

### **III. Benefits of Combined Technology Assistance Projects and Technical Mission Projects**

The ICDF's technical cooperation efforts consist of its own core technology assistance projects as well as technical mission projects commissioned by the Ministry of Foreign Affairs (MOFA). Both types of projects are implemented in accordance with the project cycle model. Staff apply a needs oriented perspective to define goals, content and timetable, with a view to deriving the maximum benefits with the resources allocated.

The ultimate goal of the ICDF's aid efforts is to "apply Taiwan's successful economic development experience to the promotion of industrial development in recipient countries, creating wealth for the local population."

There are regional aid strategies for various parts of the world. For example, the ICDF strategy for Africa is to increase grain production and reinforce medical services. In Central America, Asia Pacific and Western Asia, the ICDF is strengthening the integration of agricultural production and marketing as a means of increasing farmers' incomes, and is helping to create employment opportunities by conducting technology transfer and making appropriate investments. In the Caribbean, the ICDF is promoting agricultural diversification in order to gradually reduce dependence on imports. The intended effect is to lessen foreign exchange outflows and foster the development of multidirectional trade.

Since it began implementing technical mission operations on behalf of the MOFA, the ICDF has striven to transform the operating format of the technical missions. Rather than focusing their attention on agricultural and fishing technology demonstrations at single locations, they now spend more time conducting extension and assistance projects over whole districts. By providing in-depth technology assistance to district farmers, assisting in the organization of farmers' organizations, instilling a cooperative outlook, helping to establish post-harvest processing and marketing systems, and striving to increase farmers' real incomes, they are greatly expanding the scope of aid benefits.

The ICDF's core technology assistance projects target special national or regional needs by providing assistance and consulting services to SMEs, helping governments draft industrial growth policies, and improving the functions and mechanism of development organizations. The projects are helping recipient countries accelerate their economic development and create tangible wealth.

In cooperation projects conducted by MOFA-commissioned technical missions, personnel are stationed for long periods in the host countries, allowing them to provide sustained, in-depth assistance. This facilitates the long-term implementation and tracking of projects and promotes lasting friendship, thus achieving the dual goals of technology transfer and the exercise of citizens' diplomacy.

However, due to government budget limitations and the difficulty of recruiting professional personnel able to work overseas for long periods, it has proved difficult to recruit enough manpower possessing sufficient technical qualifications. To overcome manpower limitations, the ICDF has sometimes been able to use funds from technical assistance project budgets in order to hire ROC and foreign experts to provide short-term assistance. This is an example of how the ICDF balances its technological, manpower and financial resources in order to attain objectives and achieve maximum synergy.

MOFA-commissioned technology cooperation projects are geared toward supporting the ROC's diplomatic policies, so their content depends on the cooperation agreement between the ROC and the recipient country. Nevertheless, the ICDF performs its assessment and oversight duties in accordance with the accepted principles of maximizing results and taking into consideration overall economic benefits.

Where appropriate, the ICDF may propose the modification of projects lacking development potential or recommend a substitute project. In order to integrate foreign aid resources, the drafting of ICDF technology assistance projects may also include a set of coordinated projects meeting the needs of technical mission technical cooperation and project implementation.

Following is a description of two successful projects: a food processing project conducted in Belize and the rice growing project conducted in The Gambia.





### **Food Processing Project Conducted by the Technical Mission to Belize**

In Belize, the technical mission has been conducting a marine shrimp raising project since 1990. By providing technical assistance and establishing the country's first standard marine shrimp breeding farm, which has been supplying shrimp larvae to private raisers, the project has helped the country's shrimp industry to grow. But, after an outbreak of white spot disease, which is prevalent in shrimp growing areas throughout the Central American region, and geological conditions which affected the farm's ability to operate, the ICDF concluded that further benefits of the project would be limited. In 1999 it recommended that the project be overhauled or replaced.

At that time, the ICDF's Small and Medium Enterprises Advisory Groups in Seven Central American Countries project was providing assistance to the countries of Central America. Belize was selected as an appropriate location for the development of food processing and animal husbandry industries. The ICDF's technical specialists recommended that, in order to employ the organization's resources as effectively as possible, the food processing project replace the shrimp project. With the consensus of Belizean agricultural authorities, the ROC foreign ministry instructed the ICDF to turn its full attention to implementing the food processing project as of January 2000, with no reduction in overall aid to Belize.

The ICDF recruited Mr. Kuo Hsu-yen, a food processing specialist who had been taking part in the seven-nation project, to serve as the Belizean project's coordinator. The objective was to develop goods with market potential processed from Belize's existing agricultural raw materials. Existing food processing plants would receive technical consulting services and technology would later be transferred to emerging businesses. In the process, food processing education would be improved and more food processing personnel would be trained.



The project attracted the interest of many local food processing firms and investors, who expressed their desire to receive production technology assistance. Specialist Kuo patiently provided instruction to interested firms and helped them plan plant layout, materials management and other factors.

In light of the limited size of Belize's domestic market, it was understood that tapping foreign markets was essential if the food processing industry was to flourish. However, the materials and machinery needed to package export goods were hard to obtain in Belize, local processing firms lacked a sound quality control outlook and grasp of import and export channels, and the budget allotted to the food processing project was insufficient to meet many of the needs. To resolve the funding problem, the ICDF drew upon funds originally earmarked for the donation of equipment under the seven-nation SME development project and allocated another \$60,000. This was used to purchase various types of packaging machinery recommended by Kuo, as well as other machinery to be used for instructional purposes and the packaging of local products.

ROC food processing experts working under the seven-nation project were hired to work in Belize as needed. Seminars on technology development, quality control, factory planning, health and safety, and marketing methods were conducted, and individual businesses were given diagnostic and guidance services.

Simultaneously, Mr. Liu Ming-hsiu, the regional coordinator for the ICDF Small and Medium Enterprises Advisory Groups in Seven Central American Countries project, and the ROC Trade and Investment Service Team to Central America helped develop export channels. They sent out samples of local products to potential customers in the United States, Canada, Mexico and even Taiwan.

The Belizean agricultural authorities did their part by showcasing samples at agricultural shows and food shows held throughout Central America. As interest developed, the Central Farm of Belize offered to provide a chemical laboratory for the use of the project. The Central Farm also provided a greenhouse for use as a temporary food drying laboratory. In addition, the Department of Agriculture expressed interest in helping the Central Farm establish an agricultural product sales department. Today the food processing industry of Belize has established an embryonic production/marketing system, and prospects appear promising.

This project took advantage of the long-term presence of the ICDF technical mission to understand fully the factors that might affect the development of the food processing industry in Belize. Overcoming the problem of insufficient resources, the project successfully developed processed papaya, pineapple and mango products, resolved the problem of excess materials and slower selling goods, and created extra value. Awareness raising activities helped win the trust and support of relevant government units and local firms, making it possible for the project team to develop a feasible assistance model and establish a developmental road map for the local food processing industry.

The food processing workshops set up by the ICDF at agricultural schools helped to raise the quality of instruction and prompted Belize to begin the systematic training of food processing specialists in order to ensure sustainable development. As the local food processing industry environment matures, the ICDF plans to help Taiwanese firms and local Chinese entrepreneurs conduct investment feasibility assessments that will create new opportunities for the food industry in Belize.

The achievements in Belize illustrate the way in which the ICDF creates synergy by capitalizing on the expertise of technical mission staff in neighboring countries, working with them to implement technical assistance operations that are beyond the capabilities or resources of local mission staff.

## Rice Growing Project Conducted by the Technical Mission to The Gambia

Although rice is one of The Gambia's staple foodstuffs, the country does not produce enough to satisfy its needs and must import 60,000–80,000 tons annually. With the rapidly growing population, which has nearly quadrupled over the last 30 years, the demand for rice is continually growing. Other contributing factors to the deficiency in rice are the lack of agricultural funds and irrigation equipment, and the use of outdated cultivation technology. Rice output per unit area is a very low 1.3 to 3 tons per hectare, and is declining. Since one of the strategic goals of The Gambia's agricultural policy is to achieve self-sufficiency in grain, assistance in improving rice production can fill one of the country's urgent needs.

To achieve self-sufficiency in grain is one of The Gambia's strategic goals. At the request of the Gambian president in late 1996, the ICDF technical mission drafted a plan designed to increase the country's rice production by 25,000 tons per year within three years. The Gambia Three-Year Rice Production Doubling Project entailed the development of 2,759 hectares of extension rice paddies, the implementation of tidal irrigation on 650 hectares, and the improvement of 2,109 hectares of old paddies.

The technical mission was given an annual budget that covered support for the trial cultivation of new rice varieties, group training for farmers, and the establishment of an agricultural machinery maintenance center. The ICDF also used separate funding to commission the Taiwan Council of Agriculture's Seed Improvement and Propagation Station to perform a survey of farming practices and soil fertility in The Gambia.

The survey provided a clear understanding of soil fertility in rice growing areas and helped the specialists to plan appropriate crop varieties and amounts of fertilizer application for various farming areas. It also prompted work on how to increase soil fertility and lessen farmers' fertilizer costs by using local organic materials to produce organic compost. The planning report that was compiled proposed a growing system and implementation methods for the two annual farming seasons in The Gambia, showing how this approach could achieve the goal of doubling output within three years.

The fertilizer experiment included:

- a survey of cultivation in Gambian rice growing areas;
- a survey of the soil fertility of Gambian rice paddies (covering soil sampling and fertility analysis of rice paddies before planting and after harvest);
- an experiment on the effects of 12 kinds of fertilizer on rice cultivation, taking into account rice plant growth characteristics, output, production costs and gross income;
- a demonstration and seminar on the rational application of fertilizer, introducing local farmers to optimal rice cultivation and fertilizer application methods; and
- an organic compost production seminar teaching Gambian farmers how to use farming and livestock waste to make organic compost.

During the year in which the fertilizer project was being implemented, the Taiwan Seed Improvement and Propagation Station sent several rice and soil experts to The Gambia to perform on-site sampling and survey work, and to perform tests and analysis in cooperation with the Gambian Agricultural Test Station. Technical mission personnel also helped to conduct rice growth experiments, and performed the field management needed to reduce experimental error.

After the experiment is completed in March 2001, the results will serve to guide the technical mission's extension of rice cultivation in tidally irrigated areas, and local farmers will receive advice on application methods and optimal amounts of fertilizer. Farmers are already being helped to use local organic materials (manure, rice husks and chaff) to make organic compost, which can increase soil fertility while lessening the need for chemical fertilizer.

The fertilizer experiment has made good use of the resources and experience of agricultural research units in Taiwan. This serves as a good demonstration of how synergy can be achieved through collaboration and points to the way in which the ICDF's technological cooperation work is headed in future. Because the foreign ministry was able to give the project only limited financial support, the ICDF had to deploy its technical assistance funds at appropriate times, and to make up for lack of local experience in certain areas by drawing upon the resources of relevant government units in Taiwan. An added benefit is that presence in the field also presents opportunities for agricultural research units in Taiwan to further their own research.