1986. Agriculture has always been the most important sector of the economy, contributing between 35 and 37 percent of total GDP since 1983. Table 3 shows GDP at constant 1985 prices, allowing the real growth in the various sectors of the economy to be seen because the effect of inflation has been eliminated. The growth of agriculture has averaged 4 percent over the three-year period, above the 3.1 percent rate at which the population is estimated to be growing.

The industrial sector of the Comoran economy is small, contributing only 4 percent of total GDP. Much of the industry in the Comoros is based on the transformation of agricultural products, again showing the importance of agriculture to the economy. Although the sector is small, it has been growing at an average of 6.6 percent annually between 1983 and 1986.

Overall the growth of gross domestic product has slowed over the last few years, growing by 2.7 percent between 1984 and 1985 and by only 2.1 percent the following year. Construction is the only sector that has shown negative growth in recent years. This is because many projects to build or improve roads, airports, and port facilities have ended.

Another reason for the slow-down of the economy has been the relatively low growth rate for the public services sector. In the long run, it may be good for the public services sector to grow slowly as it is felt by some that it is too large at present. In addition, this will help the government budget deficit.

Table 4 shows estimates of volumes, unit values or producer prices, and total value of agricultural production for 1979. When the value of essential oil processing is subtracted from the total value of agricultural production, the result is the agricultural contribution to GDP (compare with table 3). One can see the importance of wood, fish, cassava, and bananas to the rural sector.

2. Foreign Trade

a. Exports and Imports

Tables 5 and 6 show total imports and exports. Most exports from the Comoros are agricultural products. One of the only non-agricultural exports is re-exports of aviation fuel. This again shows the importance of agriculture to the economy as the only sector earning foreign exchange.

Table 2. Gross domestic product by industrial origin, 1968 - 1986.
(in current market prices, in millions of FC)

Industry	1968		1973		1978		1983		1984		1985		1986	
	CF	%	CF	%	CF	%	CF	%	CF	%	CF	%	CF	%
Agriculture	2890	48	3649	36	7195	48	14861	35	16266	35	18577	36	21049	37
Manufacturing	388	6	633	6	885	6	1516	4	1716	4	1887	4	2062	4
Construction and public works	778	13	2483	24	1379	9	4160	10	5265	11	4877	9	4673	8
Electricity, gas, and water	11	0	33	0	88	1	362	1	414	0	473	1	551	1
Wholesale and retail trade	1511	25	2522	25	4211	28	10872	25	12060	26	13147	26	14517	26
Banking, insurance, and real estate	330	5	556	5	496	3	1842	4	1962	4	2104	4	2258	4
Transport and communications	69	1	149	1	281	2	1406	3	1528	3	1688	3	1855	3
Public services	590	10	1008	10	2291	15	8129	19	8765	19	9442	18	10181	18
Other services	38	1	49	0	146	1	197	0	228	0	260	1	282	1
Gross Domestic Product	6567	108	11033	109	16826	113	43345	102	47944	102	52455	102	57428	102
Indirect taxes and subsidies	514	8	886	9	1904	13	849	2	976	2	1018	2	1158	2
Gross Domestic Product at factor cost	6053	100	10147	100	14922	100	42496	100	46968	100	51437	100	56270	100

Source: World Bank, 1979.
World Bank, 1987.

Table 3. Gross domestic product by industrial origin, 1983-1986
(at 1985 prices, in millions of CF)

Industry	1983	Percent Growth 1983-84	1984	Percent Growth 1984-85	1985	Percent Growth 1985-86	1986
Agriculture	17073	3.8	17724	4.8	18577	3.3	19186
Industry	1683	7.3	1806	4.5	1887	8.1	2040
Construction and public works	4958	6.6	5286	-7.7	4877	-2.7	4744
Electricity, gas, and water	398	10.3	439	7.7	473	2.1	483
Wholesale and retail trade	12067	5.1	12684	3.7	13147	3.1	13555
Banking, insurance, and real estate	2044	1.5	2074	1.4	2104	0.2	2108
Transport and communications	1561	3.5	1615	4.5	1688	2.6	1732
Public services	9022	2.7	9265	1.9	9442	0.7	9506
Other services	219	10.0	241	7.9	260	1.2	263
Gross Domestic Product	49025		51134		52455		53617
Indirect taxes and subsidies	942	9.6	1032	-1.4	1018	6.2	1081
Gross Domestic Product at factor cost	48083	4.2	50102	2.7	51437	2.1	52536

Source: World Bank, 1987.

Table 4. Volumes, unit prices, and values of agricultural products. 1979.

	Quantity in tons	Unit price in CF/kg	Total value in millions of CF	%
Cereals				
Rice	3700	60	222	2
Maize	1800	30	54	1
Tubers				
Cassava	25000	40	1000	11
Taro	1500	50	75	1
Yams	2000	25	50	1
Sweet potatoes	4200	50	210	2
Fruit				
Bananas	32000	50	1600	18
Coconuts	16200	15	243	3
Other	2300	70	161	2
Export products				
Vanilla	900	1500	1350	15
Ylang-ylang	73	6350	462	3
Other oils	2	10220	25	0
Copra	2750	60	165	2
Cloves	342	1130	386	4
Cocoa	17	300	5	0
Coffee	15	400	6	0
Meat and fish				
Beef	800	470	376	4
Other meats	290	600	174	2
Fish	5000	250	1250	14
Miscellaneous				
Milk	300	70	21	0
Eggs	700	40	28	0
Wood	685	2000	1370	15
Total value of ag products			9233	
Less value of oil processing (1/2 of total value)			244	
GDP of agriculture			8990	100

Source: Adapted from World Bank, 1983.

Table 5. Commodity imports. 1981-1985. Value CIF in millions of CF.

	1981	1982	1983	1984	1985
Rice	2704	2401	1168	2711	2156
Meat	667	658	371	713	601
Petroleum products	1605	2252	1342	2092	1445
Cement	461	430	584	829	642
Iron, corrugated sheet	157	253	109	188	501
Other	3198	4732	10809	12011	12104
Total	8792	10726	14383	18544	17449

Source: World Bank, 1987.

Table 6. Commodity exports. 1968-1985. Value FOB in millions of francs.

	1968	1973	1978	1981	1982	1983	1984	1985
Vanilla	349.3	100.1	736.8	2169	4201	3542	587	4689
Cloves	25.0	87.7	452.2	1728	1473	3181	1824	1376
Ylang-ylang	370.0	569.4	637.9	453	715	558	581	657
Copra	176.4	229.6	205.3	78	19	64	46	65
Essence of jasmine	25.6	12.4	--			--	--	--
Essence of basil	12.0	4.7	14.0			--	--	--
Essence of palmarosa	3.9	5.4	--			--	--	--
Other essences	7.7	25.6	19.8			--	--	--
Sisal	9.8	-	--			--	--	--
Cocoa	8.6	3.0	3.6			--	--	--
Coffee	6.4	9.1	10.8			--	--	--
Cinnamon	3.6	45.0	--			--	--	--
Non-agric. products	9.7	13.8	22.2	33	27	74	41	261
Total Domestic Exports	1008.0	1105.8	2102.6	4461.0	6435.0	7419.0	3079.0	7048.0

Source: World Bank, 1987.

One weakness of the agricultural sector can be seen from table 6. There is a relatively wide variation in the composition of exports from year to year. It is mostly due to fluctuations in crop yields, price changes, and exchange rates. Naturally, as the value of any one of the three major export crops varies from year to year, the total value of exports varies also. The Comoros does not have the advantage of having many exports so that decreases in some will be offset by increases in others. For the past ten years there have been only four export crops. Eight crops, representing about 10 percent of total exports in 1973, are no longer exported. With fewer export crops, the economy is more susceptible to the vagaries of international markets. The more export crops a country has the more stable the total value of its exports. The Comoran economy is in a much weaker position now because of this loss of export crops.

b. Food Exports and Food Imports

As seen above, there are no food exports. In the recent past copra was exported but the amount exported currently is negligible. A great deal of food is imported into the Comoros each year. Table 5 shows the main food imports: rice and meat. Flour and sugar are also important. It is generally admitted that the Comoros will never be able to produce enough food to feed itself. In fact, because of this, the government has changed its policy of food self-sufficiency to one of food security. The intent is to produce enough export crops so that the country can import the food it needs. Note that the value of agricultural exports exceeds the value of food imports.

c. Imports of Agricultural Inputs and Machinery

There are virtually no imported agricultural inputs. Only a few hand tools have been imported by various development assistance projects for sale to farmers. Basically, the only inputs used by Comoran farmers are a few hand tools, family labor, and locally available plant material and seeds.

d. Tariff Structure and Regulation of Agricultural Products and Factors

Table 7 shows the import taxes and export taxes on agricultural products.

3. Public Finance

Table 8 summarizes public sector financing from 1982 through 1987. Current revenues are very low, reflecting low tax collection rates. Most tax revenue is collected on commodity imports and exports. The revenues generated by the income and

Table 7. Import and export taxes.

Import taxes

Product	Import tax (%)	Sales tax (%)
Salt	exempt	25
Rice	exempt	6.6
Flour	5	32
Sugar	10	29
Oil	10	30
Milk	exempt	16
Meat	5	5
Fish	exempt	16
Sardines	10	--
Onions	5	17
Potatoes	5	16

Export taxes

Product	Export tax (%)	Surtax (%)	Contribution to the price stabilization fund
Vanilla	20.0	0.5	
Ylang-ylang	11.6	0.5	1000 F/kg net of extra
Copra	6.0	0.3	6 F/kg net
Cloves	15.0	0.5	1000 F/kg net
Basil oil	11.5	0.5	
Palmarosa oil	11.6	0.5	
Shells	10.2	0.5	
Turtle shells	10.2	0.5	
Coconuts	10.7	---	
Coconut fiber	8.6	---	
Green coffee	10.8	0.5	
Cinnamon	10.8	0.5	
Pepper	6.0	---	
Peanuts	6.0	---	
Oxygen	4.8	---	
Shark fins	110.2	---	

Source: Direction du Commerce Exterieur. 1985. Aide memoire sur les exchanges exterieurs des Comores.
Export tax = Droits de sortie.
Surtax = Centiment additionnel.
Import tax = Droits de douane.
Sales tax = Taxe de consommation.
Customs tax = Taxe de fond douanier.
Business tax = Taxe sur le chiffre d'affaire.
Note: All products pay an additional 4.2 percent for a customs tax, business tax, insurance, and warehouse fees.

Table 8. Public sector financing. 1982-1987. In millions of CF.

	1982	1983	1984	1985	1986	1987
Current receipts	4.80	6.86	6.95	6.50	8.43	9.01
Tax revenues	4.11	5.24	5.73	5.72	7.09	7.66
Non-tax revenues	0.69	1.62	1.22	0.78	1.34	1.35
Current expend.	10.40	13.95	14.75	16.74	17.96	19.99
Budgetary	5.51	7.71	7.81	9.21	10.19	11.69
Non-budgetary	4.89	6.24	6.94	7.53	7.77	8.30
Current deficit	-5.60	-7.09	-7.80	-10.24	-9.53	-10.98
Investment expend.	4.41	7.17	10.26	9.63	7.33	4.65
Budgetary	0.07	0.57	0.84	0.56	0.63	0.78
Non-budgetary	4.34	6.60	9.42	9.07	6.70	3.87
Overall deficit	-10.01	-14.26	-18.06	-19.87	-16.86	-15.63
External financing	10.05	14.03	17.86	19.32	17.00	13.22
Grants	5.93	8.17	8.99	11.23	10.93	11.20
Loans	4.12	5.86	8.87	8.09	6.07	2.02
Domestic financing	-0.04	0.26	0.40	1.22	0.57	2.89
Banks	-0.32	-0.05	0.32	0.53	0.15	0.22
Other	0.28	0.31	0.08	0.69	0.42	2.67

Source: World Bank, 1987.

business taxes are a fraction of what they should be. Current expenditures are more than twice current receipts, causing a large deficit.

About one-half of all current expenditures and almost all investment expenditures are non-budgetary. This is a reflection of the fact that most foreign assistance funds are budgeted and controlled by foreign development assistance organizations. That is, these funds do not pass through the government budget and are not controlled by the national treasury.

4. Balance of Payments

The balance of payments is shown in table 9. The trade deficit has varied between 3.2 and 10 million Comoran francs (CF) since 1982 with the exception of 1984. Vanilla exports were exceptionally low in 1984, causing exports to fall from 19.5 million CF in 1983 to 7 million CF in 1984.

Table 9. Balance of payments. 1982-1986. In millions of CF.

	1982	1983	1984	1985	1986
Exports FOB	6435	7419	3079	7048	6911
Imports FOB	-7507	-9274	-12981	-12158	-9049
Trade balance	-1072	-1855	-9902	-5110	-2138
Services, net	-8105	-9196	-16831	-16264	-13410
Transfers, net	5542	6840	12436	14081	10561
Current balance	-3635	-4211	-14297	-7293	-4987
Med & long-term capital	5321	7033	10079	9174	6435
Other capital	-87	-1922	914	1527	-148
Changes in reserves	1599	900	-3304	3408	1300

Source: World Bank, 1987.

The negative net services balance is, to a large degree, due to the high transport and insurance payments that must be made on imports. In the trade balance, imports are listed at FOB value. The cost of shipping, insurance, and unloading the goods is shown as a service cost. These costs often represent as much as 40 percent of the FOB value of imported goods. The net transfers are essentially the total of foreign assistance flowing to the country and remittances made by Comorans living overseas to family and friends.

5. Exchange Rate Policy

The Comoran franc is tied directly to the French franc (FF) at a rate of 50 CF = 1 FF. Because of this, the Comoros are sheltered somewhat from currency fluctuations--that is, devaluations--which would surely have accompanied the consistent deficits. Comoran francs can be freely exchanged directly for French francs, making international trade relatively easy.

6. International Debt and Debt Service

Table 10 shows the amount of outstanding debt incurred by the Comoros as of 1986. As can be seen, the total outstanding debt was equivalent to a very high 96 percent of GDP in 1986. Table 10 also shows the principal and interest due on this debt in 1986. The government is already in arrears on debt payments and debt service rises quite rapidly in the coming years.

Table 10. Outstanding debt and debt service. 1986.

	Outstanding Debt	Payments Principal	Payments Interest
Financial institutions	52.6	31.7	69.3
Bilateral			
China	1868.2	109.5	0
France	5571.2	4.3	119.6
Multilateral			
ADB	3655.3	158.1	160.2
ADF	7102.6	0	44.2
BADEA	6681.3		
Kuwait Fund	8022.8	170.3	122.6
Saudi Fund	7719	72.9	72.6
UAE Fund	328.1	451.9	134.3
IDA	8373.3	28.1	7.7
IDB	2781	0	51.8
OPEC	1781.1	101.8	9.1
EIB	2.7	0	0
IFAD	193.9	0	1.1
Total	54133.1	1128.6	792.5

Source: World Bank, 1987.

7. Conclusions

An analysis of the economic condition of the Comoros leads to several conclusions as to the type and organization of development assistance. First, agriculture provides virtually all of the country's export revenues. This is likely to be the case for some time in the future. Industry currently contributes only 4 percent of total GDP. Even if industry were to grow at a relatively high rate of 6 percent per year, for example, the total contribution of industry would still be small for the next ten years. Although it is important to help develop small industry in the Comoros, this industry will in most cases be created to serve the domestic market rather than to produce for export. It is important, then, that since only the agricultural sector is capable of earning foreign exchange, development assistance projects should assist in improving export crop production and developing new export crops. The emphasis should be on developing new export crops rather than expanding production of those that are currently exported because, as explained later, the international markets for these crops are quite limited. It is interesting that all foreign assistance

projects in the past five years have had their major emphasis on food crop production.

The government operates at a deficit every year. Expenditures largely exceed revenues, the deficit being made up through international grants and loans. The country's debt burden is small in absolute terms but large relative to the size of the economy. Debt-service is a problem and the country has sizable arrears already. The country is also in arrears on its international postal service contributions. In short, the government has no money and is unlikely to have any for some time. The Treasury is often short of cash. Since the Comoran franc is tied to the French franc, the government cannot merely issue more money. The government's monetary policy is closely controlled by France in return for France's backing of the currency. When the Treasury does have cash it seldom can fulfill all its obligations. The implications of this situation for development assistance organizations is that the Comoros should not be expected to be able to make significant contributions to the budget of development projects. USAID should either waive minimum host-country contribution limits for the Comoros or be extremely lenient in determining the value of goods and services the government can realistically contribute.

C. Agricultural Sector Overview

1. Land Use Potential

According to a study by the Institut de Recherche d'Agronomie Tropical (IRAT), 58 percent of the Comoros is suitable for agricultural production. Of this, 96,500 hectares, or 80 percent is not really suited to annual crop production but should be used for perennial crops. This means that only 17,000 hectares should be used for annual crop production. At the time this study was being done, the government had a policy of food self-sufficiency. It was felt, therefore, that 17,000 hectares were clearly not enough land on which to produce the food necessary to feed the country. IRAT then relaxed some of the criteria used to classify land use potential. Having done so, it was determined that an additional 34,000 hectares could safely be used for annual crop production if extensive improvements were made. Now, 51,000 hectares are considered suitable for annual crops, and the rest better suited to perennial crops. See table 11.

Table 11. Land-use potential on the Comoro Islands. In hectares.

	Anjouan	Grande Comore	Moheli	Total
Land with agricultural potential	19930	63675	12930	96535
Mixed foodcrops	13435	27685	10095	51215
Perennial crops	6495	35990	2835	45320
Non-cultivable	21325	37450	7895	66670
Total area (ha)	42400	102500	21100	166000

Source: Brouwers, M., E. Latrille, and G. Subrevile. 1977. Les terres cultivables des Comores. IRAT. Cited in World Bank, 1983, Comoros, Agricultural Sector Memorandum.

2. Institutional Resources in Agriculture

a. The Public Sector

CEFADER was created in 1980 to perform and deliver traditional agricultural services. The intention was to form an agency that would be as autonomous as possible to encourage initiative and to shelter it somewhat from the mandatory

procedures expected of a government service. CEFADER was to respond to the needs of farm families, allowing them to produce more than subsistence amounts, and to attract the cooperation of all foreign donors sc that development efforts were coordinated.

The CEFADER/CADER system was to have three basic functions: planning, coordinating, and providing agricultural services. CEFADER the planning organization was to prepare medium- and long-term development plans responding to the government's agricultural policy. It would propose, when appropriate, new programs or modifications to policy, and monitor projects to insure they achieved their objectives. Finally, it would prepare annual programs and establish budgets for these activities.

CEFADER the coordinating organization would progressively integrate all agricultural development projects, regardless of their funding source. It would monitor both technical and financial programs. In an effort to facilitate the maintenance of accounting procedures for projects financed by different donors, all CADERs would use standardized accounting and control procedures established for that purpose.

CEFADER the service organization would provide support to the CADERs. It would provide production inputs at the lowest possible cost, conduct certain specialized services, organize agricultural research, develop extension packages, and train field agents.

The CADERs were designed to be the regional organizations that would essentially provide services to farmers. Each CADER would cover a geographic area corresponding to 20 to 25 villages. The CADER would provide advice to farmers to solve problems, increase production, and preserve the resource base; provide continuing adult education, especially in health and nutrition; provide certain production inputs and services; make limited infrastructural investments (small roads, water storage cisterns); collect basic agricultural data; and monitor the acceptance of extension packages.

Most of the efforts in 1980 involved construction and rehabilitation of buildings and training of field agents. By 1981, the first five CADERs had been established at Maoueni and Simbossa on Grande Comore, at M'Remani and Tsembehou on Anjouan, and at Mibani on Moheli. By 1984, each island had a "chef d'antenne" whose function was to oversee the activities of all the CADERs on the island. Now the entire country is covered by 12 CADERs, although one is still called a "pre-CADER."

CEFADER is a public enterprise with its own budget. Because of its legal status it has the right to own property, borrow money, receive grants, and sell goods and services. As explained

above, it has three basic functions: planning, coordination, and provision of services. Through the years more and more development assistance has been given to the Comoros. All projects that dealt with rural development were channeled through the CEFADER/CADER system. The organization quickly became responsible for building and maintaining roads, health and education projects, and providing agricultural inputs.

By July 1985, CEFADER had approximately 900 permanent employees and a consolidated budget of over 3 billion CF. More than 90 percent of these funds were provided by foreign donors. Over 90 percent of the total funds are extra-budgetary funds, that is the donors handle the funds rather than the National Treasury. As can be seen from the following table, foreign aid to the agricultural sector has increased rapidly since the establishment of the CEFADER/CADER system. From 1980 to 1985, the amounts donated increased by a factor of six.

Table 12. Evolution of foreign aid to the agricultural sector.

Year	Millions of CF	Loans as % of total
1980	2,886	50
1981	5,509	
1982	6,265	
1983	8,289	
1984	13,639	56
1985	18,988	40

However, as evidence of the inability of CEFADER/CADER to absorb foreign assistance, only 1,913 million Comoran francs or 14 percent of the total had actually been spent by the end of 1984. The limiting factor during this time was not the availability of funds but the ability to implement funded projects. However, part of the reason for the non-expenditure of funds can be attributed to poorly designed projects and projects that could not evolve as situations changed.

Above it was mentioned that the CEFADER/CADER system had approximately 900 employees. This figure is approximate because there are a number of different categories of personnel: personnel funded by the ministry, personnel funded by CEFADER and CADER, project personnel, those funded by the WFP, and trainees funded by projects. It is difficult to arrive at a total because each organization reports on its personnel at different times and in different ways. In addition, some people may hold several positions and may be counted more than once. Additional problems arise when individual projects have their own pay scales. People naturally want to work for the highest paying donor.

Nevertheless the following estimates were given in July of 1985.

Table 13. CEFADER and CADER personnel in 1985.

	CEFADER and project level	CADER and Pre-CADER	Total
University level	18	7	25
Mid-level	31	21	52
Skilled field personnel			
Extension agents	34	131	165
Others	107	36	143
Unskilled field personnel	250	285	535
	440	480	920

In addition to these Comorans, there were, in July 1985, 41 expatriate advisors, almost two for every upper-level Comoran staff member.

In July 1987 CEFADER was reorganized, the organigram was modified, and the responsibilities of different services reassigned. It is rumored that another reorganization of CEFADER is imminent. This reorganization may be accompanied by significant personnel changes at the upper levels of CEFADER.

b. Agribusiness

Agribusiness in the Comoros is of three types: curing vanilla beans for export, distilling essential oils, and processing coconut oil.

Vanilla is cured before being exported. There are approximately 150 vanilla processors on Grande Comore, where 70 percent of all vanilla is grown. Vanilla is first dipped in hot water to kill the bean and stop the ripening process. The beans are cured by letting them dry in the sun for several days and then in a sheltered area for several weeks.

The processing of ylang-ylang and other essential oils is a distillation process. A mixture of water with the flowers is heated in a closed vat. The essential oils evaporate, travel through a cooling coil, condense, and drop into a container. The process is not unlike the processing of corn mash into moonshine whiskey. The manufacture of other essential oils is basically the same.

The distillation of essential oils is a relatively profitable operation. According to the director of the Societe Bambao in Bambao on Anjouan, a processor can have a gross profit of about 19,200 CF for each 14-hour batch of flowers processed. One 120 kg batch of ylang-ylang flowers will produce 0.9 kg of extra grade oil and 2 kg of third-quality oil. These qualities sell at 25,400 CF and 8,150 CF, respectively, for a total value of 39,160 CF. The flowers cost 18,000 CF or 150 CF/kg for 120 kg and approximately 1,200 CF for the two cubic meters of wood necessary. One would have to pay labor and amortize equipment from the gross margin. The "alambeic" used to distill oils costs about 300,000 CF to build.

It has been estimated that 70 percent of all coconuts produced in the Comoros are used for the manufacture of coconut oil. This processing is done by two firms, both of which use the oil for the manufacture of soap. The two companies are Fidali, maker of Fidali soap, and Salimamoud, maker of Naziko soap. Fidali has been making soap in Moroni for about 20 years and has a stable market. It now provides about 60 percent of the market. Naziko soap is relatively new on the market and is said to have some problems, being somewhat too acidic.

Within the past year, a small firm was created to roast and grind locally-produced coffee for the domestic market. In its first year of business, SoCoCaf (Societe Comorienne de Cafe) produced just under 4 tons of roasted and ground coffee. This coffee is sold for 650 CF for a 250 gram bag. This is one-half to one-third the price of imported ground coffee. It is said that no ground coffee has been imported for the past three months because imported coffee cannot compete with the price of Mokador coffee. Unfortunately, the breakeven point for SoCoCaf is about 7 tons per year. The major problem seems to be the very small size of the market. Comorans do not drink enough coffee to make a small firm like this one profitable. The three market niches the firm might possibly hope to capture are made up of those who use instant coffee, those who roast and grind their own coffee at home, and those who normally drink tea.

c. Farmers Organizations

There is one known farmers organization in the Comoros, a cooperative on Moheli formed some years ago to produce vegetables for the local market. After several years this cooperative began exporting foodstuffs to both Anjouan and Grande Comore. Moheli has always been recognized as a surplus island while both Anjouan and Grande Comore are deficit islands. The limiting factor seems to be the lack of transportation capacity.

d. Agricultural Credit

The only source of agricultural credit in the Comoros is a CEFADER/CADER-managed program. Almost all loans on Anjouan and Moheli go to small poultry farmers. On Grande Comore half the loans go to poultry farmers while most of the rest goes to purchase seeds.

3. Agricultural Production and Marketing

a. Traditional Exports

Today virtually all export revenues are generated by only three crops: vanilla, cloves, and ylang-ylang. However, in years past there were a number of other export crops. Even though they counted for no more that 10 percent of total export earnings, they were of considerable importance to a country that relies so heavily on agricultural exports. In 1986, Ambrosino conducted a survey to determine whether there were still sufficient numbers of coffee and cacao trees and pepper plants to justify interest in them as potential export crops. Table 14 shows the number of trees surveyed on each island.

Table 14. Estimated number of coffee, pepper, and cacao trees found in the Comoros in 1986.

	Coffee trees		Pepper plants		Cacao trees	
	Mature	Young	Mature	Young	Mature	Young
Anjouan	9832	8186	38453	2438	101	170
Moheli	87000	239000				
Gde Comore	17783	7236	17620	8491	22454	22773
Total	114615	254442	56073	10989	22555	22943

Source: Ambrosino, 1986.

b. Domestic Food Crops

During the late 1970s and early 1980s the Comoros had a policy of food self-sufficiency. Most projects financed during this time focussed on increasing food crop production. There was virtually no work done on increasing or diversifying export crop production.

The Maize Project, funded by the European Development Fund (EDF), was planned to increase maize production for poultry feed and human consumption. It was meant to discourage people from

consuming imported rice and start eating domestic crops. Maize production increased from 2,400 tons in 1982 to 3,900 tons in 1986. However, maize never became a traditional food crop. It has been eaten on the cob but never as a flour or a meal. Efforts seem to have ended to encourage Comorans to eat maize. In fact, rice production is now discouraged because it is erosive. Rice is being substituted for maize meal in the WFP program rations.

4. Marketing Channels and Facilities

a. Collection and Transportation

Marketing systems vary according to the island. On Anjouan, products are marketed by two types of traders: traders who obtain supplies in their own villages and traders who come from the city to buy supplies. On Moheli, most sales are at the village level. Occasionally a trader will pass through and buy some goods and sometimes producers will take their goods to Fomboni if they are sure to sell. On Grande Comore, producers take their product to market. Basic food crops are sold by the producer, whereas vegetables are usually sold to traders.

Food crops are produced for home consumption. Of all food produced, 90 percent is used for home consumption and 10 percent is marketed. Of all produce taken to market, two-thirds is for sale while one-third is for exchange. Of all the food at the market, between 90 and 95 percent is retailed by the producer while only 5 or 10 percent is marketed by professional market women.

Table 15 shows the quantities of produce sold at the four major urban markets on Grande Comore from May 1986 to July 1987 on an annual basis.

There are several problems arising from the current system. The cost of transport is high. Some observers feel the lack of good roads hinders marketing. Since it is more profitable to carry passengers than goods, producers are not allowed to carry much. Each person going to market can only transport as much as he/she can carry or as much as the taxi will allow. Packaging is also a problem. There are no containers that can be used to transport fragile produce. Many items, such as potatoes, have high losses due to spoilage. Produce is not graded, and low- and high-quality produce are sold together.

Table 15. Annual quantities of produce sold in four major markets on Grande Comore. 1986-87.

Product	tons/year	Product	tons/year
Cassava	818.7	Pigeon peas	566
Plantain	1043.2	Peanuts	726
Taro	203.2	Leeks	8
Sweet potato	208.8	Chouchoute	10.6
Breadfruit	426	Eggplant	19
Maize	168	Potatoes	106
Bred mefane	64	Carrots	72
Petsai	22	Green beans	9
Mataba	187	Cabbage	53
Lettuce	208	Bananas	68
Piment	704	Coconuts, ripe	679
Tomatoes	805	Coconuts, green	137

Market survey: The grand marche and petit marche in Moroni and the markets of Mitsamiouli and Fombouni.
May 1986 - June 1987.

Inter-island trade does not satisfy demand. A survey showed that Moheli exported an average of 1206 kg of foodstuffs to Grande Comore each week during July, August, and September of 1985. The 108 kg/day of cassava and 81 kg/day of plantains is far from satisfying the potential demand.

The cooperative in Moheli sent four shipments of food to Moroni and grossed almost 500,000 CF for a net profit of 48 percent. An FAO project initiated a number of other activities that have not yet had time to be evaluated. The project attempted several very interesting experiments, most of which had positive results. The conclusion is that trade can be stimulated. Individuals just need a little help.

b. Marketing Credit

Marketing credit is known to be used only in the collection of vanilla.

5. Conclusion

The CEFADER/CADER system is overworked and understaffed. The traditional agricultural services suffer because the CADERs are responsible for activities such as the sale of hand tools, the management of credit programs, construction and maintenance of roads, and health programs. Responsibility for these activities should be transferred to other, more appropriate agencies.

The government must encourage small businesses to become involved in the marketing of agricultural products, including product transformation.

D. Projects Financed by Other Donors

This section reviews agricultural development projects financed by donors other than USAID. The initial list was taken from the UNDP annual report of project activity and therefore includes all ongoing projects. In addition, selected projects already completed or terminated for other reasons have been included to give perspective to the present situation.

1. Project: Projet d'appui au developpement rural aux Comores.
   Implementation period: Began 1988.
   Location: All islands.
   Donor: FAO/UNDP. COI/82/001 and COI/87/004.
   Funding: Phase 1: $2.5 million. Phase 2: $3 million.

   Objectives: Development of a rural extension network in the Comoros through initial establishment of five CADERs and CEFADER. Succeeding phases were to expand and strengthen both CEFADER and new and existing CADERs. The project has funded infrastructure, training, and technical assistance. It has concentrated on stabilizing and strengthening CEFADER rather than on agricultural production.

2. Project: Integrated rural development Nioumakele-Tsembehou.
   Implementation period: 1983-87, extended.
   Location: Anjouan in the Nioumakele and Tsembehou CADERs.
   Donor: ADB and FAO. UTF/COI/001/COI.
   Funding: $10 million.

   Objectives: Extension and increased crop production for 5,000 farm families in two CADERs, reforestation, infrastructure improvement.

   In this particular part of Anjouan, many farmers plant only rice in their high-altitude fields. The project encourages farmers to plant other crops and to give up the production of rice, which is highly erosive.

   It seems that farmers do not plant any other crop for fear it will be eaten by free-ranging animals, whereas rice will not. The solution adopted by FAO encourages farmers to fence their fields so the animals cannot get in. The project works at ten sites with an average of 15 farmers per site. All are in a relatively small area so that extension, monitoring, and mutual support are facilitated. All sites are near main roads and there is maximum exposure to passers-by.

The CADER uses WFP rations to buy cuttings of grevillia and sandragon. These cuttings, which are one and one-half to two meters in length, are then transported to the site and given to the farmers. The farmers plant the cuttings on the edge of the fields at 20 to 40 centimeter spacing to form a fence around their fields. As the cuttings take root, the farmer uses whatever is available to place between the fence posts to prevent the passage of animals. The farmers are given the cuttings on credit. They are expected to give the CADER three cuttings for every two they receive within one year.

The farmer is expected to put a cow on his field on a five meter rope. The cow is kept in one spot for a month, then moved. The farmer will incorporate the manure produced by the cow into the soil. If the average field size is one-quarter hectare, it will take 25 months to fertilize the entire field. In one month the cow will add manure to the field equivalent to 25 tons per hectare every two years (250 kg/100 square meters).

The farmers are given a watering trough so water can be stored on the field for the cow. Lack of water is a major constraint. The farmer is expected to pay back this loan by giving the price of one sack of cement to the CADER. All fields must be protected with biological contours.

The fences seem to do a good job of keeping animals out of the fields. As well, requiring the farmer to keep his cow in the field means the cow is not destroying other farmers' crops. The fences have the added benefit of reducing theft from the fields.

The major constraint to the project is the difficulty in finding and transporting cuttings to the sites. Six pickup loads are required to treat one hectare. The project is viewed as a pilot; the "real" project will begin in the near future. Each year 600 ha of farmland will be treated in each of the four CADERs on Anjouan (2,400 ha/year). Within eight years, all the farmland on the entire island will have been treated. The idea is to assign a volunteer (American, French, Dutch, German, or UN) to each 600-ha site for three years. By the end of three years, the fences and contours will be well established.

This approach is based on activities farmers in the area initiated on their own. Many years ago, the Bureau pour le Developpement de la Production Agricole (BOPA) tried unsuccessfully to introduce fencing in this, the most densely populated part of the country. As time passed, population pressure increased. It seems that in the last few years, farmers have remembered the advice they were given

years ago and began to fence their land without any assistance. The FAO is attempting to take advantage of this initiative by encouraging additional improvements and by introducing the techniques in new areas.

The FAO provides minimal funding for the project. Besides technical assistance and a number of vehicles, the CADER is given gasoline and vehicle repairs when these are directly linked to the activity. The WFP provides rations for the purchase of cuttings. It is unclear what will happen to this project when it ends in 1989.

3. Project: Maize project.
Implementation period: Phase 1: 1978-82. Phase 2: 1983-86.
Location: Grande Comore, extended to all islands.
Donor: EDF.
Funding: Phase 1: $1.6 million. Phase 2: $1.6 million.

Objectives: Development of maize for animal and human consumption (substitution of maize for rice) and extension program for 4,000 farmers cultivating 0.25 ha of maize each.

Initially the project was successful. A large number of farmers began to plant maize and total production increased. Results have been interpreted in different ways. It is certain that most maize is eaten on the cob while still green. Because of the humid, tropical climate, it is not easy to dry or store maize meal. For these reasons, the project was not successful in encouraging increased consumption of maize meal. In addition, the WFP introduced maize meal into its rations in 1984. The amount of maize imported by the WFP was equivalent to the total amount of maize produced in the Comoros. This caused a downward pressure on maize prices, discouraging further production.

A second objective of the project was to provide maize meal to small poultry farmers for feed. It seems that there was no supply of dry maize forthcoming for the production of chicken feed. Others report that large quantities of maize were sold to large poultry producers who produced their own feed.

4. Project: Projet vanille - girofle.
Implementation period: 1978-82.
Location: All islands.
Donor: African Development Bank (ADB).
Funding: $7.6 million.

Objectives: Establishment of farms for the production of vanilla vines and clove seedlings; increase in banana production through replanting of shoots; construction of hangars for vanilla processing.

This project was planned and funded under the previous government. Large portions of the national vanilla and clove production were to be nationalized. With the change in government, there were also fundamental changes in political philosophy and nationalization was no longer considered. Accommodating this new approach would have required major amendments to the project design which, for some reason, were never successfully negotiated with the donor. The project simply ended.

5. Project: Coconut rehabilitation and rodent control.
Implementation period: 1980-85.
Location: All islands.
Donor: International Development Agency (IDA).
Funding: $5.2 million.

Objectives: Replanting of existing trees by improved varieties, elimination of rodents responsible for losses of 30 percent of production; improvement in copra processing.

There were some technical problems. It is said that the variety of coconut being introduced would not reach its full genetic potential if it did not receive fertilizer for the first three years. Since the trees would not be fertilized, it was felt by some that the trees would not be more productive than the current varieties. It was also said that the new variety was susceptible to certain diseases to which the local variety was immune.

Some farmers said they did not want the new, shorter variety because, as theft is a problem, it would become easier to steal the coconuts. In addition, the shorter coconuts would provide more shade that the tall varieties, making intercropping more difficult. It is said that even though large numbers of seedlings were distributed, the market was quickly saturated and farmers no longer accepted seedlings. Rat control was also determined to be difficult and the demands on the farmer too great (from the farmer's point of view).

The project was designed at a time when the world price for copra was high. By the time the coconut trees started to bear fruit, the world price for copra had fallen to such a low level that the Comoros stopped exporting copra altogether.

6. Project: Projet aviculture.
Implementation period: 1979-85.
Location: All islands.
Donor: UNICEF, EDF, UNDP.
Funding: $2.3 million.

Objectives: Annual production of 300 tons of poultry meat and four million eggs. The project did attain most of its goals and was considered a success. One limitation was the lack of poultry feed although the Maize Project did increase the supply of maize available.

7. Project: Integrated rural development.
Implementation period: Phase 1: 1981-84. Phase 2: 1985-88.
Location: All islands.
Donor: WFP.
Funding: $7 million.

Objectives: See section III-A on the World Food Program.

8. Project: Research and development.
Implementation period: 1983-85.
Location: All islands.
Donor: France.
Funding: $0.5 million.

Objectives: Development of technical packages for farming systems. Establishment of a documentation center. This project financed French technical assistance in the form of agricultural researchers.

9. Project: Rice production and integrated development.
Implementation period: 1983-84.
Location: Moheli.
Donor: CCCE.
Funding: $0.8 million.

Objectives: 100 ha of irrigated rice; improvement of upland rice cultivation; development of the islands. There are only about 100 ha of irrigable land on all three islands. This is a follow-up to an FAO pilot project.

10. Project: Assistance to rural development.
Implementation period: 1983-86.
Location: Grande Comore and Anjouan.
Donor: United Nations.
Funding: $1.2 million.

Objectives: Financing of capital construction costs only for four CADERs; provision of office space for CEFADER.

11. Project: Agricultural credit.
Implementation period: 1982-85.
Location: All islands.
Donor: United Nations.
Funding: $0.5 million.

Objectives: To establish a credit program to promote improved poultry management and foodcrop production. Credit up to 300,000 CF per beneficiary for foodcrops, market gardening, poultry, farm equipment, and construction materials to farmers participating in extension programs. Neither interest nor security were required. Most of the credit went to small poultry farmers. Some farmers have defaulted on their loans because they had difficulty selling their product or because they did not receive continued technical assistance from the extension agents.

12. Project: Projet services ruraux.
Implementation period: 1984-88.
Location: All islands.
Donor: IDA, International Fund for Agricultural Development (IFAD).
Funding: $8 million.

Objectives: Creation of three services: data collection and project monitoring; livestock; and forestry and associated production activities. Establishment of two new CADERs on eastern Grande Comore.

13. Project: Regimes fonciers et structures agraires.
Implementation period: 1985.
Location: All islands.
Donor: FAO. TCP/COI/4503 A.

Objectives: This project funded a series of three studies of the land tenure system in the Comoros. These are the reports reviewed in section III-B of this report.

14. Project: Marketing of vegetables and fruits.
Implementation period: 1985.
Location: All islands.
Donor: FAO. TCP/COI/4401.

Objectives: The marketing section of CEFADER (Service de la Commercialisation) was created with the assistance of this project. The report by Ambrosino reviewed in this study was financed by this project.

15. Project: Potential for animal traction.
Implementation period: 1985.
Location: All islands.
Donor: FAO. TCP/COI/6651.

Objectives: This project reviewed the feasibility of using animal traction in the Comoros. Topography and soils are such that animal traction would only be feasible in limited areas.

16. Project: Developpement integre du nord-est d'Anjouan.
Implementation period: 1987-97.
Location: Northeast Anjouan.
Donor: EDF.

This integrated rural development project includes road building, health, and education in addition to agricultural extension activities. The first year of the project was devoted to establishment of infrastructure. Project personnel for agricultural activities have not yet arrived.

CHAPTER III

POLICY ISSUES

A. World Food Program

The World Food Project (WFP) entered its second phase of operation in the Comoros in 1985. This four-year phase has nine sub-projects, one with hospitals and eight with rural development activities. The eight rural sub-projects are:

- soil conservation and restoration
- seed multiplication
- reforestation
- road maintenance
- development of village infrastructure
- creation of extension services
- support of the CEFADER/CADER system
- training

A recent evaluation of the WFP recommended that the number of sub-projects be reduced from nine to four. (It is unclear whether this evaluation has been released for general distribution.) The four sub-projects to be kept would be hospitals, soil conservation and restoration, reforestation, and development of village infrastructure. It is uncertain that the recommendations of the evaluation team will be followed as some CEFADER officials and many expatriate advisors feel farmers should no longer be given food rations for work done on their own fields. However, the minister of production feels farmers should be given food rations to perform tasks that are physically demanding, such as terrace construction, or for which returns do not begin for several years, such as tree planting.

The current family ration is 2 kg of maize meal, 0.4 kg of sardines, and 0.2 kg of oil. The individual hospital ration is one-fifth of a family ration. However, the hospital ration is 0.2 kg of both rice and maize rather than 0.4 kg of maize. Total food shipments were not to exceed 12,145 tons of maize meal, 360 tons of rice, 625 tons of oil, and 1,250 tons of sardines during phase 2 of the WFP. Actual deliveries for the first two and one-half years of the project are shown in table 16.

Certain donors are concerned that food donations through the WFP may discourage local agricultural production. Food which is distributed is either consumed by the recipient or sold. In the first case, demand for food on the local market falls because recipients are buying less. As demand decreases, so does the price. In the second case, when recipients sell their food rather than consuming it, the total supply of food on the market increases and the price falls. In either case, the price of food will be lower as a result.

Table 16. Food deliveries made for the World Food Program.

	Project Limit	1985*	1986	1987
Rice	360	0	96	149
Maize meal	12,145	809	1,743	4,618
Oil	625	48	74	220
Fish	1,250	158	149	455

*from July 1 to December 31.

The amount of price decline depends on a number of factors such as the elasticities of supply and demand. In general, though, if the amount of a product distributed by the WFP is large compared to the total consumed in the country, the price change will be greater than if the amount distributed were smaller.

1. Rice

Recently the government and the WFP decided that the food ration distributed by the WFP will no longer contain maize meal. According to project officials, there is no more maize meal in the warehouses and no more will be imported. Rice will be imported in its place; 0.4 kg of rice will replace the 2 kg of maize meal in the current ration. The question then will be: will the quantity of rice imported by the WFP be large compared to the total amount marketed in the Comoros? Second, if it is large and the price of rice drops, will this cause farmers to reduce production of rice?

If the price of rice falls by, say 10 percent, then the value of the crop will fall by the same amount. The farmer will then need to determine whether to produce another crop with a value greater than rice. This explanation is possibly more theoretical than the situation demands as the price of imported rice is set by the government and has varied little in four years, despite large changes in world prices.

Some rice farmers say they cannot produce any other crop, no matter what its value, because it would be eaten by free-ranging animals. Only rice is safe (DuPont, per comm). Others say they produce rice on fields that have deteriorated to the point that no other crop will grow (Caburet, per comm). In either case, farmers may decide to continue raising because rice it is better to get a little rice than none at all.

If the WFP remains at its present funding level, and if rice is substituted for maize meal at the rate of 0.4 kg rice for 2 kg maize meal, then WFP rice imports should be 625 tons per year. Annual commercial rice imports have been in the range of 25,000 tons per year. Thus WFP rice will represent about 2.5 percent of all imported rice. Since the population grows at 3.1 percent per year, the normal demand for rice should increase at about that rate. It is unlikely, then, that WFP food would have any effect on the market. (Note: one reason for changing the WFP ration from maize meal to rice was to discourage rice production. Given these figures, this strategy is unlikely to work. If food for work were channeled specifically to farmers who produce rice, there might be a more significant effect.)

The need for increased rice imports was demonstrated by a study conducted by the BDPA. According to this study, domestic production of food could double by the year 2000 given the limits of available land. However, the demand for food will increase by two and one-half times. There will still be a deficit of 80,000 tons of rice-equivalent each year. Thus, food must be imported.

2. Oil

In recent years, oil imports have taken the place of domestically-produced coconut oil. However, coconuts are being used for other purposes to such an extent that there is a shortage of coconuts. So, oil imports have not necessarily replaced coconuts but have allowed coconuts to be used for other purposes. A project to increase production of coconuts is rumored to have saturated the market for coconut seedlings. However, this is unlikely because Comoran farmers have decided they do not like the particular variety of coconut being distributed.

3. Milk

Milk and beef production is extremely low in the Comoros for a number of reasons. There is virtually no range or pastureland of value. Animal production can only increase if feed and fodder are produced and the animals are stall-fed. The lack of water seems to be as great a problem. In many areas there is no permanent source of water and animals often go thirsty. Finally, most cows are heavily infested with intestinal parasites. For all these reasons, milk production is unlikely to increase in the near future even if there were demand.

4. Conclusion

The amount of rice being imported by the WFP is small compared to what is imported commercially. WFP rice will represent less than 2.5 percent of total imports. Since the

population growth rate is estimated to be 3.1 percent per year, the greatest impact the rice would have is that commercial imports would not expand in 1989 as fast.

Even if the quantity of WFP rice were greater than 2.5 percent of the total, it would have little effect on price because it is fixed by the government. The price has been at its current level for four years. If the price does not change, farmer incentive to plant rice will not either.

B. Land Tenure

The purpose of this section is to clarify land tenure issues, relevant national policies, and implications for the USAID/CARE program.

The complex and uncertain patterns of land tenure in the Comoros represent a fundamental constraint on development. The government's Intermediate Plan (1983) stated that no substantial progress towards total mobilization of the land and modernization of farming techniques can be accomplished without obtaining from land-owners full and continuous utilization of land and without providing security for non-proprietary farmers.

Substantial data exist on this issue. An FAO project (October 1985 - July 1987) surveyed the problem, formulated land tenure principles and options, and developed judicial recommendations (Coulibaly, 1986; LeRoy, 1986; FAO, 1988). The government promulgated a new law based on these recommendations, setting up a land tenure regulating organization (Loi 86-017: Code de l'Urbanisme et de l'Habitat, July 1987). In addition, CARE is currently finalizing a Social Agroforestry Survey which analyzes land tenure in the project area (Veerkamp, 1988). The following information is drawn largely from the excellent report of Coulibaly.

There is a great diversity among the islands with respect to land tenure. In addition to the Muslim inheritance law, there are peculiarities which stem from custom. Thus, some lands can only be inherited by women (the "manyahuli" in Grande Comore) and some property is indivisible (Mohelian "manyahuli"). There is also diversity in the social order influencing the land tenure problem. On Grande Comore, clear status and a smoothly functioning social system promise relatively harmonious resolution of land tenure conflicts. On Anjouan, however, a rigid structure filled with social inequalities fosters social tensions and suggests the need for reorganization of land tenure relationships.

1. Grande Comore

For Grande Comore, Coulibaly (1986) finds a correlation between land ownership and social status based on the "grand mariage." The number of fields owned increases as one prepares for the "mariage" and falls after completion of the ceremony. Coulibaly (1986:30) finds the social organization can be relied upon to support development programs. It doesn't exclude one from social advancement, thus limiting tensions. It is based on exchange of goods, and does not contribute to the development of inequalities. And, through its capacity to mobilize work for the profit of the village community, it can serve to foster work for the common good. Those of high social status could resolve certain land tenure problems such as management of common lands (the village reserve, and national forests), definition and direction of anti-erosive measures such as reforestation, and assistance in regulating minor land tenure conflicts (usurpation, destruction by animals, or inheritance questions).

A special opportunity also exits for including women in development. Women who possess "manyahuli" fields transmit them to their daughters, usually at marriage. The mother decides the size of the fields to be given to each daughter. A woman without daughters leaves her fields to her sisters from the same mother.

2. Anjouan

Robineau (1963) described Anjouan under the French as characterized by inequality, domination by big landlords and European colonialists, and heterogeneity. With the departure of the French companies, land has been redistributed in various ways. A persistent problem arises from the fact that villages never had territories of their own.

The entrance of French plantation companies resulted in confused seizing of land (except in Western Anjouan), the appearance of the small peasant owner, and the appearance of the salaried worker. The landed aristocracy had to shift to new occupations in commerce or administration. Their gradual retreat during the 1960s resulted in increasing the lands held by small peasant owners.

Major inequalities still characterize Anjouan. The great landlords, consisting of about 20 families, still hold about 5,000 ha or 40 percent of cultivable land. Three families hold 4,000 ha and one family alone holds 1,600 ha. These land owners are concentrated in the towns of Mutsamudu, Ouani, and Domoni and dominate the social scene.

The departure of the colonial firms left a bipolar social structure of land owners and peasants. There is little social mobility compared with other islands. Marriages between nobles

and commoners are rare and the rigid social hierarchy does not permit much social advancement. The great families maintain their dominance by keeping their holds unified, rather than splitting them through inheritance, across economic, political, and social spheres of influence.

Three major regions can be identified.

a. The Sima Peninsula and Parts of Pomoni

In the region near Mutsamudu, including the Sima Peninsula and Pomoni, the traditional domination of urban land owners has continued. This has resulted in continuation of a traditional production system and maintenance of patron-client relationships. Three factors have tended to modify this situation: under the pressure of resales of land, agricultural laborers have decreased; town infuence decreases with the distance from Mutsamudu; and, in Pomoni, access to the neighboring forest reserves has yielded more independence.

Thus, three subregions can be identified.

i. Bay of Anjouan

The Bay of Anjouan, near Mutsamudu, represents the most severe situation. One-fourth of those surveyed have no land and most have one field. Mean holdings range from 2.6 to 3.1 plots in three sub-districts. Seven percent of the holdings are currently under litigation.

ii. Sima Peninsula

More distant from Mutsamudu, this area experiences less urban domination. Some 17.2 percent of respondents have no land, and mean holds average 3.15 fields. In spite of continued inequalities, tensions are less severe.

iii. Pomoni Plain

The land tenure situation on the Pomoni plain (represented by the Village of Vassi) is intermediate between the bay and the peninsula. Peasant owners have developed through occupation of the neighboring forest zones (M'Trouni, Chaleco, Idzani, Marajajou, etc.), which represented 36 percent of the fields surveyed. Land tenure is governed by customary law (85 percent), usually without deeds (67 percent), 13 percent were purchased, and another 22 percent are expected to be purchased. The situation remains fragile; over half feel they are not full owners of their land. But, litigations are less frequent, involving 5 percent of the fields.

b. Nioumakele Peninsula and Parts of Pomoni

This area encompasses M'Remani, M'Ramani, and a part of Moya. It suffers from overpopulation, rapid population growth, reduced arable lands, low agricultural yields, insufficient water supplies, and usurpation and deforestation of forest reserves. Population is estimated at 30,636 for 6,566 sq km, or 466 persons per square kilometer, compared with 325 for the island as a whole. Population per arable square kilometer is 3,434.

This is one of the poorest areas in the country, but also a zone where land tenure inequalities are least. There are not many urban land owners, apart from those of Ongojou who bought land from the Societes in the 1970s. Small peasant owners came to dominate in stages marked by violence. Many land sales were made between 1950 and 1975. Most important psychologically was the agrarian reform of 1950 to 1953 which consolidated the rights of peasants on lands already occupied.

In spite of such measures, different levels of land tenure yield a variety of problems.

i. M'Ramani

M'Ramani, south of Nioumakele, is a former sisal plantation with surrounding villages. Villages once had land reserves for food crops, but they were limited in size. The economy, based on a combination of wage labor and farming, broke under increasing population pressure. Reserves were extended through collective occupation by villagers of land belonging to the firms. This accounts for close to 50 percent of the fields surveyed. This increased the number of fields per inhabitant (average 4.35 at M'Ramani, with the mode at 2). Over 85 percent of farmers have at least one field. Such extensions of territory have led to conflicts among villages (such as between M'Remani-Bandamagi and Kangani) where boundaries are vague. Some 15 percent of peasant fields are under litigation.

ii. High Zones

Higher villages (Dagi, M'Remani, Ongojou, etc.) are characterized by conflicts between peasants and large landholders. Landlord holdings stem from sales by colonial firms, who favored noble families from the town of Domoni that had aided them in asserting their authority, and lieutenants in the villages who sought to break down village cohesion. But cohesion has been maintained. In Dagi, for example, only 6 percent of the fields are currently under litigation. Most land holdings were inherited between 1958 and 1975. Still, inequalities continue. One-fourth of respondents (25 percent) hold no land, while most (37.5 percent) possess three to five

fields. Cash crops and food crops hold equal weight, both being found on three-fourths of the fields surveyed.

iii. Moya

Moya owes its uniqueness to the forest in which it is situated. Thus, only 7.5 percent have no land and 37.5 percent have three to five fields. About 11 percent of the fields are in the forest. Since ownership of forest lands is unsure and non-agricultural income is available (bucheronnage), peasants invest more in food crops than in cash crops.

If the rapid population growth in the Nioumakele area cannot be slowed, migration must be reoriented to reduce the tensions being produced in neighboring regions. This requires finding appropriate alternative locations and purchase of these lands by the state. Definite progress has been made recently in the struggle against erosion by projects that organize peasants from an entire watershed area. Improvements are only undertaken if at least 80 percent of the peasants agree to participate in the work. Such groups ought to be extended throughout the island rather than transformed into cooperatives. Fighting erosion would not be possible either on the family or village level. But the family is restrained in Anjouan by a generalized individualism which characterizes the society. And, most Anjouan villages do not constitute true sociological entities. According to IRAT, anti-erosive measures should be extended to the Nioumakele Peninsula, the Bambao area, Jimilime Peninsula, the Bay of Anjouan, and the Sima Peninsula (Coulibaly, 1986:60).

c. The Jimilime Peninsula

Compared with Nioumakele, the Jimilime Peninsula is privileged. However, land tenure conflicts in this area have reached an alarming level since 1984 due to the existence of large urban landowners (holding 1,600 ha in Marahani) and the startup of a large EDF-funded agroforestry project for the defense of the peninsula. The government was supposed to buy lands from the large landowners for redistribution to landless peasants. This failed for two reasons: some owners agreed to sell lands only to have family members object, and others agreed to sell to the government but then sold to individuals offering a better price.

Conflicts are most violent on the east coast, which suffers not so much from lack of arable land as from domination by urban landlords dating from the time of the Sultans. Three types of conflicts are found in the region: between peasant families and urban landlords, between villages and urban landlords, and between villages (Ongoni versus Bambao, and Ongoni versus Tsembeho and Chandra).

The Anjouan village remains a juxtaposition of households linked by the common origin of the wives, since marriage is matrilocal, and by village assemblies uniting the men. There is no real power other than that of resident families, and it is difficult to imagine how any could be created at the village level as the society depends less on the village than on family groups. But the family is restrained when compared with Grande Comore. It is reduced to the husband-wife couple, independent of the husband's family origin. There is no ceremony like the "grand marriage" joining families. Links to the wife's family are also lax because the husband is head of the household (Coulibaly, 1986: 71).

In conclusion, the complexity of the problems on Anjouan require original solutions. Inequalities are strong and the society habitually resolves conflicts with violence. The land reform consultant, Jean Marc Loodts, has proposed the formation of communes charged with managing lands and public work (including anti-erosion campaigns). Participants at the Round Table (August 19, 1986), however, insisted on the difficulties of establishing such an institution. It would take time, but land tenure problems are pressingly urgent. The recent formation of new peasant groups for the struggle against erosion appears to offer an interesting path to pursue.

3. National Policy

Briefly, the FAO legal consultant, Etienne Le Roy, considered scenarios based on five policy alternatives: (1) socialist, (2) hyper-liberal, (3) realist, (4) prospective and (5) voluntarism. He rejected the socialist approach as too reminiscent of the Ali Soilih regime (1975-78). The hyper-liberal scenario had the government doing nothing. The realist approach involved obligatory cadastral registration of all properties within 15 years to transform customary rights into land titles. This approach has worked well in the Ivory Coast and Gabon, but has encountered problems in Kenya.

The voluntary approach proposes a cadastral survey without obligatory registration. To regulate the land tenure problems, it is necessary to establish a commission (Haute Autorite Fonciere). Muslim law can serve as the basis for a new approach for property law and for putting land to use.

Le Roy's "prospective" scenario looked to the next century when population growth will demand urbanization and industrialization. This view requires that land reserves be considered now for future public use. For this, Le Roy proposed an inter-ministerial committee for the planning and administration of property.

Le Roy recommended a voluntarist policy with the following specific actions:

- Priority regulation of pending cases such as the EDF case in Jimilime, and formation of an inter-ministerial commission in 1986.
- Preparation to conduct the universal cadastral survey, to be followed later by obligatory registration.
- Definition of the organization and personnel requirements of the land tenure commission.
- Adaption of judicial texts to reinforce new land policies.
- Institutionalize follow-up and monitoring of progress by associating a representative of the inter-ministerial commission with a member of a CEFADER technical division.

In 1987 the Comoran Government accepted the voluntary approach and revised land tenure laws. Since then, however, the government has experienced a severe financial crisis and is currently unable to continue with the next step of conducting an expensive cadastral survey.

4. Conclusion

Land tenure problems are a significant constraint on development. However, it would be inappropriate for the Comoros to invest large sums in a cadastral survey given the current financial crisis. Policy initiatives clarifying the rights of owners and cultivators could have more direct consequences, but would require careful study. Legal approaches of converting verbal agreements to written titles are unlikely to be effective for illiterate peasants. Sociological approaches in which verbal agreements are witnessed and sanctioned by village elders or religious leaders might prove more productive.

C. Village Organization

A recent survey (Veerkamp, 1988) describes villages in the CARE project area (Ouani and Boungoueni CADER, which form the north western half of Anjouan). This section is based on Veerkamp's findings, extensive interviews with Miriam Van Reenen, a South African missionary who has worked 13 years with Comoran women in these villages, and personal observations from visits to seven villages and three women's groups.

1. Village Groups

Organizational structure at the village level is weak. The village chief has little authority and is often appointed by the government and, therefore, not respected. The district deputy, though theoretically elected, is also nominated. The only formal organizations are religious groups to which most men and an average of 23.6 percent of women belong, though differences exist among villages. Women's groups are loosely organized and come together mainly to organize weddings and festivals. Other groups are sporting and music clubs. There are no farmer's cooperatives, no collective buying or marketing, and no farmer's credit facilities. Salaried employees, like extension agents, may form a group. One member collects the salaries for all in a given month, thus receiving one large sum.

Veerkamp describes the Boungoueni women's group as showing great receptivity to messages on health and vegetable gardening, and as taking the initiative to ask for support. Van Reenan works closely with this group and I observed their meeting. She says women's groups are generally open to a variety of extension messages and suggested that she and an extension agent could meet separately with the women from each of the CARE focus areas to discuss new cropping patterns. The advantage is that women talk more freely in such groups than they do in front of men.

Despite the lack of formal organization, every village has recognized and respected elders. The villagers I questioned said that elders are empowered to make decisions for the village. Van Reenan has successfully established two village development committees by talking with the elders.

The chief of Dzindri village said they have had a Committee of the Men for four years, which they were requested to form by the government. This committee has attempted two development projects: constructing a water supply and building a supporting wall for the Mosque. They succeeded with the latter, but could not raise enough funds to complete the water supply, which remains a major need. They asked the CADER for help three years ago, but haven't seen results. I learned that a team visited the village to consider using U.S. Embassy self-help funds, but that the amount requested was too large. It seems probable that a

technician trained in appropriate technology water source development could satisfy the need at a reasonable cost, and Weightman (1987) identifies drinking water supply as a major problem on the peninsula areas of Anjouan. The Peace Corps might consider this specialization for a Phase II volunteer.

2. Families

Four out of five village households (79.2 percent) are headed by men. Half had lived in the village over 25 years, but one-fifth (21.9 percent) had been there less than 10. Average household size was 7.7 (ranging by village from 5.6-10), up from 5.6 in the 1980 census.

Marriages are very unstable. No formalities are required for divorce. Almost one-fourth (24 percent) of men are head of more than one household, up from 19 percent in 1980. Most men marry several times, but can't afford multiple households, so often leave the first wife. She returns to her parents, or stays in her house, but joins the parent's household. She may also remarry. The number of widows is high, due to differences in age between a man and his second or third wife (Veerkamp, 1988:16).

Sex-division of labor exists, but is not rigid. Cash crop cultivation, livestock raising, boat fishing, and construction are normally men's tasks. Household chores, gathering firewood, fetching water, food crop cultivation, and wading-fishing are women's work. The average family devotes 3.5 full-time equivalents of labor to its farm. Children help during peak labor periods such as harvest time.

3. Farms

The Anjouan farmer lives in a village and walks to his scattered plots. The average household has 2.5 fields, ranging from 0 to 9, but almost all (92.3 percent) have 1-4 fields. Less than one percent (0.7 percent) are landless, though that figure may be higher as farmers may fail to mention illegal fields in the forest or fields left fallow for a long time. Most (63 percent) plots are more than 30 minutes away. Farmers visit these fields only when they think something needs to be done (clearing, tillage, sowing, weeding, or harvesting). As a result, attacks of insects or diseases often aren't noticed until too late.

Village respondents do not know the size of their plots. The estimated 175,000 people on Anjouan divided by 7.7 (average household size) gives 22,727 families. Assuming that half the 42,400 total hectares are arable, we get about 1 ha per family. It is clear that present agricultural practices cannot produce the food needed. Four out of five families (79.8 percent) say they do not produce enough food. They must buy rice with the

money earned from cash crops. Thus, the country imports 90 percent of its rice needs. Decreasing international prices for cloves, vanilla, and ylang-ylang translates into lack of cash and local food shortages.

Farmers describe their plots as "small" (29.0 percent) more often than "large" (13.8 percent). Others describe an average field as between one-fifth and one-fourth hectare. Over half the fields are described as "steep" (22.1 percent) or "very steep" (36.0 percent). Veerkamp interprets "steep" as 40-80 percent and "very steep" as over an 80 percent grade. Soils are described as "brown" (56.8 percent), "stony" (28.7 percent), "heavy clay" (27.4 percent), "red" (24.4 percent), or "recent volcanic ash" (8.3 percent). The brown soils (alfisols) are the better soils and can be found in all regions.

Fencing is unusual (9.3 percent), and it is difficult to find the boundaries of fallow fields. Villagers complain of theft and crop damage by wandering animals, both of which could be controlled to some extent by fencing. Fences are usually built with "pignon d'Inde" (Jatropha curcas) and Gliricidia in contrast to the sandragon (Pterocarpus indicus) common in the M'Remani area.

Most fields surveyed need some form of anti-erosive and soil restoration. Constraints to intervention are the small dispersed plots, the complicated land-tenure system, and the division of labor between men and women (Veerkamp, 1988).

4. Mobilizing Local Organizations

Three existing Anjouan village entities--village elders, men's cultural/folklore organizations, and women's groups --offer potential support for soil conservation activities. How important are such groups? How much support can they offer? And, how can their support be mobilized?

Soil conservation is, inherently, a collective task for the common good, necessitating cooperation among farmers. Two considerations--topographical and social--influence conservation designs. Topographical criteria dictate concentration on contiguous watersheds or hillside segments of watersheds. Social considerations suggest greatest impact where local groups support soil conservation.

The distinction between groups and collectivities is basic to sociology and anthropology. Individuals in collectivities just happen to be together, but group members share values, norms, and interests that shape their behavior. Farmers with contiguous plots on a hillside represent a collectivity. With organization, it can become a group, but this must take place within the existing socio-cultural structure. Thus, social

context has an important impact on project outcome. Two strategies are suggested: selection of favorably disposed groups and development of conservation awareness where it is weak.

a. The Importance of Village Groups

Project interventions are of limited duration. Ultimate sustainability of soil conservation efforts depends on standardizing improved practices into normal village farming procedures. This is why social and cultural factors are so important.

Village elders are socio-cultural authorities whose approval or rejection of project initiatives can strongly influence village cooperation. A minimal project objective should be to obtain their good will and passive acceptance. Elders who enjoy genuine respect could be actively involved, encouraging participation in anti-erosion campaigns, organizing activities such as the collection and redistribution of cuttings for planting, or serving as witnesses to long-term land-use agreements. Religious leaders (not including landed elites) might serve as mediators for land-tenure disputes. Relatively informal approaches to conflict resolution, sanctioned by village elders, might prove more appropriate and effective than the formal, legalistic solutions proposed by FAO consultants.

Men's organizations are important because they encompass almost all village men, the chief decision-makers regarding land use and adoption of new practices. Men also take primary responsibility for cash and tree crops and tend the cows, which are integral to new farming systems currently being tested on Anjouan.

Men's groups usually have a religious orientation, but the Dzindri village group functions as a development committee and has undertaken two projects. For soil conservation efforts, men's groups represent a forum of key farm-level decision-makers in which information can be presented and proposals introduced, discussed and decided upon. Even though concrete interventions may be concentrated on specific hillside sites, the opportunity for more general consciousness-raising through men's organizations should not be neglected.

About one-fourth (23.6 percent) of village women are members of women's groups. There may be several women's groups in one village associated with various mosques. Because custom dictates that women remain silent before their husbands, open communication with women is difficult in mixed groups or even in their fields. Women's groups offer a valuable opportunity for lively discussion with those who bear primary responsibility for cultivating food crops and implementing new practices.

b. Developing Common Interests

Forging cooperation with village organizations requires sensitivity to their values and the development of shared interests. Table 16a outlines values and interests of village group soil conservation projects.

Village elders share concerns for protecting village interests in external disputes, maintaining harmony within the village, promoting village development, and maintaining the respect of villagers. An external project represents an opportunity for village development that can increase that respect.

Men's interests focus on the security and improvement of their family's economic welfare. Even major religious and social considerations translate into economic terms. Thus, projects that improve economic status will be viewed favorably.

Village women are generally concerned with their children's development, including food, clothing, nutrition, health and education. Women's organizations that meet regularly usually focus on sewing, embroidery, and cooking. Larger groups cooperate irregularly on preparations for festivals and celebrations. Women are generally open to learning new skills, and are more likely than men to respond to concerns about soil fertility.

c. A Participatory Approach

Project personnel come to villagers as outsiders. In the Comoran context, project personnel are associated with a particular CADER and benefit or they may suffer from the legacy of relationships between that CADER and the particular village. For acceptance, projects must gain the support of popular village leaders. The popularity of these leaders should be researched to adapt the approach to a particular village. Elders should be approached early, informed and consulted about the project, asked to call a village meeting, and consulted about knowledgeable villagers. In the village meeting, villagers and elders should appoint a steering committee based on project requirements. This approach ensures approval by village elders while placing actual leadership in the hands of respected and knowledgeable villagers. Van Reenan has successfully employed this approach on Anjouan to establish two development committees related to public health.

Table 16a. Major values and interests of village groups and potential role in soil conservation projects

Group	Major Values	Major Interests	Potential Role in Soil Conservation
Village Elders	Village security, development, tradition	External conflicts internal peace, development projects, festivals, respect, power	Support, sanctions, land tenure agreements. Organize cuttings
Men's Cultural/ Folk lore Group	Family security, economic well-being, tradition	Security of land tenure & food production, increased income, earning for pilgrimage, houses & marriages.	Decide on new practices & crops Cultivate tree/ cash crops. Keep cow. Install anti-erosives.
Women's Groups	Family welfare: food, clothing, child welfare, tradition.	Sewing, embroidery, cooking, child's health, nutrition, education, propriety, literacy, social interaction.	Most field work: planting & cultivating food crops. Install anti-erosives.
Soil Conservation Project	Agricultural development	Soil conservation	Leadership, technical knowledge, inputs.

The importance of a participatory approach has been well documented in development literature. Rather than presenting projects as pre-prepared packages, initiatives are raised and recommendations discussed. Participation in decision-making leads to a feeling of "project ownership" necessary for sustainability.

Once initiated in a participatory manner, soil conservation projects can focus on specific sub-groups. If farmers from a particular hillside volunteer to undertake a pilot project, they may form an association as the vehicle for project activities. Ultimately, project personnel will work with families and farmers in their fields.

5. Motivating Participation

Soil conservation projects are not generally popular with villagers, because their benefits are only visible in the long-run. In the short-run, soil conservation projects require significant labor investment and result in little or no increased production. To coincide with village concerns for immediate economic improvement, fertility and income improvement should be emphasized early on, in both the project name and design.

Improving soil fertility is a positive activity that goes beyond conservation. It includes such approaches as intercropping with legumes, crop rotation, green manure, composting, manuring and mixed animal-crop systems. It appeals to village farmers because it promises increased yields. On Anjouan, at Nyumakele CADER, FAO organized a successful soil conservation demonstration last year which utilized the family cow in the rotation scheme to fertilize various segments of the plot.

Farmers are directly motivated by profit. Visible income improvement can be achieved through new cropping patterns that both increase yields and promote soil conservation. Appropriate farming systems must be studied for each situation. On Anjouan, much of the soil erosion problem stems from monocropping upland rice on steep slopes. An alternative, which proved effective at Nyumakele, involves an intercrop of bananas and taro. Project personnel estimate the value of the new crops at five times the previous harvest of upland rice.

Agronomic and sociological implications of such innovations must be discussed with village farmers. Staking the cow in the field and introducing cash crops such as bananas imply the farmer must visit his field daily, a practice not currently followed. Daily visits will allow farmers to more quickly identify problems such as pests and diseases, but may be more difficult when fields are far from the village.

Motivating farmers is easiest when several innovations are introduced simultaneously. Phasing in innovations, beginning with anti-erosion measures, discourages farmers by requiring labor up front without immediate payoff. The Nyumakele project, in one season, built terraces, switched from upland rice to the banana-taro intercrop, included the cow in the rotation system, introduced composting, and fenced fields. Results have been striking and participating farmers are enthusiastic. Neighboring farmers are adopting these measures on their own. Tours of this project should be an effective way to motivate farmers to undertake similar measures in other locations.

D. Cash Crops Pricing and Marketing

Tables 17 and 18 show the quantities, unit prices, and total value of major and minor agricultural export products, for the period 1968 through 1987. As can be seen, a wide variety of crops was exported in the 1960s and 1970s. Currently, four crops, vanilla, cloves, ylang-ylang, and copra, comprise 99 percent of all exports, agricultural and non-agricultural.

Approximately 40,000 ha are devoted to the four major cash crops. However, these crops are not spread evenly over the islands (see table 19). Anjouan, for example, has 21 percent of all land with agricultural potential; but Anjouan has 21 percent of all vanilla, 28 percent of all coconuts, 43 percent of ylang-ylang trees, and as much as 70 percent of all cloves. Grande Comore has 66 percent of agricultural land, slightly fewer coconuts and ylang-ylang than it should and slightly more vanilla. Finally, Moheli, with 13 percent of all agricultural land, produces only 5 percent of all ylang-ylang, 3 percent of all vanilla, but 25 percent of all coconuts. It is unclear why these differences exist. LaCharme (1985) suggests that Grande Comore produces more vanilla than other islands because the type of soil necessary for vanilla is more prevalent there.

1. Ylang-ylang

The Comoros produce 80 percent of the world's ylang-ylang. Madagascar produces the rest. Ylang-ylang was introduced as a plantation crop and although much is still grown on large plantations, 60 percent is now grown by small holders. Ylang-ylang is almost always grown in plantations. It does well on poor soil and can be planted on steep slopes. The trees begin to produce at 5 or 6 years of age and produce the equivalent of 1.1 to 1.4 tons of flowers per hectare. Production declines after about 20 years. The ylang-ylang on the Comoros are mostly between 30 and 40 years old, and it is said that the quality of the oil produced is not as high as it could be. This is evidenced by the large percentage of oil falling in the third-quality class, although this is mostly due to poor processing technique.

There is a certain amount of substitutability between ylang-ylang and cananga and synthetic oils. However ylang-ylang is still preferred, especially for use in higher-value products. Ylang-ylang enjoys certain advantages that vanilla and cloves do not. Demand has been constant over recent years as have prices. It is said that there have been shortages and more ylang-ylang could have been sold.

France is the only buyer of ylang-ylang. This means the price is always denominated in French francs and there is no fluctuation.

Table 17. Quantities, unit prices, and values of major export crops. 1968 - 1977.
Value in millions of francs.

	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
Vanilla										
Volume, tons	138.4	207.1	143.7	206.7	207.0	34.3	160.5	210.9	124.1	230.4
Price/ton, CF x 1000	2524	2790	2805	2932	2965	2915	2947	3267	3748	4707
Price/ton, $US x 1000										
Value, CF x 1000000	349.3	577.9	403.1	605.9	613.8	100.1	472.9	689.0	464.9	1084.6
Cloves										
Volume, tons	88.6	87.4	277.4	373.0	202.6	120.6	248.5	561.9	880.2	219.9
Price/ton, CF x 1000	282	671	803	720	815	727	975	1043	923	1338
Price/ton, $US x 1000										
Value, CF x 1000000	25.0	58.6	222.7	268.4	165.1	87.7	242.3	585.9	812.0	294.1
Ylang-ylang										
Volume, tons	73.0	67.7	70.7	67.3	99.2	99.9	99.3	60.0	73.2	59.9
Price/ton, CF x 1000	5067	5026	4745	5232	5049	5701	7908	8568	8448	9783
Price/ton, $US x 1000										
Value, CF x 1000000	370.0	340.1	335.6	352.3	500.9	569.4	785.2	514.3	618.0	586.0
Copra										
Volume, tons	4152.9	5265.5	4371.0	3988.4	2423.5	4890.3	4178.1	1259.6	2322.6	1317.2
Price/ton, CF x 1000	42	40	45	52	37	47	119	74	53	101
Price/ton, $US x 1000										
Value, CF x 1000000	176.4	211.6	197.6	206.5	90.4	229.6	495.9	92.6	122.7	133.4
Other										
Value, CF x 1000000	87.3	100.5	118.6	139.0	139.8	119.0	125.1	82.8	80.4	26.6
Total										
Value, CF x 1000000	1008.0	1288.7	1277.6	1572.1	1510.0	1105.8	2121.4	1964.6	2098.0	2124.7

Exchange rate, $/CF

Table 17a. Quantities, unit prices, and values of major export crops. 1978 - 1987.
Value in millions of francs.

	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
Vanilla										
Volume, tons	116.9	167.5	12.9	160	259	177	26	181	258	64
Price/ton, CF x 1000	6299	13562	14969	13556	16220	20011	22577	25906	21054	20000
Price/ton, $US x 1000				49.9	49.3	52.4	50.3	57.8		
Value, CF x 1000000	736.3	2271.7	193.1	2169	4201	3542	587	4689	5432	1272
Cloves										
Volume, tons	396.6	333.7	816.3	929	585	1134	1089	1118	788	1970
Price/ton, CF x 1000	1164	1277	2386	1860	2518	2805	1675	1231	1038	787
Price/ton, $US x 1000				6.8	7.7	7.3	3.7	2.7		
Value, CF x 1000000	461.8	426	1947.3	1728	1473	3181	1824	1376	818	1552
Ylang-ylang										
Volume, tons	61	60.5	30.8	40	63	49	51	61	60	54
Price/ton, CF x 1000	10776	10730	12827	11325	11349	11388	11392	10770	10533	10925
Price/ton, $US x 1000				41.7	34.5	29.8	25.4	24.0		
Value, CF x 1000000	657.9	650.2	395.7	453	715	557	581	657	632	590
Copra										
Volume, tons	2060.5	2291.7	774.7	1021	195	687	490	651	29	
Price/ton, CF x 1000	100	113	109	76.4	97.4	93.2	93.9	99.8		
Price/ton, $US x 1000				0.28	0.30	0.24	0.21	0.22		
Value, CF x 1000000	205.1	259.2	84.7	78	19	64	46	65	29	
Other										
Value, CF x 1000000				33	27	74	41	261	69	70
Total										
Value, CF x 1000000				4461.0	6435.0	7418.0	3079.0	7048.0	6980.0	3484.0
Exchange rate, $/CF				272	328	380	446	449		

Table 18. Quantities, unit prices, and values of minor export crops. 1968 - 1977. Value in millions of francs.

	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
Major crops										
Value, CF x 1000000	920.7	1188.2	1159	1433.1	1370.2	986.8	1996.3	1881.8	2017.6	2098.1
Essence of jasmine										
Volume, kilograms	298	355	257	239	232	176	204	134	27	..
Price/ton, CF x 1000	85906	82817	70039	69874	68103	70455	81863	196269	203704	
Price/ton, $US x 1000	-	-	-	-	-	-	-	-	-	-
Value, CF x 1000000	25.6	29.4	18.0	16.7	15.8	12.4	16.7	26.3	5.5	..
Essence of basil										
Volume, kilograms	2356	1111	2995	6497	2156	903	1760	1389	1119	..
Price/ton, CF x 1000	5093	4950	6578	7511	6725	5205	9091	14615	12958	
Price/ton, $US x 1000	-	-	-	-	-	-	-	-	-	-
Value, CF x 1000000	12.0	5.5	19.7	48.8	14.5	4.7	16.0	20.3	14.5	..
Essence of palmarosa										
Volume, kilograms	886	810	1080	1015	978	1547	1201	408	735	..
Price/ton, CF x 1000	4402	4691	5000	4729	4397	3491	5246	7353	4762	
Price/ton, $US x 1000	-	-	-	-	-	-	-	-	-	-
Value, CF x 1000000	3.9	3.8	5.4	4.8	4.3	5.4	6.3	3.0	3.5	..
Other essences										
Volume, kilograms	757	874	428	661	770	1339	812	232	414	..
Price/ton, CF x 1000	-	-	-	-	-	-	-	-	-	-
Price/ton, $US x 1000	-	-	-	-	-	-	-	-	-	-
Value, CF x 1000000	7.7	8.1	6.6	10.1	12.0	25.6	31.2	2.8	14.7	..
Sisal										
Volume, tons	355.4	217.6	194.5	86.9	-	-	-	-	-	-
Price/ton, CF x 1000	28	35	32	33						
Price/ton, $US x 1000	-	-	-	-	-	-	-	-	-	-
Value, CF x 1000000	9.8	7.6	6.3	2.9	-	-	-	-	-	-
Cocoa										
Volume, tons	42.0	50.9	48.1	16.0	49.7	19.3	38.5	21.0	10.7	12.0
Price/ton, CF x 1000	205	222	179	138	115	156	364	286	477	808
Price/ton, $US x 1000	-	-	-	-	-	-	-	-	-	-
Value, CF x 1000000	8.6	11.3	8.6	2.2	5.7	3.0	14.0	6.0	5.1	9.7
Coffee										
Volume, tons	39.1	42.8	102.7	73.0	101.5	42.4	38.2	60.9	31.7	18.2
Price/ton, CF x 1000	164	180	220	211	213	215	244	230	549	924
Price/ton, $US x 1000	-	-	-	-	-	-	-	-	-	-
Value, CF x 1000000	6.4	7.7	22.6	15.4	21.6	9.1	9.3	14.0	17.4	16.9
Cinnamon										
Volume, tons	34.1	68.1	119.3	163.6	298.9	209.2	105.5	9.5	1.5	..
Price/ton, CF x 1000	105	214	155	160	176	215	235	220	267	
Price/ton, $US x 1000	-	-	-	-	-	-	-	-	-	-
Value, CF x 1000000	3.6	14.6	18.6	26.1	52.6	45.0	24.8	2.1	0.4	..
Non-agricultural products										
Value, CF x 1000000	9.7	12.5	12.8	12	13.3	13.8	6.8	8.3	19.3	
Total Domestic Exports										
Value, CF x 1000000	1008.0	1288.7	1277.6	1572.1	1510.0	1105.8	2121.4	1964.6	2098.0	2124.7

Source: Service des Douanes, Ministere des Finances. Cited in World Bank. 1979. The Comoros. Problems and prospects of a small, island economy.

Notice on table 17 that ylang-ylang exports dropped 10 percent in 1987. This was not due to a weakening of the international market, which has been consistent over the years, or to farmers destroying their trees. It was caused by bad weather and a consequent decrease in harvests (Banque Central, 1988).

Table 19. Land devoted to major cash crops in 1980, by island.

	Comore	Anjouan	Moheli	Total
Ylang-ylang				
number of trees	600,000	500,000	60,000	1,160,000
ha equivalent	1,500	1,250	150	2,900
percent	52	43	5	100
Vanilla				
number of vines	3,790,000	1,025,000	164,000	4,979,000
ha equivalent	1,900	510	80	2,490
percent	76	21	3	100
Cloves				
number of trees				
ha equivalent				3,300
Coconut				
number of trees	787,000	460,000	415,000	1,662,000
ha equivalent	14,200	8,300	7,500	30,000
percent	47	28	25	100
Land with ag potential				
land area (ha)	63,675	19,930	12,930	96,535
percent	66	21	13	100

There has been concern that farmers are cutting ylang-ylang trees to plant food crops. No formal surveys have determined whether this is true. One view is that farmers did indeed cut some trees a few years ago in response to somewhat lower prices. However, the number was minimal and farmers are again planting ylang-ylang to increase production. A second view is that farmers have not cut any trees. The third view, perhaps the most interesting, suggest that farmers have cut almost 70 percent of all ylang-ylang. This is not seen as bad because oil production has not fallen despite the decreased land planted to ylang-ylang. There are two explanations to this: first, the remaining ylang-ylang is more intensively managed and production per tree is higher. Second, processors are more efficient in distilling oil from the flowers, and it takes fewer flowers to produce the same amount of oil. Since world demand has been relatively constant

and is likely to remain so, there is no reason to increase national production.

2. Vanilla

The Comoros is the world's second or third largest producer of vanilla (see table 20). As was seen above, vanilla is probably the Comoros' most important export crop. It is produced by a large number of small farmers mostly on Grande Comore, which produces about 70 percent of the country's vanilla. The vanilla vines are generally planted in rows between other crops, often at elevations not exceeding 400 meters. The vines produce for about six years beginning the third year. Production on Anjouan is only 15-20 tons annually since the proper soil is not common there.

LaCharme (1984) gives an excellent review of the production, processing, and marketing of vanilla on the island of Grande Comore. Much of this section comes from his report.

Madagascar is the largest producer of vanilla in the world. The Comoros and Indonesia are the next largest producers with Indonesia exporting slightly more than the Comoros in recent years. Neighboring Reunion also produces small quantities. In 1984, Madagascar, the Comoros, and Reunion, which together produced about 85 percent of the world supply of vanilla, negotiated an agreement at Nossy Be (Madagascar) between themselves and major vanilla importers. The agreement established the price of vanilla and the amount each country would produce for a period of three years. The Comoros' quota was 150 tons from April to December 1984, and 240 tons from January 1985 to March 1986. The floor price was fixed at $69.50 per kilogram until March 1986.

This was considered a high price for vanilla and was seen as an advantage. However, because of the price increase, importers reduced imports in 1984 and inventories. In addition, exporters were reluctant to ship their vanilla at the time because the value of the dollar was increasing so rapidly. Although the dollar price was fixed, any delay in the sale of vanilla would mean a higher price in Comoran francs. The combined effect was that vanilla exports were considerably reduced in 1984.

Once the dollar started to depreciate against other currencies, the value of vanilla in Comoran francs began to fall, even though the dollar value remained unchanged. In 1985 the FOB price was 25,900 CF. In 1986 it had fallen to 21,095 CF and in 1987 it had dropped even farther to 20,000 CF.

In April 1987, the vanilla agreement was renegotiated for another three years. The price rose from the previous $69.50/kg to $72.00/kg. However, even though importers have agreed to the

Table 20. Vanilla exports by country of origin. In tons.

	1978	1979	1980	1981	1982	1983	1984	1985	1986
Comoro Islands	240	170	13	160	259	177	26	181	150
French Polynesia	3	3	2	1	1	6	2	3	4
Indonesia	389	17	77	138	115	234	154	190	298
Malagasy Republic	1469	437	410	713	1060	1099	826	710	940
Mexico	2	1	*	*	*	1	24	3	2
Reunion	9	23	8	15	11	9	19	28	21
Total	2112	651	510	1027	1446	1526	1051	1115	1415
Comoros, % of total	11	26	3	16	18	12	2	16	11

Source: USDA Foreign Agricultural Service. 1988. U.S. Spice Trade. Circular Series FTEA 1
* signifies information unavailable.

relatively high prices, they often request a 10 to 15 percent discount.

Vanilla also suffers from a stiff competition from synthetic vanillin. European demand for vanilla decreased from 650 tons in 1978 to 400 tons in 1985 reportedly because vanillin is available in France for 60 FF/kg while natural vanilla costs 600 FF/kg. However, in the U.S., the demand for natural vanilla is strong and expanding. In 1987 the U.S. imported 1,300 tons of vanilla, up from 1,000 tons in 1986. This occurred in spite of the fact that vanillin already accounts for 90 percent of the total U.S. market (USDA, 1988).

There is likely to be increased competition as other countries are promoting vanilla as an export crop. According to LaCharme, La Reunion planned on increasing production from 15-20 tons in 1983 to 75 tons in 1987. Guadeloupe expected to produce 25 tons by 1986 and Tahiti hopes to produce 200 tons by 1990. However, U.S. Department of Agriculture (USDA) trade figures show that these countries are not yet producing such quantities. While the potential to increase exports seems limited, the possibility of increasing the quality of exports through more careful processing exists.

In the mid 1970s, vanilla from the Comoros was reputed to be of high quality. Recently, however, that reputation has suffered, particularly in 1983 when the crop was harvested prematurely. Following a disastrous season in 1984, the government made a serious effort to control the quality of vanilla. Processing plants were inspected for quality control, theft was discouraged, and the product was inspected to ensure immature beans were not being sold.

Almost all vanilla is purchased with money advanced to buyers and processors by exporters. These exporters have access to credit with the Banque Internationale des Comores (BIC). It seems that only they are allowed to apply for this type of credit. This prevents buyers and processors from negotiating with exporters because they cannot function without credit advances. Once they accept the advance, they must continue to work with that exporter. In fact, processors never know how much they will receive for their vanilla until as much as six months after it is delivered to the exporter. (This may have something to do with waiting to know the exact exchange rate at which the vanilla is finally sold.)

Each year the government announces the floor price for vanilla for the upcoming season. In 1984 the official price was 2000 CF/kg while the actual price paid was 3500 CF/kg. In 1985 the official price decreased to 1750 CF/kg only to come back to 2000 CF/kg in 1986. The actual price in 1986 paid to producers

was 2500 CF/kg. In theory, the variation in the producer price should only change with the exchange rate from year to year.

There are five exporters licensed to export vanilla: les etabilissements Kalpane, les etabilissements Abdallah fils, les etabilissements Mohamed Ahmed, la societe Comores Bambao, and la societe Mamadally (on Anjouan only). The first three of these export five-sixths of the total.

There are only about ten processors on Anjouan, where processing techniques are much closer to what is recommended. However, quality still suffers because vanilla beans are harvested before they are ripe. On Moheli there is only one exporter producing small quantities. Since this exporter has no competition, he can control the harvest and processing to a greater extent. Moheli produces high-quality vanilla.

The export tax on vanilla is 20 percent of FOB price. The price control board exacts a 1,000 CF/kg tax on all exports. The Chamber of Commerce receives 0.5 percent of FOB value less taxes. In 1983, the FOB price of vanilla was about 27,000 CF/kg (approximately $70 at 430 CF/$). Taxes amount to 6,000 + 1,000 + 150 = 7,150 CF/kg. Exporters receive 19,850 CF/kg while processors receive 16,500 CF.

As is true for ylang-ylang, the variation in export figures from year to year is not all due to the international market. In 1986 the production of green vanilla beans was 750 tons, down approximately 20 percent from previous years. Actual production is expected to fall from 200 tons of processed vanilla in 1987 to 170 tons in 1988 (Banque Centrale des Comores, 1988). (The curing process transforms 5 kg of green vanilla beans into 1 kg of processed vanilla, on average.) This is a 15 percent drop in production that eventually will show up as a reduction in exports, but that should not be attributed to the international market.

There are also changes in stock to be considered. The vanilla exported in 1986 (257.5 tons) was all 1985 production plus half what was produced in 1986. Exports in 1987 were 63.2 tons. This low level of exports was due to a series of "blunders" on the part of the government, according to a former government official.

The first mistake was that the Comores did not send a representative to the annual price and quota negotiations in Madagascar in early 1987. Representatives from Madagascar supposedly assumed the Comoros had already negotiated with importers. Based on this assumption, Madagascar negotiated sales "under the table" at 10 percent below the established price. It took the Comoros several months to realize they were not making sales. Buyers came late in the year offering to purchase the

entire stock with a 10 percent rebate. In retrospect, this was a good offer that should have been accepted. It wasn't. Later offers were for limited quantities and with a 15 percent rebate. As a result, very little vanilla was sold in 1987 because the government officials who could authorize the sale of vanilla did not understand what was happening on the international market.

3. Cloves

Anjouan produces about 70 percent of the cloves produced in the Comoros. Clove trees are generally scattered around the farm although about 10 percent of all trees are found in dense plantations. The large plantations are found when a single landowner has 20 to 50 ha planted to cloves. Small landowners do not plant dense stands. The clove begins producing after about 5 years. However, for best long-term production, trees should not be harvested before 8 to 10 years. The economic life of a clove tree is about 75 years. Yields are approximately 300 kg of dry cloves per hectare. The yields are cyclical, with good crops occurring every 3 to 5 years. One problem is that harvesters climb the tree to pick the flower buds and often break branches. It would be better to use ladders.

The Comoros' clove exports have decreased because of increased world supply. Many other countries are increasing production, especially Indonesia and Brazil (see table 21). The producer price for cloves was 500 CF/kg in 1987 (Banque Centrale des Comores, 1988), down from 2000 CF/kg in earlier years. The increase in world supply seriously hampers the Comoros' ability to export. Future volumes and unit values of clove exports will surely remain lower than in the past.

4. Coconuts

Coconuts cover approximately 30,000 ha or 35 percent of all agricultural land. They are found in the coastal areas surrounding each island, mostly below 400 meters altitude. Production in 1970 was about 75 million nuts of which one-third were destroyed by rats. In the early 1970s about one-third of the nuts were exported. Now, the domestic demand has increased and exports have fallen. The Central Bank reports that soap manufacture uses as much as 700 of the 1000-ton annual production. There are two firms producing soap with coconut oil. Fidali soap has been manufactured by the Fidali family for 20 years, and is estimated to have about 60 percent of the market. The Salimamoud family has recently begun manufacturing Naziko soap, said by some Comorans to be of poorer quality.

By early 1988, the international price for copra increased from $260/ton to $385/ton. Because of this increase, some copra was again being exported in the beginning of the year.

Table 21. Clove exports by country of origin. In tons.

	1978	1979	1980	1981	1982	1983	1984	1985	1986
Malagasy Republic	14767	13513	4360	9308	9444	1972	6268	11500	*
Sri Lanka	471	793	1208	1356	977	1774	968	295	740
Tanzania	1238	5513	5317	6111	5652	1008	2185	8927	*
Brazil	479	221	280	1090	608	1380	2000	2282	*
Comoros Islands	*	*	818	949	585	1134	1089	1085	*
Indonesia	16	17	40	51	81	342	861	60	725
Total	16971	20057	12023	18865	17347	7610	13371	24149	1465
Comoros, % of total	*	*	7	5	3	15	8	4	*

Source: USDA Foreign Agricultural Service. 1988. U.S. Spice Trade. Circular Series FTEA 1
* signifies information unavailable.

5. Other crops

As mentioned earlier, the Comoros must attempt to increase agricultural export earnings. While the potential for expanded earnings from ylang-ylang, vanilla, and cloves is small, very little is known about the potential for exporting other crops. References are made to one crop or another but little data is available. The production potential for pepper, coffee, and cacao can be gauged by estimates of the number of trees still existing (see table 14).

a. Coffee

The country exported 26 tons of coffee in 1984, 8 tons in 1985, and 30 tons in 1986. There is now a small company in Moroni which roasts and grinds locally-produced coffee. Production in the first year was just under 4 tons. Given efforts already made by the company to increase sales, it is unlikely that sales will increase beyond this level.

b. Pepper

Ambrosino (1986) reports in a marketing study that pepper would be exported in 1987. An exporter had already purchased a bagging machine.

c. Cocoa

There is very little cocoa produced in the Comoros. In the past, a unique variety was exported each year to a ready market in small quantities. The decline in production came about because of a change in land ownership. Most cocoa was grown in plantations on land controlled by foreign companies. When these companies left the Comoros, the land was taken over by small farmers interested in producing food crops for home consumption so the cocoa trees were cut down.

d. Fruit and Vegetables

Many reports discuss the possibility of developing new crops for export. In general, the suggestions are limited to fresh fruits and vegetables to be exported by air to Europe and the Middle East. Fruit commonly mentioned are litchi, mango, and papaya. There have also been suggestions to examine the feasibility of exporting two varieties of flowers that grow naturally in the Comoros.

In the past year the Service de la Commercialisation has sent three shipments of litchis to Europe to test the market. The litchis were harvested the day of shipment, packed in containers provided for the purpose by FAO, and shipped to Belgium on Air France at a 50 percent preferential tariff. They

were received by a fruit and vegetable broker who had agreed in advance to purchase them. The litchis were purchased for 300 CF near Moroni and sold for the equivalent of 1,300 CF in Belgium. These sales, which represented 300 kg, 380 kg, and 200 kg of litchis respectively, were judged as evidence that litchis can be exported to Europe. [Note: Another observer of the same events reports the experiment was unsuccessful. This is another example of conflicting reports on a number of issues examined by the consultants.]

Large quantities of unused fruit in the Comoros could be used in the production of juice, jams, and jellies. Examples are mangos, guava, and papaya, all of which are said to grow everywhere on the islands. There is a strong international market for mango paste, for instance.

In addition to the possibilities for exporting agricultural crops, several studies show that domestic demand for fresh fruits and vegetables is far from being met. Ambrosino discusses the success of a cooperative on Moheli which is shipping foodstuffs to Moroni on an irregular basis. This cooperative was created with the help of a French volunteer to produce fresh vegetables for the Moheli market at a time when there were none. The cooperative was successful and now export a variety of foods to both Anjouan and Grande Comore.

There are reports of a Comoran businessman who attempted to organize sales of fresh fruits and vegetables to passing oil tankers. Although the demand was strong, he was unable to organize producers to have a consistent supply.

6. Possible Actions

There are several types of action that might be taken to help the agricultural export sector develop: increase production efficiency, increase market efficiency, and gain access to new markets. Increasing production efficiency would most easily fit into the CARE project as it exists today. This would require a change in emphasis from erosion control to fertility enhancement, improved cultural techniques, and changing the mix of crops. What each of these actions does is raise the productive value of the land and make it worth protecting (assuming secure tenure, adequate supply of labor, etc). It should not be a problem to introduce these ideas into the new project. Indeed, if they were, the new project may be indistinguishable from the old. It would merely be a change in emphasis. This is not to imply that CARE is not concerned about these things, in general. We are considering here the emphasis put on cash crops, specifically.

Increasing market efficiency makes it easier for existing producers and consumers to get together. Recent road-building

projects have done much to reduce transportation costs and make it easier to get produce to urban markets. However, most projects to date have been of primary roads that circle the islands, not secondary and tertiary roads leading into the interior. There are still great quantities of foodstuffs that could be marketed if there were roads.

In addition to physical improvements, there are organizational improvements that can be made. A good example is the cooperative on Moheli, which allows island producers to export food from Moheli to Anjouan and Grande Comore even though maritime transport is a problem.

Gaining access to new markets is a two-part process of identifying existing demand and then making the commitment necessary to satisfy it. Below are actions that might be considered in the design of the new project.

o Inventory existing potential for export crops. This has several aspects. First, one should inventory crops which have traditionally been exported and for which international markets still exist. Crops like coffee, cacao, and cinnamon, for example, could be exported at any time the world market price is high enough.

Fruit trees should be inventoried to determine the potential supply of fruit for both the international fresh fruit markets and for a small processing facility. There is also the potential for considerable increase in sales in urban areas. In the international fresh fruit market, one must carefully consider whether the varieties existing on the Comoros would be accepted by European or Arab consumers. It is possible that while litchis would be accepted, mangos or papayas would not.

o Determine which fruits and vegetables demanded on the international market could be produced on the Comoros. For instance, the Francik mango is exported to the U.S. from Haiti. Annual exports expanded rapidly to $8 million in only five years. This mango can be grown on other Caribbean islands but never has the same taste and therefore can be commercially produced only in Haiti.

o Organize marketing cooperatives. The inter-island and intra-island markets are poorly organized. Certain areas produce surpluses while other areas have unmet demand. There is no group of merchants dealing in food. Studies have shown that the markets are inefficient for lack of credit and transport. Reports indicate a boat travels between the islands but Comorans say there is no regular service. A small fleet of "boutres"--small boats which can transport about seven tons of cargo--are considered neither safe or reliable. Nor do they work on any kind of schedule. Maritime transport is a highly-regulated

industry in the Comoros. It would be difficult to obtain a license to operate an inter-island boat.

o Organize producer cooperatives to supply certain markets (either public markets or hotels and restaurants) with a regular supply of high-quality produce. The new hotel under construction on the north side of Grande Comore is said to need 1.6 tons of fresh fruit and vegetables each week. Management plans to purchase this entire amount in South Africa because there is no supply in the Comoros. A cooperative of gardeners could easily satisfy some, if not all, of demand. (Normally a cooperative would not be necessary to supply the Moroni market, for example. In this case, however, hotel management would expect a regular supply of produce. This would require coordination among individual producers.)

o Encourage farmers to produce a variety of cash crops rather than just one or two. Farmers who do so can take advantage of the benefits associated with portfolio management. While the prices of some crops go down, others will go up. On average, the farmer will always be able to sell some crop and receive a relatively stable income.

The Director of Societe Bambao has suggested that farmers change their thinking. They should be willing to change crops relatively quickly. For instance, Bambao has been producing basil oil for the past few years and more and more farmers are beginning to do so. However, the market is limited and it is likely that Bambao will begin to produce more than it can sell. At the same time, Bambao has received requests for palmarosa oil. The prices are good and it is likely that demand will remain strong for several years. Since it takes only three months to begin palmarosa production, farmers could easily shift from basil to palmarosa. The Director of Bambao feels that farmers will continue to plant basil until they will find it hard to sell. Finally, farmers will begin to plant palmarosa when demand begins to decrease. He suggests that the CADER system be prepared to inform farmers of the changes in demand and that farmers be accustomed to the idea of changing crops every three to six years. For many crops, such as cloves, this is not possible but for others it is.

E. CEFADER Capacities

1. Planning, Evaluation, and Monitoring

The planning section of CEFADER was formed in 1984 with technical assistance from the World Bank Rural Services Project. The duties of the section were planning, programming, follow-up evaluation, and the collection, processing and distribution of data. CEFADER has only two people qualified to handle the duties of planning, evaluating, and monitoring. The Direction de la

Programmation et des Enquetes has an expatriate director and a Comoran Chef de Service de la Programmation. The Comoran has less than two years experience and it is not clear if he received much on-the-job training during that time. There are no personnel overseas receiving training, and no personnel in other Directions of CEFADER with the training necessary to do planning or evaluation.

With limited personnel, the Direction de la Programmation cannot hope to accomplish the many responsibilities assigned to it. In addition to planning, it is responsible for monitoring projects, and helping each CADER prepare an annual work plan and operating budget. It then prepares an overall CEFADER budget and plan of work. Annual reports also are issued but none were reviewed for this report.

2. Financial Management

As was explained above, about 90 percent of the combined CEFADER/CADER budget is handled by donors. Funds are disbursed and accounted for by expatriate project personnel. This is likely to remain the case for some time. The amount contributed by the government is a small portion of the total. CEFADER/CADER managers have few funds to work with. Many observers feel that if CADER directors were given a budget to work with, for instance, they would almost surely have to use project funds to finance non-project activities, i.e, legitimate activities for which they are responsible but for which there are no dedicated funds.

A number of revolving funds are being established by various projects. When a project that initiated an activity ends, a revolving fund will be available, providing a source of funds to allow the activity to continue. It is not certain whether any of these funds have yet been turned over to CEFADER/CADER managers.

3. Policy Formulation

The formulation of policy is the responsibility of the Conseil de Direction, which consists of the Director General, his three Directors, and their advisors. It is said that this committee meets irregularly and is not active in policy formulation. Planning at CEFADER also is inhibited because the government has no national development plan. There was a four-year plan for the period 1983 to 1986 but no plan for the current period has been issued.

4. Recommendations

CEFADER would benefit from technical assistance in the Direction de la Programmation. REDSO should consider funding

long-term technical assistants to work in CEFADER whose major duties would be to show Comorans how to plan, evaluate, and monitor. The Director of CEFADER agrees that this is a most pressing need at this time. He also agrees that it would not be advisable to bring in an expatriate advisor until after two or three qualified Comorans are recruited and attached to the Direction. Planning will not be a priority because CEFADER will have a national agricultural strategy prepared under UNDP funding within a year.

If REDSO agrees to fund such an advisor, formal overseas training should be included in the budget as well. The Comoran planning staff should be allowed to attend one- to three-month training courses in Senegal, Ivory Coast, or other Francophone African countries. These study courses sould not be authorized until after the Comoran has had significant practical experience within CEFADER.

REDSO should consider financing a series of short-term policy analysis consultancies. Possible areas of study are deregulation of the transport industry, price stabilization for export crops, and small industry-enterprise regulation. The emphasis should be on opening discussions with ministerial level government officials on issues affecting agricultural development.

F. Support for the National Agricultural School at Wawani, Moheli

1. History and Operational Difficulties

The Ecole Nationale d'Agriculture (ENA) at Wawani on Moheli began operation in January 1987. The first class of 30 students began at that time and 27 graduated in July 1988. The second class, consisting of 20 students, began studying in January 1988 and is now half-way through the 18-month program. The first two years have not been without problems.

The World Bank designed a project with the Ministry of Education to finance the construction and operation of an agricultural school on Moheli. According to a CECI representative, the project was to be financed 75 percent by the Bank, for construction and equipment, and 25 percent by the Comoran government, for operating costs. However, once the school was built, it was determined that the government could not pay its share. The Bank agreed to contribute 80 percent of those costs through its Rural Services Project, while the government would pay the 20 percent remaining. In the meantime, CECI had offered to provide three volunteers as fulltime, resident instructors. After contacting CECI to confirm this, the Bank authorized the payment of operating costs for the first year.

Since the project was first situated in the Ministry of Education, it had to be transferred to the Ministry of Agriculture. There were problems with the transfer of material and equipment to the school. For these reasons the World Bank decided to delay disbursement of funds until the two ministries straightened out their difficulties.

By the second year of operations the Bank had advanced funds to the school. These funds were deposited with the treasury. When the school needed to spend, money was not always immediately available. There were often lags of two and three months between the time the money was needed and the time it was actually available. Checks could be issued from the treasury to pay for expenses, but those accepting treasury checks would often be unable to cash them for months. It was difficult, therefore, for the school to purchase the goods and services it needed because treasury checks were often refused as payment.

Several months ago the Bank stopped contributing to ENA because the government was not paying its share of costs. The Bank has since concluded it will make no further contributions to the operating costs of the school. It is willing, however, to finance an expatriate instructor if operating funds can be guaranteed.

The students who graduated in July have all been assigned to CADERs. Some were assigned to CADERs which were not yet fully staffed and some to positions held by "unqualified" personnel. A survey of CADER extension agents showed that a high percentage were "unqualified" and unable to perform the duties required of them. Agents were evaluated by their supervisors and given written tests. In March 1988, the Minister of Production signed an administrative order laying off 32 agents assigned to CADERs on Grande Comore who had received less than a 50 percent rating on the evaluation. Five agents on Moheli also were dismissed. Evaluations have not yet begun on Anjouan but will as soon as logistic problems are solved.

2. Course of Study

An 18-month course of study prepared for ENA after careful consideration of the duties and responsibilities of a CADER extension agent has been followed since the school opened. In February 1988 a meeting was held in Moroni to discuss the ENA curriculum. The meeting was attended by those responsible for training extension agents at ENA and those in the CADERs who would eventually employ their services. There were four major recommendations.

- The first internship in the CADER should be replaced by an exercise on Moheli, supervised by ENA instructors.

- CADERs hosting interns should clarify the purpose and objectives of each internship. CADER personnel should be more involved in the supervision and training of interns.

- The calendar should be changed slightly so internships coincide more closely with important agricultural activities.

- Those seeking admission to ENA must first spend six months in a CADER before being allowed to take the entrance exam.

It seems that many students in the first class requested scholarships for additional training overseas. They did not realize that the purpose for the class was to enable them to work in the CADERs. Prospective candidates now will be required to spend six months in a CADER, which will help weed out those who have difficulty working with peasants and living in rural areas.

The only significant change in the coursework will be a greater emphasis on communicating effectively. CEFADER has requested that France provide a communications instructor and the request has been granted. It is not clear whether this will be a permanent or short-term position.

CECI will continue to provide volunteer instructors to ENA. During the first 18 months, there were three Canadian instructors, two agronomists, and one economist. In addition, the wife of one volunteer taught a course in nutrition. There were no other permanent resident instructors. Courses not offered by these instructors were to be taught by CEFADER/CADER personnel over one or two weeks, but it has not been easy for CEFADER/CADER personnel to make themselves available. The two Canadian agronomists have returned to Canada while the economist will remain at ENA for another year. No additional volunteers will be recruited until CECI is assured that operating costs will be available.

3. Possibilities for Intervention

There are a number of types of assistance CARE/USAID could provide. Each is discussed below. Of all these possibilities, the first requires the most immediate attention. We recommend that REDSO approve a $20,000 subgrant to ENA within the next month. We also recommend that CARE include items b, c, and d (below) as a formal part of their work plans. These recommendations can be implemented with no additional inputs and can have a positive impact on the training of extension agents. It is further recommended that if CARE decides to adopt recommendations b, c, and d, they should inform other

international organizations of their intent and encourage them to do likewise.

a. Pay operating costs. It is unlikely the government will be able to pay ENA operating expenses, given its numerous other obligations and the low revenues expected over the next few years. CARE could pay for specific operating expenses. Total ENA operating expenses are estimated to be $20,000 p year. In the past, the World Bank contributed 500,000 CF per month to cover operating costs and, according to the Chef du Service Formation, this amount was adequate. Any contribution should be in the form of a subgrant from CARE to ENA, to be administered by CECI.

According to recent CARE budget exercises, $20,000 could easily be made available for Moheli. If CARE were to make this money available to ENA through CECI, the school would benefit in many ways. First, it would receive operating funds for one year. Second, it would receive three additional instructors, two CECI volunteers and one World Bank-financed instructor. Third, if a non-Canadian donor, such as CARE, were to finance a CECI project such as ENA, CECI can obtain matching funds from the Canadian government. Thus, a $20,000 subgrant to ENA will assure at least two years' operating expenses and a full faculty.

b. Provide short-term instructors from the outside or, preferably, from the resident CARE staff. CARE will continue to have two long-term staff on Anjouan. Either should be qualified to teach all or, more likely, part of a course in erosion control, extension methods, or a number of other subjects. This would require that the CARE staff member be free for one or two weeks. A certain amount of preparation time would also be required.

It is possible that as more extension agents graduate from ENA and are assigned to CARE CADERs, the amount of training done in the CADERs will change. (The type of training will surely change from the general to the specific.) As CARE's training component is reduced in the CADER, it could be increased at ENA. This is an excellent way to continue efforts to train Comorans.

Some may say that if a CARE staff member goes to Moheli, the Anjouan project will suffer. If this is so, CARE could bring someone in from the outside to teach at Moheli or, preferably, to help out on Anjouan, freeing resident CARE personnel to teach at ENA. (CARE staff is large enough world-wide to enable it to assign someone to the Comoros for a short period.)

c. Agree to supervise and give meaningful work to student interns. Many agricultural schools in Africa have internship programs. One of the major concerns of school staff is to find technicians willing to devote time and energy to make

the internship worthwhile. This would require minimal CARE time and resources.

d. Collaborate with instructors experienced with the project, thus making them better instructors. The only way ENA instructors can produce extension agents who will be useful to the CADERs is if they are familiar with the needs of the CADERs and the projects. They also need to be kept up-to-date on developments in the field. CARE should make an effort to keep in contact with ENA instructors by perhaps including them in on-the-job training exercises.

e. Offer assistance in curriculum development. In February 1988, CECI sponsored a meeting of ENA and CADER staff to discuss the ENA curriculum and make recommendations. One recommendation was to hold similar meetings each year. CARE should arrange to be invited to these meetings to keep abreast of developments.

It is probably inappropriate for CARE to bring someone in from outside to help in curriculum development. An outsider will not have the intimate knowledge of the country, the ongoing activities, the educational background of the students, or the educational philosophy of the country necessary to redesign the ENA curriculum. It might be worthwhile, however, to bring in someone with experience to help existing ENA staff redesign the curriculum, guiding them through the steps for interviewing former students, determining CADER needs, etc.

f. Provide material and equipment. CARE could pay for or provide certain ENA material and equipment (to be decided with the help of ENA personnel). Examples: Audio-visual equipment, compasses, measuring tapes, nursery materials, books and journal subscriptions (in French, naturally). This type of assistance has the advantage of being relatively easy. It is a one-shot venture, handled from a distance.

g. Provide fulltime resident instructor(s). This is not a normal CARE activity, and should not be necessary if CECI continues to provide adequate personnel.

h. Agree to pay the costs of student interns. CARE could volunteer to pay for the travel and living expenses of interns assigned to its project. Each ENA class will have 20 students. Approximately two interns will go to each of the 12 CADERs. CARE's willingness to absorb these costs may encourage other projects to pay for interns assigned to their projects. (Almost all development projects have a training line item which could be used for this purpose.) These expenses are a major portion of the ENA operating budget.

i. Give Comoran staff short visits to other schools in Francophone Africa that train extension agents. The Comoran ENA director could benefit from knowing how other schools similar to ENA are run and CARE could finance a visit to one or two such schools.

j. Encourage ENA to take on the role of coordinating continuing technical education of extension agents. ENA could train agents from all CADERs more efficiently than each could do individually.

k. Supply the school with equipment for the development and reproduction of course materials. Students generally leave school without any books or written material other than the notes they take in class. One of the best ways to prepare a student for a career is to provide him/her with information. Also, one way to improve the quality of a course is to require the instructor to prepare a "book" containing the individual lessons. Having such courses in written form also allows for continuity when instructors are replaced.

CARE should provide ENA with equipment and material necessary to prepare the "books," including a supply of stencils, paper, ink, a duplicating machine, a simple book-binding machine, etc.

CHAPTER IV

CONCLUSIONS AND RECOMMENDATIONS

The study upon which this report is based was meant to give REDSO/ESA and CARE a broad overview of the social structure, the economy, and the agricultural sector of the Comoros. A number of specific policy issues were to be studied. These are issues which, it was felt, might affect the success or failure of the CARE Anjouan Land and Soil Conservation Project.

After conducting a general review of the Comoros agricultural sector, and after examining the policy issues, the consultants were to draw conclusions on how the CARE project might be affected. Then they were to make recommendations that might be considered in the upcoming redesign of the project. This last chapter brings together the most important conclusions and recommendations given throughout the report and, in addition, gives general recommendations of project design. Those recommendations found in the body of the report which do not directly reflect on project design or project philosophy are not repeated here.

A. General Recommendations

1. An overview of the Comoros economy shows the importance of the agricultural sector. It is the sector most likely to make significant contributions to growth in the next five to ten years. Although industry may grow at a faster rate than agriculture, the overall impact will not be significant. Phase 2 should continue to focus on the agricultural sector.

2. Agriculture is also the only sector earning foreign exchange. Since no other possibilities seem available, the country will continue to rely on agriculture for foreign exchange. During Phase 2, there should be specific emphasis on promoting additional crops for export. Not only will this be good for the economy, but each farm family will be more secure with a mixture of crops that includes food for home consumption, cash crops for the domestic market, and cash crops for the export market.

3. One objective of the CARE project is to encourage the development of sustainable farming or agroforestry systems. Sustainability implies stability. Some may consider stability to be reflected by lack of change. During Phase 2, CARE should encourage farmers to be flexible in their response to market signals. Farming systems should be developed affording some latitude in crop mixtures from year to year. This will allow farmers to change crops as demand changes.

4. In many cases, the government has been unable to pay for its share of development assistance projects. Given recurring budget deficits, it is unlikely that this situation will improve in the near future. Phase 2 should be designed so that the failure of the government to make its contribution will not endanger the success of the project. The redesign should consider whether alternative implementation strategies might result in lower long-term recurrent costs.

5. CEFADER is overworked and understaffed. Critical functions such as planning, monitoring, and evaluation have not taken place. The result is that there has not been as much coordination as there might have been. Occasionally, some projects have worked against one another. Phase 2 should help increase the capacity of CEFADER to plan for future actions and to evaluate the effectiveness of projects in attaining objectives. The project should not include a planning component but rather one to train CEFADER staff how to plan. This should include on-the-job training and some formal training of staff with on-the-ground experience.

6. A number of factors constrain agricultural development in the Comoros. The government needs to address the problems so that projects such as the Anjouan Soil and Land Conservation Project can achieve objectives more easily. In many cases, the solution is policy formulation or reform. Phase 2 should include a series of studies of the effect of current policy, or lack of policy, on agricultural development. These studies must lead to a series of policy discussions with high-level government officials. Examples of the constraints that should be addressed by these studies are given here.

- How and at what point should the project be integrated more fully into the CADER structure?

- How should a project's operational structure be organized? Should all projects and donors be required to follow standardized policies and procedures? Examples: salaries, reporting, record-keeping, etc.

- Should all projects dealing with rural development work through the CADER as current policy dictates? Or, should certain components of rural development projects be assigned to other agencies? Should CADERs undertake activities normally considered the function of the private sector?

- What manpower development policies should CEFADER adopt to achieve a better-trained and more capable staff?

- What types of actions can the government take to legitimize current land tenure systems? Solutions should not

involve surveying the entire country and issuing deeds to every landowner.

o Should the maritime transport industry be deregulated to increase inter-island trade?

o Should the price-stabilization board take a more aggressive role in stabilizing the price of vanilla? Should the prices of other products be included in the board's activities?

o Should the government adopt policies designed to develop export markets abroad?

o What role can cooperatives play in marketing agricultural products?

B. Specific Recommendations

Given that REDSO plans on a five-year budget of $3.5 million, we believe CARE should continue to implement the Anjouan Soil and Land Conservation Project along the same general lines as it has in the past year. The geographic scope of the project should not expand until CARE can demonstrate its methods are appropriate. That is, can last year's successes be built upon and improved?

CARE should recruit a person experienced in managing training programs to coordinate all CADER training on Anjouan. This person would be assigned to the "antenne"--the CEFADER office on Anjouan that coordinates activities of all CADERs on the island--rather than to the project or either of the CADERs. The coordinator would help with scheduling, improve training methods, provide support services, and help develop long-term training programs.

In conjunction with CARE's increased activities in training extension agents, the project should become involved in the ENA school on Moheli. CARE technicians should have formal responsibility to teach courses at Moheli, perhaps a one-week course each year. CARE should officially request that student interns be assigned to project activities and help Moheli instructors evaluate ENA graduates to discover curriculum weaknesses. Finally, CARE should give a subgrant to ENA, to be administered by CECI, to fund certain operating costs of the school.

A separate activity would provide technical assistance for training CEFADER personnel in monitoring and evaluation techniques through on-the-job training. The advisor would spend approximately 50 percent of his/her time with these activities. The other 50 percent would be spent monitoring policy formulation and progress toward policy reform. The advisor would

be responsible for coordinating and supporting a series of short-term consultancies (such as those mentioned above) and providing continuity in policy dialogue with ministries.

The suggested technical assistance would cost approximately $500,000 over a two-year period. This includes two years of long-term TA at $150,000 per year and 12 months of short-term TA at $15,000 per month. There would be a small budget for field work and travel in connection with the monitoring and evaluation activities carried out by the Service de Programmation. In addition, REDSO should consider using AFGRAD or other training funds for long- and short-term overseas training of CEFADER personnel, especially in the area of planning, monitoring, evaluating, and policy formulation.

The advisor hired for this position should be an agricultural economist with experience working with both project-level evaluations and national level policies. He/she need not be a specialist in any one policy area but should have a broad view of the issues and experience in training or teaching. Finally, the advisor should be mature and experienced enough to conduct sensitive discussions with ministerial officials.

This might suggest a more senior-level advisor than could be supplied through the CARE grant. Thus, other technical assistance instruments--such as a contract with a consulting firm or a buy-in to the centrally-funded AAPA project--should be considered by REDSO.

ANNEX A

SCOPE OF WORK
COMOROS AGRICULTURAL SECTOR REVIEW

Background:

The A.I.D. bilateral program in the Comoros began in May 1984 with a five year grant to CARE for a project to increase GOC capability to implement erosion control and soil fertility enhancement on the island of Anjouan. As implemented, the project has two components: (1) strengthening of extension capability through training extension agents, establishing nurseries and demonstration fields, providing tree cuttings, and multiplying grasses for dissemination of agroforestry technologies and the stabilization of steep slopes; and (2) institutionalizing capacity for maintenance and repair of extension service vehicles on Grande Comore and Anjouan islands. As the current grant will end in May 1989, a REDSO evaluation was completed in April 1988 (year 4 of project implementation) to assess progress to date towards project objectives, generate recommendations for implementation by PACD, and define overall strategy for A.I.D./CARE collaboration in FY 1989 and beyond.

This evaluation included a strategy for A.I.D.'s future investments in FY 1989 and beyond, to focus on design of a new five year grant to CARE to overlap with the May 1989 completion of current grant activities. The new grant will target the agricultural sector, e.g. by intensifying our activities in soil conservation/fertility enhancement on Anjouan; expanding into involvement in extension training in other CADER's on Anjouan if consonant with other donors' programs; and possibly support to the long term extension training school on Moheli. Consultancies designed to strengthen CARE/REDSO project monitoring and evaluation in the Comoros will also be considered for funding (especially on agricultural policy issues) under the new grant to CARE. Design of the new grant will consider implementation of training in establishment of cooperatives and agricultural joint ventures.

The overall agricultural project environment in Comoros is complex. Major areas of the Comoros (e.g. the CARE focus area on western Anjouan Island) will need to make the transition from traditional export crop production to non-traditional export crops and/or subsistence food crop cultivation to adapt to the recent decline of the international spice export market (e.g. cloves). Under the Ministry of Production, CEPADER (the

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Federal Center for Agriculture and Rural Development) on Grande Comore Island supervises regional agricultural extension service units known as CADER's (Centers for Agriculture and Rural Development). There are 4 CADER's on Anjouan Island alone, plus a recently established fifth unit (a "pre-CADER"). In addition to A.I.D., nine bilateral and multilateral donors are providing some form of support to individual CADER units on Anjouan. These donors include: World Food Program (WFP), the World Bank (IBRD), FAO, the European Development Fund, the African Development Bank, UNDP, French (FAC) and Canadian bilateral aid.

Despite this level of donor support, institutional capacity to generate and implement agricultural policy in Comoros is weak. It appears that CEFADER and its decentralized CADER leadership need to develop skills in agricultural policy analysis, financial appraisal of agricultural projects, and fiscal and commodity management. Though extension in southeast Anjouan (M'remani CADER) has been successful, this is largely due to the presence of successive waves of donor support for technology dissemination in this area since 1963, initially under French colonial administration, and most recently with African Development Bank financial support (recently ended). Gains in this area need to be protected, and a strategy for use of this demonstration area to motivate the less progressive CARE-assisted regions on the island needs to be developed.

As input for design of the new multi-year follow-on grant to CARE, REDSO will use PDS funds for a CARE-managed consultant team to produce an agricultural sector review of secondary data sources on land tenure, cash crop production and marketing, national Food for Work policy, and agricultural sector institutional capability as input for design of the new grant.

Personnel Requirements and Qualifications:

REDSO/ESA PDS funds will be provided to support 22 work days of technical assistance from a francophone Agricultural Economist with at least five years' experience in African agricultural policy assessment and agricultural institution-building. Twelve work days of technical assistance from a francophone Sociologist/Anthropologist with at least five years' experience in Agricultural Sector Training and Community Development in Africa will also be required.

The team will work together in the Comoros, with guidance and logistical support from CARE/Comoros, to review existing secondary data sources to produce a final report with recommendations for design of the new grant to CARE which addresses the following issues:

A. Policy at the National Level:

The GOC has no agricultural research policy at the national level, and technologies historically promoted by agricultural extension cannot cope with declining soil fertility in the Comoros. Land tenure problems appear to be interfering with farmers' receptivity to improved on-farm technologies, as only 30% of land is officially titled at present. Of the remainder, 40% is farmed only on a usufruct basis, and the rest is occupied by forests and villages. In 1987, a land tenure study was carried out by French-funded advisors. The study presented five scenarios for land tenure reform for GOC consideration, but no action has been taken to date, and the study has not been reviewed by CARE or A.I.D.

National policy on the use of WFP rations in Food for Work programs is now under discussion. With maize meal (not preferred by consumers) as the basic component of the WFP ration, the perceived value of rations is low, and WFP is considering a shift towards rice in the ration's composition. At present, only about 10% of rice consumed in Comoros is locally produced. An assessment of rice prices and domestic production incentives is needed to determine whether rice inflow from a change in WFP rations would lower rice prices and thereby reduce domestic producer incentives.

Cash crop pricing and marketing policies require further study as well. Land under ylang ylang is being converted to food crop production, and harvest labor prices have been declining, though the world market price for this export appears to be stable. It is not clear why area planted with ylang ylang appears to be declining rather than expanding. Vanilla production exports also dropped off sharply from 200 tons in 1986 to 7 tons in 1987. The clove export market is declining rapidly, but producers of cloves are holding out in hopes of better markets in future. Most clove forests are located on steep slopes, and if this market trend continues, producers may eventually begin cutting down the clove trees, greatly accelerating erosion thereafter. As an interim solution, a review of national research, market and policy reform studies is needed to identify alternative cash crops based on present and future comparative advantage. Available information on prospects for the reclamation of land under cloves, in view of the alelopathic properties of clove trees, should also be reviewed.

B. GOC Institutional Capacity in the Agriculture Sector:

In view of the substantial inflow of donor support for its activities, CEFADER is receiving much more external support

than other GOC entities, and the GOC has been reluctant to provide recurrent local currency support for CEFADER and the regional CADER's. The President appoints all CADER directors, and has taken a strong role in other personnel decisions. There is a gap in the personnel structure of the CADER's, as the CADER directors have no deputies, and there are no trained Comorian supervisors for CADER extension agents. A long term degree program in extension has recently been established with Canadian assistance on Moheli Island, but the curriculum and teaching staff may require strengthening.

Considerable variability was observed in comparing the two Anjouan CADER's which CARE assists, in terms of the Anjouan CADERs' institutional capacity, level of experience, and available facilities. Boungoueni CADER has about four hectares of land available for on-station nurseries, demonstration and research fields, and grass propagation, while Ouani CADER has no land for these activities. In terms of level of experience, CEFADER and the two eastern CADER's on Anjouan were established in 1979, but the two western Anjouan CADER's (assisted by CARE activities) were only established in 1984.

CEFADER has created a planning unit which is responsible for preparing annual budgets at the national level, but CARE controls A.I.D. project funds which are all deposited in CARE's own accounts. Only use of revolving funds (created by reflows from garage, nursery and hand tool sales) presently requires signatures by both CARE and GOC counterparts. Salaries for CADER extension agents participating in the CARE project are paid from the CARE account. CEFADER's track record in fiscal accountability needs to be assessed, including current procedures for GOC control of receipts from sale of nursery plants and other systems for fiscal control and accountability for funds. The consultant should review other donors' experience to date, e.g. CADER management of IBRD reflows into a revolving fund from sales of tools to farmers.

C. <u>Socio-Economic Issues Affecting Project Achievements</u>:

Tree crops are primarily owned by men, but food crop production is predominantly a female activity. Though female agricultural extension agents are few in number, CARE has tried to hire as many female agents as possible, succeeding notably in the case of Ouani CADER, where 6 of 16 agents are female. CARE project experience indicates, however, that male agents are also reaching female farmers effectively. Extension agents recruited to work with CARE come from a representative set of villages involved in project activities, but the apparent lack of indigenous social structure at the village level (e.g. none of the "councils of elders" often found in other parts of

Africa) has forced CARE to create project-related village committees to provide a vehicle for collective beneficiary participation. The level of commitment and effectiveness of these village committees varies greatly, and as a result, extension agents have worked primarily with "progressive farmers".

Timing

Each consultant will spend one work day in Washington D.C. to collect background publications on the way to Comoros. It is expected that the agricultural economist will use this opportunity to obtain relevent reports from the World Bank, while the anthropologist will consult the Library of Congress/Smithsonian collection for background materials on the Comoros. Funds are budgeted to support the purchase and/or xerox of relevant literature as needed.

Each consultant will also have one paid work day for travel time from Washington D.C. to Moroni, Comoros.

The agricultural economist will arrive o/a September 6, 1988 in Moroni to begin this assignment. He or she will be joined in Moroni by the anthropologist o/a September 16, 1988, and the team will work together to complete a draft report which meets the terms of this work order o/a September 26, 1988. The draft report will be left with CARE/Comoros for review. The consultants will then travel to Nairobi to spend one work day reviewing the draft report with REDSO/ESA en route to the U.S. The consultants will complete a final report which responds to feedback from CARE/Comoros and A.I.D. o/a October 26, 1988.

Six day work weeks are approved.

Specifications for the Final Report

The consultants will produce an agricultural sector review of secondary data sources which addresses:

(a) National policy on the use of WFP rations in Food for Work programs, especially concerns about the use of WFP commodities to pay farmers for erosion control activities on their own fields, and a study of rice prices and domestic production incentives to assess whether rice inflow from a change in WFP rations would lower rice prices and thereby reduce domestic producer incentives.

(b) national land tenure policy and recommendations currently under review by the GOC.

(c) village level social organization on Anjouan, and how best to reach men and women farmers with project interventions.

(d) cash crop pricing, marketing policies, and world market trends (e.g. for ylang ylang, cloves, and alternative cash crops in which Comoros might have a competitive advantage like coffee and cinnamon), and a review of available literature on potential for inter-cropping alternative cash crops in the clove forests (as currently practical in Indonesia), and reclamation of land now under cloves.

(e) assessment of CEFADER's capability in agricultural policy analysis, planning and financial appraisal of agricultural projects (especially within its planning unit which is responsible for preparing annual budgets at the national level), and fiscal control within CEFADER and its regional CADER's on Anjouan, e.g. experience in managing revolving funds.

This report should include recommendations on the following concerns, for incorporation in design of the new CARE grant:

(1) Recommend possible support to the long term extension training school on Moheli particularly for curriculum design and supervision of trainees during their final year practicum.

(2) Short-term consultancies to be considered for future funding to strengthen CARE project monitoring and evaluation in the Comoros (especially on agricultural policy and institutional development issues).

(3) Assess CEFADER training needs in agricultural policy, planning and financial appraisal of agricultural projects, and determine whether these needs can best be met by external training, or alternatively by in-country workshops under the new CARE grant.

(4) Assess private sector training needs in the agricultural sector, and recommend topics and target groups to be involved in-country workshops under the new grant.

(5) Recommend ways to work more closely with village leaders, and to better reach men and women farmers with future project activities.

The report should have an executive summary in both French and English.

Logistic Support

CARE/Comoros will assist with hotel reservations in Comoros, and will supply official vehicles for in-country ground transportation in Comoros, access to office copy machines and printers, introductions to CEFADER and other donors, and reservations for local air travel between Moroni, Anjouan, and Moheli. The American Embassy Moroni will provide access to diplomatic pouch and State Department cable system for communications with A.I.D.

In all other respects, the contractor is required to be logistically independent. The consultants should bring their own personal computers to Comoros.

ANNEX B

PERSONS INTERVIEWED SEPTEMBER 5-19, 1988

CADER DE OUANI

Humady Hussen. Director. Until three months ago Director of Nioumakele CADER.

Hamadi Allawi. A Comoran student completing three months fieldwork on anti-erosive techniques on Anjouan for his memoire in France.

CADER DE BOUNGOUENI

Abdul Rahman. Directeur Adjoint.

Zaina. Extension agent.

Extension agents. Joint interview with 12 extension agents.

CAISSE DE STABILISATION DES PRIX

Assoumani Abdallah. Assistant Director.

CARE

Dan Stephens. Director.

John Veerkamp. Agronomist, Land and Soil Conservation Project.

David LaFramboise. Project Manager, Land and Soil Conservation Project.

Peter Rumsey. Project Manager, Garage Project.

Tim Sullivan. Mechanic/Trainer, Garage Project.

Anli Jaffar. Technician, Land and Soil Conservation Project.

CECI

Cas Remmers. Director. Will not return until the beginning of October.

Pierre Thoin. Assistant Director.

CEFADER

Kessim M'Said. Director General.

Mouhtar Rachid. Assistant Director General and Director of General Services.

Hachim Ben Hamza. Chef d'antenne, Anjouan.

Christian Larrieu. Director of Planning and Surveys. On vacation until September 30.

Mohamed Nadjib. Chief of the Planning Service.

Mohamed Halifa. Chief of the Training Service.

A. Moussa Ben Abdallah. Chief of the Marketing Service.

Annie Caburet. Research agronomist attached to the Research and Development Office.

EDF

Richard Wilkinson. Resident Representative. Out of the country.

UNDP/FAO

Kevin McGrath. Resident Representative.

Victor DuPont. Agronomist attached to FAO project on Anjouan.

Sixte Rutayisire. U.N. Volunteer at Nioumakele CADER.

UNITED STATES EMBASSY

Karl Danga. Charge d'affaires.

WORLD BANK

Jan Weijanberg. Comoros project officer in Washington.

_____. Accountant for the Rural Services Project.

WORLD FOOD PROGRAM

Prahdip Dalal. Director. On vacation until September 22.

Paul Ouatara. U.N. Volunteer. Assistant Director.

PRIVATE SECTOR

Charles Boitin. On vacation.

Said Ali Mohamed. Director. Ets. Mohamed Ahmed & Fils.

Abdoukader Hadj. Manager of SoCoCaf.

Said Abdoullah Cheikh. Economist. Manager of Kalfan Bakery. Former Director of the Price Stabilisation Board.

Jean-Marie Waro. Ets. Grimaldi.

Hassani Assoumani. Director of SAGC.

J-F Daumin. Director of Societe Bambao in Anjouan.

MISSIONARY

Miriam Van Reenen. Groupe de Service Volontaire (Comores) - African Inland Mission. Thirteen years experience working with women in Comoran villages.

VILLAGES ON ANJOUAN

Boungoueni Village: Observation at mother-child malnutrition session.

Boungoueni Village: Observation/discussion with women's sewing group.

Chironkamba Village: Discussion with Deputy Soibaha Houmadi, Vulgarisateur Assistant Albert, and 12 village men.

Dzindri Village: Discussion with the Chief and ten village men.

Marahare Village: Discussion with vulgarisateur and three village men.

Mirontsi Village (a suburb of Mutsamudu): Attended the first CADER/CARE meeting to explain the Focus Area approach to the villagers.

Myironi Habushiya Village: Observation of anti-erosive plantings and canals.

Nkhohani Village: Observation of embocage step-terraces and discussions with three farmers.

Lako Bakar Village: Observation of stone walls as anti-erosive measures.

Shanza Village: Discussion with Shibako, the first villager to adopt embocage step-terraces.

Sima Village: Observation/discussion with women's sewing group.

Sima Village: Attendance at marriage ceremony.

ANNEX C

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ANNEX D

U.S. DEPT. OF STATE
2201 C ST. NW SUITE 5440
WASHINGTON, DC 20520

3B D102 43-1 3D701 11 10/27/88 19:47

HAND DELIVERY 20036
CHEMONICS INTL ATTN SALLY CAMERON 466 5340
2000 M STREET NWELAY
WASHINGTON DC 20036

SUBJECT: COMOROS - CHEMONICS REPORT ON AGRICULTURAL SECTOR

REF: CHEMONICS REPORT ON COMOROS AGRICULTURAL SECTOR

1. REDSO/ESA HAS REVIEWED THE DRAFT REPORT SUMITTED BY CONSULTANTS GROSENICK AND SENSENIG. WHILE WE FIND THE REPORT TO BE AN INFORMATIVE OVERVIEW OF THE COMORAN ECONOMY, ITS USEFULNESS COULD BE SUBSTANTIALLY IMPROVED BY ADDRESSING THE ISSUES DISCUSSED BELOW. ACCORDINGLY, WE HAVE ASKED AID WASHINGTON (M SER/OP/OS/AFR) TO AMEND YOUR IQC WORK ORDER TO EXTEND THE DATE BY WHICH REDSO MUST RECEIVE A COPY OF YOUR FINAL REPORT TO NOVEMBER 21, 1988. THIS WILL GIVE THE CONSULTANTS TIME TO INCORPORATE A RESPONSE TO OUR ISSUES IN THE FINAL REPORT.
2. THE FOLLOWING ARE THE AREAS IN WHICH REDSO BELIEVES THE REPORT NEEDS CLARIFICATION AND/OR AMPLIFICATION:

A. THE DRAFT SUGGESTS THAT THERE MAY BE LOCAL ORGANIZATIONS ALREADY IN PLACE ON ANJOUAN THAT, IF PROPERLY DEVELOPED AND ENCOURAGED, MIGHT BE USEFUL VEHICLES FOR ORGANIZING AND CARRYING OUT SOIL CONSERVATION ACTIVITIES. THE FINAL DOCUMENT SHOULD IDENTIFY AND DESCRIBE IN MORE DETAIL THESE LOCAL ORGANIZATIONS AND DISCUSS HOW THE A.I.D.-FINANCED PROGRAM COULD HELP THEM BECOME CAPABLE OF PLAYING SUCH A ROLE.

--B. THE DRAFT HIGHLIGHTS THE IMPORTANCE OF DEVELOPING EXPORT CROPS. BEFORE A.I.D. CAN CONTEMPLATE RE-ORIENTING ITS ASSISTANCE TOWARD THIS OBJECTIVE, HOWEVER, WE NEED TO KNOW MORE ABOUT THE STRUCTURE OF PRODUCTION FOR EACH OF THE MAJOR EXPORT CROPS (CLOVES, VANILLA, AND YLANG-YLANG). SPECIFICALLY, WHO PRODUCES EACH CROP, AND HOW DO THEY PRODUCE IT? FOR EXAMPLE, ARE THESE EXPORTS PRODUCED BY NUMEROUS SMALL CULTIVATORS? ARE THESE CULTIVATORS PRIMARILY SUBSISTENCE FARMERS? WOULD THE INCREASED INCOME GENERATED BY INCREASED EXPORTS BE WIDELY DISTRIBUTED? OR, AT THE OTHER EXTREME, IS THE PRODUCTION AND SALE OF THESE EXPORT CROPS CONTROLLED BY A FEW LARGE ECONOMIC OPERATORS?

C. SIMILARLY, WHAT IS THE MARKETING STRUCTURE FOR EACH OF THESE CROPS? WHO BUYS DIRECTLY FROM THE FARMER - THE EXPORTER, OR A MIDDLEMAN? WHO ARE THESE MIDDLEMEN? WHO ARE THE EXPORTERS?

D. THE MAY 1988 EVALUATION CONCLUDED THAT FARMERS ARE NOT ENTHUSIASTIC PARTICIPANTS IN SOIL CONSERVATION EFFORTS. THIS IS PARTIALLY EXPLAINED BY THE FACT THAT THEY SEE LITTLE OR NO LINK BETWEEN SUCH EFFORTS AND POTENTIAL INCREASES IN THEIR OWN INCOME. HOW MIGHT SUCH A LINK (BOTH ACTUALLY AND IN THE FARMERS' PERCEPTIONS) BE ESTABLISHED?

3. WE LOOK FORWARD TO RECEIPT OF THE FINAL REPORT.

SINCERELY,
LEON WASKIN
PROJECT DEVELOPMENT OFFICER
REDSO/ESA
C/O AMERICAN EMBASSY
TELEX NO. 22964
NAIROBI, KENYA
AMERICAN EMBASSY NAIROBI KENYA 29869 / 11994

ANNEX E

RESPONSE TO REDSO COMMENTS

A. Answer incorporated in chapter III, C.

B., C., The draft report did emphasize the importance of developing export crops. It was our intention to indicate that the Comoros needs more export crops in addition to ylang-ylang, vanilla, and cloves. Upon rereading the draft, we recognize that this intent was not as evident as we had hoped. We have, therefore, clarified this point in both chapter IV: Conclusions and Recommendations and in the executive summary. Also chapter III, D: Cash Crops Pricing and Marketing now contains additional support for not relying on the traditional export crops.

Since we are not recommending the expansion of the traditional export crops, we do not see the need for discussion of the points mentioned in items B and C of the REDSO telex. However, much of the requested information has been inserted in the report in the various sections which discuss these crops.

Also, we cannot discuss the production structure for the crops to be introduced during Phase 2 because we are not recommending any specific crop. However, since these crops will be introduced or promoted by the CARE project, they will surely be promoted among small landowners rather than large landowners.

D. Answer incorporated in chapter III, C.