

# SPECIAL REPORTS

## CENTRAL AMERICAN EMERGENCY RECOVERY PROGRAM FOLLOWING HURRICANE MITCH

In late October and early November 1998, Hurricane Mitch did extensive damage to many areas of Central America. The hurricane's ferocious winds and torrential rain, along with the floods, landslides and flows of debris that it triggered, killed many thousands, left millions homeless, and devastated vast agricultural areas throughout Nicaragua, Honduras, El Salvador and Guatemala. The ICDF promptly put together emergency recovery assistance programs to address the needs of its friends in the region.

Following an assessment performed by experts commissioned by it, the ICDF gave 25-year loans of US\$6 million each, at a nominal interest rate of 2 percent, to Nicaragua and Honduras, with the foreign ministry of the ROC agreeing to absorb the interest on the loan for the first five years. In view of the lighter damage in those countries, El Salvador and Guatemala were granted 25-year loans of US\$4 million each, at the same interest rate.

### Housing and Rehabilitation Program for Small Farmers in Nicaragua

Mudflows in northern Nicaragua triggered by Hurricane Mitch engulfed 10 villages, destroyed an estimated 20,000 homes and devastated the lives of nearly 370,000 rural residents. The agricultural sector was dealt a particularly severe blow.

Nine hundred and fifty-one of the most severely affected households will be given assistance through the Organization of American States (OAS). Half of the ICDF's US\$6 million loan to Nicaragua will be used to rebuild 1,000 homes at a cost of approximately US\$2,100 apiece. The goal is not only to rebuild houses and villages, but also to mobilize local manpower and resources, pool the strength of local communities, and engage residents in rebuilding their homes. This strategy, it is hoped, will provide positive psychological benefits as well as jobs.

It is estimated that US\$23 million will be needed to restore the agricultural areas alone in Nicaragua. In order to help farming households to replant their fields with maize and beans, the Nicaraguan Ministry of Agriculture and the Nicaraguan Agricultural Technology Association are providing technical assistance, together with grain supplied by the World Grain Project (PMA), to the areas with the highest concentration of poor farmers. The second half of the ICDF loan, US\$3 million, will be used to resettle affected farmers and assist them in rebuilding the farming infrastructure, by providing capital, raw materials, tools and technical assistance.

## Housing Reconstruction Program in Honduras

Honduras was hit harder by Hurricane Mitch than any other Central American country, and roughly 70 percent of its grain, coffee and banana crops were destroyed. The country sustained approximately US\$3.6 billion worth of damage, with the result that more than two million people had to be evacuated from disaster areas and 420,000 residents had to be housed in emergency shelters. Nearly 50,000 homes required repairs and more than 30,000 homes needed to be totally rebuilt.

Because of the urgency of the rebuilding work, the Honduran government requested that the OAS assist the Honduran Ministry of Public Construction, Transportation and Housing to carry out the house reconstruction project. The OAS will mobilize local labor, technical personnel and building materials, and supervise the construction work, while the local government will assume the administrative duties connected with the project.

The beneficiaries of the ICDF loan—approximately one tenth of all households severely affected by the hurricane—will be residents who have been selected by community welfare organizations, with priority given to those living in shelters or with friends or relatives. The Honduran government plans to build more than 2,000 houses (600 40-sq-m structures near the nation's capital city and 1,400 24-sq-m houses in rural areas) for people in the six hardest hit provinces. The houses will be built of sturdy brick and cement, with cement floors and galvanized iron roofs, and will be equipped with stoves and common toilet facilities.

## Housing Reconstruction Program in El Salvador

The parts of El Salvador most damaged by the hurricane were mainly in the eastern provinces of San Miguel, Usulután, La Unión, La Paz and San Vicente. Government statistics indicate that 242 people died as a result of the hurricane, approximately 84,000 were injured or displaced, and damage estimated at 1.16 billion Salvadorean colons (approximately US\$133 million at a rate of colon 8.7: US\$1) was done to agricultural infrastructure.

The rebuilding of more than 10,000 homes, undertaken by the Vice Ministry of Housing under the Ministry of Public Construction, will cost more than US\$6.7 million. The government will contribute US\$1.7 million of this amount in the form of land, labor and food, while the ICDF will provide a US\$4 million loan for construction-related expenses. Fourteen hundred 28-sq-m houses will be built, with priority given to households that must move away from hazardous areas, followed by families whose homes were completely destroyed, and finally by those whose homes were only partially destroyed.

El Salvador's Ministry of Finance will transfer the ICDF loan to the Vice Ministry of Housing, which will carry out the construction plan and supervise its implementation. The government will donate the new houses to the families most severely hurt by the disaster. However, provincial and municipal governments must negotiate with the Vice Ministry of Housing concerning the transfer of land ownership to stricken residents.

## Infrastructure Rebuilding and Development Program for the Rio Polochic Region of Guatemala

Guatemala also sustained severe economic damage as a result of the hurricane. More than 110,000 persons were severely affected, and three quarters of a million suffered milder effects. After an assessment of the situation and following negotiations with the Guatemalan government, the ICDF proposed a US\$4 million loan to be used for rebuilding and developing infrastructure in the Rio Polochic region.

The Rio Polochic region is located to the north of the Guatemalan capital. A poor region, it has been frequently assaulted by earthquakes, and was severely damaged by the hurricane. The Guatemalan government plans to use foreign aid to carry out rebuilding work in the four most severely damaged cities: Tamahu, Tucuru, Senahu and Panzos. The government also hopes that, as part of the same program, it will be able to improve the region's infrastructure and standard of living. The construction work is estimated to cost US\$4.8 million.

Specific projects to be funded by the ICDF's emergency recovery loan of US\$4 million for the Rio Polochic region include:

1. The construction of five health centers or medical posts, equipped with stretchers, diagnostic tools, medicine storage units and basic medical equipment. The Guatemalan Ministry of Health will assist in this.
2. The construction of 31 schools of approximately 158 square meters each, with an average of two classrooms and equipped with chairs, desks, blackboards, bookshelves and instructional equipment. The Guatemalan Ministry of Education will assist with this project and arrange for the assignment of teachers.
3. The building of sanitation and water systems that will carry potable water directly to houses or community faucets. Twenty-six water collection, distribution and purification systems and networks are to be constructed.
4. The rebuilding of suspension, pedestrian and vehicular bridges. The Guatemalan Ministry of Transportation plans to construct 23 bridges with a width of about 1.8 meters, four concrete vehicle bridges measuring 5–10 meters, and four narrower concrete pedestrian bridges.

These projects will benefit 126,298 persons directly and 260,000 persons indirectly. The Guatemalan social investment fund (Fondo de Inversion Social, or FIS), which reports directly to the president, will be responsible for the implementation of the program. The FIS will hire private construction companies and NGOs to perform the actual construction work and FIS personnel stationed in the affected provinces will be responsible for both directing and supervising construction.

**Table 7: Summary of ICDF Assistance Following Hurricane Mitch  
Nicaragua, Honduras**

ICDF Program	Nicaragua	Honduras
<i>Loan Amount Preferential Loan Conditions</i>	US\$6 million Term: 25 years Grace period: 5 years Interest rate: 2% No commitment fee Interest for first 5 years to be paid by MOFA	US\$6 million Term: 25 years Grace period: 5 years Interest rate: 2% No commitment fee Interest for first 5 years to be paid by MOFA
<i>Appropriation Method</i>	Loan funds to be disbursed in two appropriations: US\$3 million after Nicaragua has prepared documentation (including loan contract approved by the National Assembly), balance after Nicaragua has secured other funds and confirmed use of funds for the agricultural restoration program. Government applied for first appropriation in mid-April 1999 and ICDF has released the US\$6 million.	After Honduran National Assembly has approved loan contract and completed signing procedures, Honduras must sign implementation contract with OAS—following which ICDF loan of US\$6 million to be appropriated. OAS personnel currently negotiating content of contract with Honduran government.
<i>Content of Recovery Program</i>	(1) US\$3 million of ICDF loan for construction of homes, at estimated cost of US\$2,100 each. (2) US\$3 million for agricultural reconstruction, to help disaster-stricken poor farmers to replant fields. Six elements: (i) resettlement of farmers who lost their land (government to provide free land); (ii) rebuilding of damaged productive infrastructure; (iii) loans to farmers for seeds, fertilizer, etc.; (iv) loans for production materials; (v) donations of basic farming implements; (vi) provision of necessary technical assistance.	ICDF's loan of US\$6 million will help people rebuild their homes in hardest hit areas. Government will rebuild more than 2,000 homes in six affected provinces and give them to the poor, at an estimated cost of US\$100 per square meter (including labor). Plan is to build 600 40-sq-m houses near the capital and 1,400 24-sq-m houses in rural areas. Beneficiaries to be selected by local social welfare organizations, based on most urgent need.
<i>Implementing Organization</i>	OAS commissioned to assist in home rebuilding program. Agricultural recovery program to be implemented by Nicaraguan Department of Agriculture.	Honduran Ministry of Public Construction, Transportation and Housing has commissioned OAS to assist with home rebuilding program.
<i>Geographical Scope of Recovery Program</i>	(1) Severely affected areas, including Wilwili and Waslala provinces in central and northern Nicaragua; (2) areas with concentrations of the poorest small farmers.	Cities most severely affected: Cortes, Morazan, Francisco, Comayagua, Choluteca, Colon and Yoro. Work to begin in Tegucigalpa and proceed south and north. Local governments to provide land for construction.

**Table 7: Summary of ICDF Assistance Following Hurricane Mitch  
El Salvador, Guatemala**

ICDF Program	El Salvador	Guatemala
<i>Loan Amount Preferential Loan Conditions</i>	US\$4 million Term: 25 years Grace period: 5 years Interest rate: 2% No commitment fee	US\$4 million Term: 25 years Grace period: 5 years Interest rate: 2% No commitment fee
<i>Appropriation Method</i>	First appropriation of US\$1 million, to be used only for the purpose of the loan. Second appropriation may be applied for after US\$800,000 of the funds has been used and expense documentation submitted. Each appropriation shall be for US\$1 million.	First appropriation of US\$1 million, to be used only for the purpose of the loan. Second appropriation may be applied for after US\$750,000 of the funds has been used and expense documentation submitted. Each appropriation shall be for US\$1 million.
<i>Content of Recovery Program</i>	Hurricane Mitch totally destroyed approximately 10,370 homes in El Salvador. ICDF contribution intended to assist El Salvador in rebuilding homes for most severely affected citizens. First priority to be given to households in currently hazardous areas, then to those whose homes were completely or partially destroyed.	Among types of infrastructure to be rebuilt in severely affected Rio Polochic region: medical stations/health posts and purchase of medical equipment; 31 schools with average of two classrooms each, including equipment and teaching materials; sanitation and drinking water systems, including 26 water supply and purification systems and networks; suspension, pedestrian and vehicular bridges, including 23 bridges with a width of roughly 1.8 meters and 4 vehicular bridges with width of 5-10 meters.
<i>Implementing Organization</i>	Vice Ministry of Housing of Salvadorean Ministry of Public Construction.	Guatemalan Social Investment Fund (Fondo de Inversion Social, AFIS) approved by Segeplan (economic development commission) as official implementing unit.
<i>Geographical Scope of Recovery Program</i>	Five of hardest hit provinces: San Miguel, Usulután, La Unión, La Paz and San Vicente	Four cities in hardest hit Rio Polochic region: Tamahu, Tucuru, Senahu and Panzos

## ASSISTANCE PROGRAMS IN MACEDONIA

### Background and Assistance Strategies

Originally a part of Yugoslavia, Macedonia declared independence in 1991. The country suffered a severe economic decline after independence, and in 1994 the International Monetary Fund restructured Macedonia's debt. Although reform of the Macedonian economy is showing signs of success, the country is still hampered by the misuse of resources as it struggles to transform the old communist planned economy into a free market system.

After Macedonia and the ROC entered into a diplomatic relationship, ICDF Secretary General Ping-cheung Loh led a delegation to Macedonia to evaluate the country's overall economic conditions. Subsequently the ICDF drafted a multifaceted aid package combining technical cooperation, investment, financing, and education and training.

The ICDF hopes that the substantial assistance which it is providing will, in conjunction with Macedonia's mid- and long-term development strategy, stimulate economic activities and accelerate the development of the private sector. The assistance is designed to help Macedonia promote exports by raising its administrative efficiency and improving the legal environment for foreign investments. A financing loan fund, investment in the local market and acquisition of high-tech agricultural and animal husbandry techniques are designed to help revitalize the Macedonian economy.

In addition, in order to raise the caliber of human resources needed for economic development, the ICDF will offer support to Macedonia in basic education and provide training in Taiwan in specific areas.

### The Technical Mission

The technical mission which was established in Macedonia on 13 April 1999 comprises eight specialists with the skills required to help accelerate the pace of economic development. A summary of the services that the technical mission staff will perform follows.

#### Single Window Service for Foreign Investments

Assisting the government in simplifying procedures for foreign investment and improving investment review efficiency.

#### Investment Promotion

Seeking to identify feasible investment projects and helping Taiwanese firms to seize business opportunities.

#### Export Promotion

Training Macedonians in how to develop new markets by collecting overseas market information and performing market analyses, and generally promoting exports.

### SME Development

Providing advice on how to raise the competitiveness of local SMEs and supplying them with short- and long-term technical assistance; helping to formulate relevant laws and measures; establishing guidance mechanisms; and assisting in strengthening management capability.

### Animal Husbandry and Agricultural Projects

Implementing a hog raising project to improve the techniques and profitability of small hog raisers; and developing a vegetable project to promote diversified vegetable production, ease the problem of surpluses and raise farmers' profits.

## Private Sector Financing Project

The ICDF is providing US\$12 million in financing loans to help Macedonia develop its private sector. These loans are being made available to SMEs, microenterprises and farmers.

**SME Relending** — The managing of a fund of US\$10 million intended to provide loans for capital investment or operations to SMEs with 250 employees or less.

**Microcredit** — Administration of a fund of US\$1 million to assist individuals, groups or enterprises in a variety of ways, including the financing of operating funds.

**Agricultural Credit** — Using a fund of US\$1 million to support farmers' activities, such as agricultural processing, shipment and sales.

## Investment Projects

The ICDF will contribute US\$2 million to a Macedonian SME investment fund (SEAF/Macedonia), in order to promote ROC investment in the private sector. The investments will be targeted to SMEs and start-up ventures with total assets of up to US\$1 million.

## Capacity Building Project

In many cases, Macedonian government departments lack the funding to implement reform measures. In order to help the government units collect and analyze data, the ICDF is providing Macedonia with appropriate computer hardware and software, supplemented by training classes. This equipment will enhance the administrative efficiency and professional capability of government departments and help them to deliver highly improved services.

## Human Resources Development Project

Macedonia's educational resources are unevenly distributed, with insufficient importance being placed even on basic education. Because there was formerly no curriculum concerning free market economics, and also because of inadequate budgets for such training, there is a shortage of qualified management personnel. That factor is hampering the large-scale implementation of privatization.

In order to help solve part of this problem, the ICDF will institute a scholarship program and invite a number of Macedonians to attend training sessions in Taiwan. The current annual program includes five places for Macedonian trainees in regular short-term training classes, four places in agricultural training classes, approximately 20 places in special classes held in Macedonia, one scholarship in agriculture at the master's degree level in Taiwan, and 250 scholarships, worth US\$400 each, for needy elementary school students.

## Investment in Financial Intermediary Investment Special Fund with the EBRD

The ICDF has joined the European Bank for Reconstruction and Development's regional direct investment fund, and will make loans to, and investments in, European private enterprises as a cofinancer with the Bank. The ICDF has recently completed negotiations with the EBRD on investment and financing for Macedonia.

## Current Status

Immediately after their arrival in Macedonia, the specialists on the ICDF technical mission team met with their Macedonian counterparts to discuss the implementation of aid projects, as well as to evaluate the feasibility of proposed SME guidance and investment projects.

All proposed projects are under way. In May, two Macedonian officials came to the ROC for trade promotion training and in June several contracts were signed, including a loan contract for the private sector development project and an equity investment contract. A preliminary review of the applicant list for the master's degree program was made and an evaluation of Macedonian extension farmers was planned for July.

Some investment opportunities have already begun to be identified, among which one at a fire extinguishing equipment factory and another at a pharmaceutical factory. As the fiscal year ended, Taiwanese firms were preparing to send fact-finding teams to Macedonia to investigate these opportunities.



## DEVELOPMENT OF TIDAL IRRIGATION IN THE GAMBIA

### Geographical Environment

The Gambia, a country in West Africa bordering the North Atlantic Ocean, has a land area of 10,000 square kilometers that is entirely surrounded by Senegal. Its shape is narrow, extending for roughly 15–20 km on each side of the banks of the 740-km-long Gambia river. The river originates in Fouta Djallon in the mountain region of West Guinea and flows through Senegal and The Gambia before emptying its waters into the Atlantic Ocean.

The population numbers about 1.3 million, and is growing at an estimated rate of 3.42 percent. More than three quarters of the entire population depends on crops and livestock for its livelihood. About one third (343,339 hectares) of the land is cultivated with peanuts, millet, sorghum, rice and maize. Peanuts and peanut products make up about 70 percent of exports, and foodstuffs, especially rice, constitute the most important imports

Average annual temperatures in this tropical country are 21°C–33°C. The dry season lasts from November to May, and most of the rainfall occurs between July and September. Average annual rainfall for the country as a whole is approximately 750 mm, but there is less rainfall each year. With the limited rainfall hampering agricultural production and erratic harvests of dryland rice, irrigated paddy rice plays a major role.

### Paddy Rice Production Overview and Project Goals

Paddy rice is grown primarily along the middle and lower reaches of the Gambia river, whose water is used for tidal irrigation in certain parts of the country. Although rice is a staple food in The Gambia, most farmers are too poor to buy the required fertilizer and agricultural machinery, and the small areas of cultivation and primitive farming technology keep output low, at about 1.5 metric tons per hectare.

The government allows the free import of rice, which discourages farmers from growing the crop. Most grow only sufficient rice to meet their own needs, with the result that the 20,000 metric tons produced annually account for less than one quarter of domestic demand. Over the years, the government has made increasing rice output a major policy objective, and it has used foreign aid money to develop 6,000 hectares of new rice paddies. However, most of those paddies have since been abandoned due to poor management and lack of resources.

The ROC technical mission has been promoting paddy rice production and the expansion of paddy fields since 1995. In an effort to increase unit output and reduce production costs, it has introduced improved rice varieties and more advanced technology. Following the intensive application of irrigation technology and the use of agricultural machinery, old paddy areas are now gradually being replanted.

Nonetheless, rice imports are continuing to increase. The Gambia's current agricultural policy is still to achieve self-sufficiency in grain production, but to reach an annual production of 80,000–90,000 tons will require the development and use of tidal irrigation. In order to do that, the close collaboration of local farmers, the government and international organizations will be required.

## Relationship Between Tidal Irrigation and Tidal Height

Tidal irrigation is very different from ordinary gravity irrigation or pump irrigation. Tidal irrigation takes advantage of the ocean tides to force river water onto fields. Use of tidal irrigation to cultivate paddy rice in areas where the water contains no salt is a very uncommon form of irrigation. Tidal irrigation can generally be used to water marshy fields with an elevation of less than 1.7 meters above the average sea level. If no elevation data are available for a certain field, the mark left by high tides along the river bank may be observed to determine whether the land is marshland or agricultural land. Tidal irrigation may be employed for all land below the flood tide mark. It is therefore necessary to perform a careful survey and make topographical maps of potential areas at the beginning of a tidal irrigation project. The topographical maps can then be used to determine the feasibility of tidal irrigation in particular areas. The heights of flood and ebb tides were carefully traced in the Sapu section of The Gambia's Middle River Division.

According to the method of calculating tide height used in Taiwan, it is necessary to find out during what times of day the flood and ebb tides occur when the maximum flood tides come around the time of the new and full moon. These times can then be used to control the amount of water used for tidal irrigation. A water control valve is ordinarily installed where water enters the system, and the system should have separate inlets and outlets. River water is allowed to flow into the system at flood tide, and the outlet valve is shut as the tide ebbs to keep the water on the fields.

Irrigation methods are different during the rainy and dry seasons. Drainage is the paramount concern during the rainy season, while irrigation is the most important consideration during the dry season. The ditches of a tidal irrigation system therefore must have a dual irrigation/drainage function. It is necessary to prevent irrigation water from overflowing the fields, and attention must be paid to controlling irrigation and drainage at the times of flood and ebb tide. There is thus an intimate connection between tide level and tidal irrigation.

## Where Tidal Irrigation Is Feasible

The three potential rice-growing areas differ considerably in ecological conditions and requirements for production. In the relatively upland areas, pumps can be used for irrigation. In the low-lying marshy areas, tidal flows can be employed for irrigation purposes. In the dryland areas, where it is expensive to pump water for irrigation, the farmers depend on natural rainfall. Unfortunately, inadequate rainfall can lead to drought and a poor harvest.

Tidal irrigation is not expensive and can be used in areas where the soil is fertile. Marshy areas along the section of the Gambia river located from 160 to 330 km from Banjul are suitable for growing approximately 50,000 tons of rice, but very little of that land is cultivated. Because the river water usually contains some salt in the area being suggested, and ordinary paddy rice plant varieties cannot be grown under such conditions, rainwater collected during the rainy season would have to be used to flush out the salt in order to grow a crop of rice. However, the middle reaches of the river, beyond the 240 km mark, are not affected by salt, and two rice crops could be grown there each year.

Some work has already been done on tidal irrigation. Between 1991 and 1996, the Small Scale Water Control Project (SSWCP), financed by the International Fund for Agriculture, developed 482 hectares of tidally irrigated land around the middle of the river, but the area is small and some of the land can produce only one rice crop per year. Other irrigation projects, which ended in the same year, were the Jahally & Pacharr Smallholders Project (JPSP), funded by the African Development Bank and the World Bank, and the Rice Development Project (IRDEP), financed by the African Development Bank. The JPSP developed 849 hectares of tidally irrigated land and 560 hectares of pump-irrigated land, but the 242.6 hectares developed by the IRDEP are all pump-irrigated.

A 20-year project which began in 1997 is the Lowland Agricultural Development Project (LADP), which is being funded by the International Fund for Agriculture and the African Development Bank. Its goal is to develop 3,735 hectares of land during the first eight-year stage, following which an assessment of whether to continue to the next stage will be conducted.

The technical mission has already performed careful surveys and made topographical maps of potential rice-growing areas that can be used to determine the feasibility of tidal irrigation in specific areas. Results of evaluations made by the technical mission indicate that the areas where tidal irrigation is feasible include Wassu, Kuntaur, Tobakuta, Sukuta and Bauajali on the north bank, and Sapu, Willirgara, Kuffzally and Yidda on the south bank in the Middle River Division.

## Economic Analysis of Tidal Irrigation and Pump Irrigation

The technical mission has made a detailed analysis of the costs and benefits of tidal irrigation and pump irrigation, taking into account fixed costs (including interest calculated at 6 percent per annum and repayment of principal over 30 years at 1.265 percent per annum), an equipment replacement reserve fund based on a replacement cycle of 30 years, and realistic operating and maintenance costs.

When all factors are taken into account—the costs of installing the irrigation systems (US\$4,000 per hectare for tidal irrigation and US\$10,000 per hectare for pump irrigation), production costs (seeds, land preparation, transplanting, fertilizer, harvesting), the anticipated rice output after implementation and the value of that output, etc.—the analysis indicates that the profit/cost ratio for tidal irrigation is 2.025, while that for pump irrigation is 0.72. It is evident, therefore, that by using tidal irrigation The Gambia could increase its rice output significantly.

## Conclusions

The Gambia is rich in water resources and possesses many favorable conditions. By fully developing tidal irrigation and using superior seed rice provided by the ROC technical mission, together with the best cultivation technology, The Gambia can greatly increase output per unit area and even attain self-sufficiency.

However, success will require increasing the cultivated area considerably and actively promoting tidal irrigation. Extensive cultivation should be adopted in the beginning, and farmers should have easy access to superior varieties of rice and training. With government support, rice cultivation can be extended to all the potential tidal irrigation areas in the Middle River Division. Besides achieving self-sufficiency at an early date, this strategy may also produce enough rice to export and earn additional foreign exchange.

If tidal irrigation is to succeed in increasing The Gambia's rice output, the following measures are required:

- Farmers must be trained in effective rice cultivation techniques.
- Farmers must learn to control and use tidal irrigation. Drainage time needs to be satisfactorily controlled during the rainy and dry seasons, and the farmers must be able to take advantage of flood and ebb tides in order to increase rice output.
- Farmers must be encouraged to change their attitudes and receive training in the use of draft animals to replace human labor, as a means of reducing costs and increasing profits.
- Farmers' associations or similar organizations need to be established or strengthened, and cooperation improved. Such associations could handle agricultural loans and savings, etc.
- Irrigation or similar associations should be established and given responsibility for managing water resources and irrigation operations, and extending irrigation facilities within their districts. These duties are currently being performed by the implementing units of the various projects, but the work is not achieving as good results as might be possible.



