

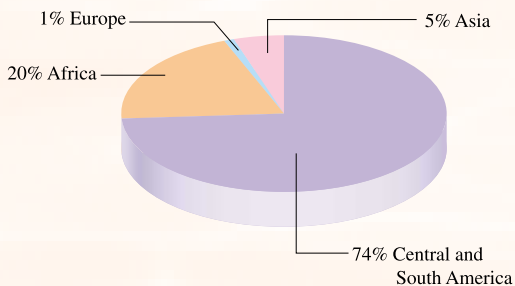
TECHNICAL COOPERATION

The ICDF provides technical cooperation services in five major fields: (1) guidance and advisory services for small and medium enterprises, (2) capacity building, (3) special research projects, (4) volunteer programs and (5) projects commissioned by MOFA. Sixteen of the technical cooperation projects undertaken in fiscal 1999 are summarized in Table 3.

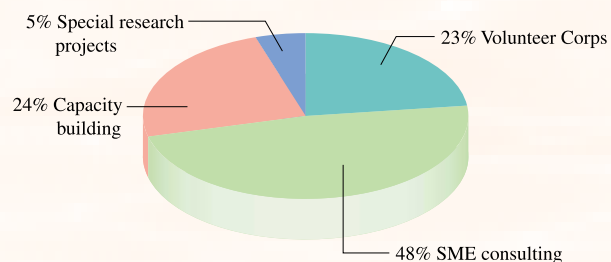
Expenditures for the year's technical cooperation projects totaled US\$4.52 million. Of the total budget, 74 percent was spent in Latin America, 20 percent in Africa, 5 percent in Asia Pacific, and 1 percent in Europe. By type of service, SME guidance and consulting consumed US\$2.16 million (48 percent), capacity building US\$1.05 million (24 percent), special research projects US\$220,000 (5 percent), and the volunteer program US\$1.04 million (23 percent).

On behalf of MOFA, the ICDF managed 38 technical missions, consisting of 310 persons working in 33 partner countries in Africa, Latin America, the Caribbean, Europe, the Asia Pacific region and the Middle East. These technical missions are helping to raise the standard of living of the people in partner nations by assisting them to develop their agriculture, fisheries, animal husbandry, handicrafts manufacturing, investment, SMEs, exports, transportation infrastructure, health care, etc. A full description of the technical missions and their activities appears later in this chapter.

Technical Cooperation by Region



Technical Cooperation by Type of Project



SME Advisory Programs

The ICDF's SME advisory group and consulting programs specialize in sending experts overseas to assist partner countries in drafting SME-related policies and to guide them in developing strategic industries.

Understanding that economic development is the key to escaping poverty and creating wealth, the ICDF takes into consideration the long-range economic strategy of each country when it undertakes advisory programs. At the same time, it relies on the ROC's own successful developmental experience, especially in the case of SMEs, in the expectation that the sharing of that experience will enable partner countries to draft strategies that are appropriate to their particular needs. The ROC's SME experience is particularly relevant in areas such as credit guarantee funds, industrial synergy schemes, industrial development strategies and export promotion.

In offering guidance to strategic industries, the ICDF's experts help partner nations to establish the most beneficial and competitive industries in light of their existing resources, level of industrial development and industrial policies. Based on an analysis of industrial advantages, weaknesses, developmental opportunities and potential threats (SWOT analysis), the ICDF drafts an industrial guidance plan and timetable.

To ensure that tangible benefits can be achieved with a limited commitment of resources, the ICDF's SME advisory groups are concentrating on prospective entrepreneurs. Fields of assistance include comprehensive factory planning, materials management, process streamlining, quality control and troubleshooting. Firms that receive guidance are requested to assign technical or management personnel to implement improvements in order to ensure that the technology transfer is beneficial.

The ICDF also arranges for specialists to conduct small-scale seminars overseas. These seminars, in which actual experiences are shared, have proved to be very helpful to local entrepreneurs.

During the 1999 fiscal year, SME advisory groups were sent to the Dominican Republic and Swaziland, and an industrial synergy consulting team went to Paraguay. Ongoing projects included SME advisory work in Senegal and seven Central American countries, in addition to the vegetable research consulting services being provided to five Central American countries.

Capacity Building Projects

Since there is no better catalyst to economic growth in developing nations than an effective government, the ICDF's advisory services also endeavor to improve the functioning of government departments or agencies.

The ICDF's current approach to capacity building work often starts with the donation of computer equipment and the providing of related consulting services. The objective is that the donated computer equipment will, by upgrading or augmenting hardware, improve the way the government departments function or render service to their clients or the public. In order to achieve the greatest possible benefits, the donation is supported by consulting services on personnel training or management skills.

In other cases, agricultural implements may be donated in order to support the activities of technical missions in partner nations or to respond to manifest needs.

The major capacity building projects completed in 1999 are: a capacity building project with the Liberian department of trade and economics, a rural economic productivity improvement project for Chad's department of agriculture; a gift of agricultural implements to Senegal; and administrative efficiency improvement projects in the Solomon Islands, Nauru and Tuvalu.

Among the continuing projects were the product packaging and inspection centers that are being established in seven Central American countries; an agricultural diversification and agricultural processing project in the East Caribbean; and a small-scale vocational training center in Burkina Faso.

Special Research Projects

The purpose of the ICDF's special research projects is to study relevant economic, social, educational and agricultural issues in partner countries, and to use research methodology to perform focused, in-depth analyses and evaluations that will serve as the basis for recommendations to governments on policy making. The research findings also help the ROC to understand better the needs of the partner nation.

Two special research projects were conducted in fiscal 1999, both for The Gambia: the first on the effect of fertilizer application on rice production and the second on reform of the technical education and vocational training system.

A description of the technical cooperation projects follows.

Seven Central American Countries: SME Advisory Groups

Three policy seminars were held in Central America and 34.3 person-months of expert assistance was given to the countries of the region to help them draft individual strategic industry development plans, nurture SMEs and improve the functioning of government agencies.

Guidance services were provided to the Costa Rican metal processing and manufacturing industries; the Nicaraguan garment and shoe industries; the Belizean animal raising industry; the Panamanian food processing industry; the Guatemalan food processing and metal machinery industries; and the Honduran metal machinery industry.

Five Central American Countries: Vegetable Research Project

This program, a collaborative effort between the ICDF, the IDB and the Central American Bank for Economic Integration, is in its third year of implementation. Its main objectives are to train specialists in vegetable breeding research and to perform experimental cultivation of crop varieties provided by the Asia Vegetable Research and Development Center. Specific tasks include the conservation of rare varieties, the improvement of breeding stock, pest management and crop commercialization.

Dominican Republic: SME Advisory Group

Forty person-months of assistance were provided to the Dominican Republic with the objective of establishing strategic industries, raising the country's industrial output and improving the competitiveness of local products in international markets. Tasks included the establishment of a guidance organization for SMEs; advisory services for strategic industries, such as plastics manufacturing, textiles, wood furniture and fruit/vegetable processing; investment consulting; promotion of industrial synergy; and the holding of seminars on related topics.

East Caribbean: Agricultural Diversification and Agricultural Processing

The goal of this project is to help the nations of the East Caribbean to diversify their agricultural production by finding suitable substitute crops, upgrading cultivation technology, and improving the processing of agricultural products. Experts went to the region to evaluate the agricultural processing and poultry industries and to assess the feasibility of establishing a fruit juice processing plant in Grenada.

Paraguay: Development of Industrial Synergy

At the request of the Inter-American Development Bank, the ICDF sent an industrial synergy specialist to Paraguay to perform two months of consulting work, with the goal of creating synergies by bridging the gap between large enterprises and SMEs in that country. The work included selecting representative local industries, performing an assessment to determine feasible cooperation schemes, and carrying out an actual industrial synergy implementation plan.

Senegal: Donation of Agricultural Implements

This project involved the donation of animal-drawn agricultural implements to Senegal to promote the use of animal power in the farming districts of southern Senegal. The implements provided through this project will help increase farmers' income and improve their quality of life. Funds for the project were disbursed in March 1999.

Swaziland: SME Advisory Group

The purpose of the project was to help Swaziland establish a local SME manufacturing industry and strengthen the government's role in helping this industry. In response, the Swazi government allocated a budget to establish an SME unit (similar to the ROC's Small and Medium Enterprise Administration, MOEA) in April 1998.

Results after two years of implementation include the establishment of an SME incubation center, a government SME office and an industry cooperative. Various evaluations and seminars were held in fiscal 1999 and consulting services included business management seminars, investment planning research, credit guarantees and advice on SME incubation.

Senegal: SME Advisory Group

The objectives of the project are to help Senegal establish small local industries, upgrade the garment and agricultural processing industries, improve general management and marketing standards, and ultimately assist the government to establish an extensive SME guidance system. Tasks include collecting information on Senegal's SME and marketing experience, performing special evaluations, selecting target industries, drafting guidance plans, tapping sources of financing, and holding credit guarantee and loan seminars.

Seven Central American Countries: Packaging and Inspection Center Project

Included in this project are a donation of packaging and inspection equipment, the establishment of a packaging and inspection center at the University of El Salvador, and the holding of a laboratory quality management class and three packaging specialist training classes. More than 80 trainees from the seven Central American countries attended the laboratory quality management class and two packaging specialist training classes that were held this past year.

Solomon Islands, Nauru and Tuvalu: Capacity Building

The goal is to help key governmental departments of these three South Pacific nations to install and use computers, in order to render more efficient public service. Included are the donation of computer equipment to the Solomon Islands, Nauru and Tuvalu, the holding of computer hardware maintenance classes and the teaching of computer skills.

The Gambia: Effect of Fertilizer Application on Rice Production

In order to help the ROC technical mission in The Gambia achieve its task of expanding rice production, experts in crop cultivation, soil fertility, farmers' organizations and extension education were sent to this African country. Their task was to study the effect of fertilizer on rice harvests and to conduct demonstration projects.

Burkina Faso: Small-Scale Vocational Training Center

The goal of this project is to assist the government of Burkina Faso to set up a garment manufacturing training center. It is expected that the establishment of this training center will, by enabling Burkina Faso to manufacture substitution products for domestic use, lessen its dependence on foreign imports. The signing of documentation, bidding for equipment and selection of instructors were completed in early 1999.

Chad: Program to Develop the Rural Economy

This program involves the donation of agricultural implements to farmers in Chad in conjunction with the development of 500 hectares of paddy fields in the Bongor district under the guidance of the ROC technical mission. The gift of agricultural implements, coupled with training in the use and care of the new tools, will accelerate the completion of the cultivation project, increase rice output and boost farmers' profits.

Liberia:**Capacity Building Project for Department of Trade and Economics**

The project will assist the Liberian government's department of trade and economics to upgrade its information collection and analysis capability, thereby improving its operational and administrative efficiency. It includes the donation of computer hardware and the training of personnel in techniques for collecting, organizing and analyzing economic data. The project has now been completed.

The Gambia:**Review of Technical Education and Vocational Training System**

The objective of this project is to understand fully the evolution of the vocational education system in The Gambia, and the problems encountered in delivering that education. Special attention is being paid to such topics as the foundation and goals of vocational training in The Gambia, the design of curricula, the instructional materials used, the recruiting of teachers and the career prospects of the students.

The project will lead to the development of assistance strategies whereby the ROC government will assist The Gambia in reforming its vocational education system.

**Table 3: Summary of 1999
Technical Cooperation Programs**

Program	Goals	Status
Seven Central American Countries: SME Advisory Groups	To assist in drawing up SME development policies, developing an industrial division of labor, improving competitiveness, promoting production and exports, and eliminating poverty.	34.3 person-months of assistance in fiscal 1999
Five Central American Countries: Vegetable Research and Consulting Services	To help the Central American countries to train horticultural research personnel and establish a regional cooperative research and development framework that will raise vegetable quality and output.	87.63 person-months of assistance provided
Dominican Republic: SME Advisory Group	To assist SME guidance organizations in the Dominican Republic and train their guidance personnel. To contribute to the development of private sector SMEs, nurture managerial talent, and raise SME productivity and product quality.	Completed
East Caribbean: Agricultural Diversification and Processing	To assist the East Caribbean countries to diversify their agricultural production by helping them find appropriate substitute crops, improve cultivation technology, and strengthen the post-harvest processing of agricultural products.	Evaluations of the agricultural processing industry, poultry industry, and a proposed fruit juice processing plant were completed in 1999
Paraguay: Development of Industrial Synergy	Advisory services to assist in the establishment of an integrated industrial synergy network that will foster cooperative relationships between SMEs and large enterprises in Paraguay, and enhance the competitive ability of local SMEs.	Completed
Senegal: Donation of Agricultural Implements	To assist Senegal to establish appropriate small-scale industries, improve local garment and agricultural processing industries, raise management and marketing standards, and establish a comprehensive SME guidance system under the government.	Completed
Swaziland: SME Advisory Group	To assist Swaziland to establish SMEs; nurture management personnel; boost the standards of manufacturing, management, and marketing at local SMEs; and alleviate financing difficulties facing ordinary SMEs.	Completed

Program	Goals	Status
Senegal: SME Advisory Group	To assist Senegal in establishing specific small-scale industries, raising the standards of manufacturing, management and marketing in the local agricultural processing industry, and establishing a comprehensive SME guidance system under the government.	Under negotiation
Seven Central American Countries: Product Packaging and Inspection Center Project	To assist the Central American countries to improve packaging design, product packaging, boxing, and binding technology and quality, in order to raise the export competitiveness of their products.	Laboratory QC and secondary packaging training classes were completed in 1999
Solomon Islands, Nauru and Tuvalu: Capacity Building Project	To assist the fisheries and economic development departments of the governments of these three South Pacific nations to install and use personal computers.	Completed
The Gambia: Research on the Effect of Fertilizer Application on Rice Production	To support the rice production expansion project and the extension of rice cultivation.	Project evaluation completed
Burkina Faso: Small-scale Vocational Training Center Project	To help Burkina Faso establish a small-scale vocational training center that will give the country the skilled personnel needed for industrial development. To help the country lessen its trade imbalance by establishing small-scale industries producing import substitute goods.	Document signing and purchase bidding completed
Chad: Program with Department of Agriculture to Develop the Rural Economy and Raise Productivity	To help Chad's Department of Agriculture improve its data collection and analysis capability, to enhance its operational and administrative efficiency.	Completed
Liberia: Capacity Building Project	To help Liberia's Department of Trade and Economics improve its data collection and analysis capability, in order to enhance its operational and administrative efficiency.	Completed
The Gambia: Review of Technical Education and Vocational Training System	To provide suggestions to the Gambian government for improving the technical education and vocational training system, and to develop assistance strategies whereby the ROC will assist The Gambia in reforming its vocational education system.	Completed

ROC Volunteer Corps

As in past years, the ICDF made a special effort to match the skills of the Volunteer Corps with the needs of partner nations.

Once again the ICDF commissioned the China Youth Corps (CYC) to perform the recruiting and testing of volunteers. This year the volunteers brought a broader range of skills and areas of specialization. Fourteen new candidates were selected from among 152 applicants. After one month of intensive training, the volunteers went to work in Costa Rica, Senegal, São Tomé and Príncipe, the Solomon Islands and Tuvalu.

Twelve of the volunteers are teaching computer skills, mathematics and Chinese language. In response to expressed needs, a male agricultural intern was assigned to one of the technical missions and a female medical intern was sent to work with one of the medical missions. There they are performing administrative tasks, helping to implement cooperative projects, collecting data and maintaining contact with local partner units.

The internships are opening up new sources of volunteers, raising the effectiveness of the missions, and providing volunteers with a route to future participation in technical cooperation projects.

MOFA-commissioned Technical Assistance Projects

In fiscal 1999, all of the ICDF's overseas missions followed a project cycle model in accomplishing their technical cooperation tasks. A balanced appraisal of cost and economic benefits was made under the preconditions of feasibility and rationality; project duration, budget and manpower needs were drawn up in accordance with project orientation; and every effort was made to achieve the greatest possible results with the minimum expenditure.

Taking into consideration the individual characteristics and needs of recipient nations, the ICDF has nonetheless formulated aid strategies that reflect regional attributes. For example, the ICDF's African strategy focuses on improving grain production and medical services; the strategy for Latin America and Indonesia emphasizes the linkage between production, marketing and investment; and the Caribbean strategy promotes agricultural diversification as a means of creating local employment opportunities.

The ICDF requires that all technical cooperation projects carried out by its missions conform to overall strategies and be technically and economically feasible. Moreover, in order to realize the full benefits of cooperative projects and to create wealth for the citizens of partner nations, the ICDF has strengthened project oversight. This ensures that projects are completed on schedule and that problems and obstacles encountered during implementation are resolved expeditiously. The experience gained is used to guide future project design and implementation.

Raising the Qualifications of Mission Staff

As part of an effort to increase professionalism throughout the organization, the ICDF paid special attention during fiscal 1999 to raising the qualifications of personnel working in overseas technical missions. Besides requiring that newly hired staff have at least a master's degree in addition to relevant work experience, the ICDF also strengthened on-the-job training for current mission members. Now, when they return to Taiwan following a stage of service abroad, overseas mission staff are required to attend seminars at an agricultural improvement station or research institute.

The ICDF has begun providing outstanding mission members with the opportunity to study in a master's degree program at National Pingtung University of Science and Technology. It has also selected a coterie of reserve instructors with master's degrees or above to serve as technical mission interns overseas.

In response to a steadily shrinking budget for MOFA-commissioned projects, the ICDF has tried to maintain its level of service by gradually reducing personnel expenses while simultaneously raising service expenses. In 1999, one of the ways in which it reduced personnel expenses was by assigning specialists (such as irrigation specialists and agricultural machinery technicians) to entire regions, where they can provide mobile support to more than one technical mission. Generally, when technical missions need professional assistance, senior experts from Taiwan are being sent overseas on a short-term basis. The field instruction and hands-on learning opportunities delivered by these experts will help to strengthen further the professional skills of technical mission personnel.

Broadening the Scope of Technical Cooperation

In order to broaden the scope of technical cooperation with partner nations and to increase the benefits to farmers, the ICDF's technical missions are increasingly abandoning demonstration projects in favor of expanded extension and assistance with agricultural processing and the establishment of marketing systems. The ICDF is accelerating its shift from the traditional agriculture/fisheries cooperation model to a strategy emphasizing the creation of wealth through trade and investment. Thus a move to increased assistance for small and medium enterprises. An example is the work being conducted by the ICDF's technical mission in Macedonia.

In other parts of the world, where the ROC embassy or representative office has no attached personnel from the Ministry of Economic Affairs or CETRA (the ROC's export promoting branch), the ICDF is now sending specialists to perform trade-related services. In fiscal 1999 it dispatched two such persons to Grenada and the Solomon Islands. Their task is to collect business information in the nations in which they are stationed, to search for commercial opportunities, to promote bilateral economic and trade interchange, and to invigorate bilateral commercial activities.

Technical Mission Achievements

The work of the technical missions falls into seven major categories:

1. Increasing crop production (as in The Gambia, Malawi, Papua New Guinea, Senegal, Swaziland, etc.);
2. Developing horticultural crops (El Salvador, The Gambia, Honduras, Indonesia, St. Christopher, etc.);
3. Shrimp culture, saltwater/freshwater fish farming and inshore fishing projects (Costa Rica, Dominican Republic, El Salvador, Honduras, Indonesia, etc.);
4. Improvement, raising and veterinary care of livestock and poultry (Honduras, Indonesia, Nicaragua, Paraguay, St. Vincent, etc.);
5. Guidance for bamboo handicraft manufacturing industries (Costa Rica, Dominican Republic, Guatemala, Swaziland, etc.);
6. Promoting trade and investment (Grenada, Macedonia, Solomon Islands); and
7. Medical health services (Burkina Faso, Chad, São Tomé and Príncipe).

A description of the major accomplishments of each of the technical missions, under the first six categories, follows by region. The work of the medical missions stationed in the three African nations is reviewed at the end of this section.

AFRICA

Burkina Faso Technical Mission

Bagré Dam Land Development: As part of the third phase of the development of agricultural land on the right bank of the Nakambé River, the mission completed construction of 5,029 meters of the main ditch. It also finished surveying an additional 150 hectares of land to be developed in fiscal year 2000.

Rice and Vegetable Extension Project: This involved the cultivation of 11.3 hectares of purification paddies, the development of 1,000 hectares of new fields, the extension of 1,000 hectares, and training of 4,000 farmers.

Chad Technical Mission

Rice Project: The technical mission extended land cultivable for rice to 920 hectares. It trained 720 households in the growing of rice and produced seed rice on 1.25 hectares.

Vegetable Project: In this project, the Chad technical mission developed 24 hectares of land for cultivation of vegetables, plus a 1.5-hectare area for experimentation purposes. It trained 60 households, residing on six main farms, in the production of vegetables.

The Gambia Technical Mission

Vegetable and Rice Improvement Projects: The Gambian technical mission demonstrated cost-effective vegetable seedbed cultivation methods designed to produce neat, sturdy and easy-to-manage seedlings. The staff instructed farmers on how to grow various types of vegetables, with the result that 141.9 metric tons of vegetables (worth US\$62,970) were grown.

Over an area of 622.15 hectares, the mission cultivated rice and harvested 100 metric tons of seed rice. It also conducted a project to expand rainy-season paddy rice production to 400 hectares.

The women's vegetable production extension program established by Sukuta prepared an area of 8.16 hectares and organized 200 farming households. An underground irrigation system is almost complete; 284 farmers have been trained; and 29 agricultural extension personnel are providing their services.

Agricultural Machinery Center: In a preliminary project to grow rice on tidally-irrigated fields, planting was completed, a farm machinery shop and warehouse were built, and an irrigation system was constructed.

Twenty-two persons took part in rice-growing training, 603 farmers attended lectures, and 146 persons received training in operating agricultural machinery. This project, which has been praised widely in The Gambia, made a major contribution to improving the local economy and the farmers' standard of living.

Liberia Technical Mission

Rice Extension Project: Over the past year the technical mission in Liberia cultivated 4.9 hectares of seed rice fields and extended an additional 60 hectares of cultivable land in the Garwula Tambe district. They also trained 36 persons in rice cultivation.

Vegetable Project: The vegetable project saw the cultivation of five hectares of vegetable fields, the preparation for planting of 40 hectares of fields, and the planting of vegetables on 10 hectares in the Suakoko district. Also, the mission trained 60 persons in vegetable growing skills.

Malawi Technical Mission

Horticultural development, extension and training occupied the staff of the Malawi technical mission. They oversaw the extension of 42 hectares of horticultural fields and the training of 292 persons. Extension of land suitable for growing grain opened up 4.2 hectares of land and offered opportunities for training to 126 persons.

The technical mission donated 5,000 kg of Pussa 33 seed rice and 10,000 kg of China seed rice to the Malawian government for distribution to local farmers. It also assisted in the production and marketing of 500 hectares of rice in the Domasi area. In addition, sweet potato seedling beds were grown on 1.2 ha and used to plant 0.15 ha of beds near Zomba ADD and 0.1 ha of beds near Domasi; 1.4 ha of cassava seedling beds were cultivated; and pest sampling and quarantine were performed.

São Tomé and Príncipe Technical Mission

This technical mission, which was established on 25 January 1999, cultivated one hectare of land and completed trial planting on it of 53 varieties of grain. On 5 April, it occupied the Mesquita experimental farm and prepared to intensify its grain and vegetable improvement projects.

Senegal Technical Mission

Rice, Vegetable and Floriculture Projects: In the northern part of the country, the technical mission trained 3,290 farmers in the “deep-water, direct-seeding” method of rice paddy cultivation. Rice was planted on more than 1,800 hectares, and an average yield of more than 5 tons per hectare was achieved—a distinct improvement over the past, when it was usual to grow only one crop of dryland rice per year.

In southern Senegal, the technical mission promoted half-year dryland rice cultivation and half-year land reclamation on 320 hectares of fields. Rice planted during the previous year was successfully harvested, and the mission staff turned to the major tasks of extending cultivation and organizing farmers’ groups.

Two hundred hectares of vegetables and one half hectare of flowers were planted.

Aquaculture: The technical mission actively promoted aquaculture and demonstrated the commercial possibilities by developing 3,000 strings of oysters and tilapia ponds covering 2.5 hectares.

Swaziland Technical Mission

Maize and Sweet Potato Extension: The staff of the technical mission helped smallholders to grow 1,227 hectares of maize, with 397 new families participating in the project. Also, a 9-hectare sweet potato seedling bed was established.

Royal Project: A project sponsored by the royal family provided two sessions of theoretical classes for new farmers and made possible demonstrations of 5 hectares of paddy rice, 2.8 hectares of fruits and vegetables, and 1 hectare of miscellaneous crops.

Handicraft Training: The handicraft mission in Swaziland has helped establish a training center comprising a library, materials supply center and multi-purpose R&D shop. This center holds regular training classes in wood, stone and leather carving, ceramics, art design, sewing, garment design, mechanical skills, electrical repair, computer word processing, etc., and sends out roving teams to provide instruction in handicraft production.

The mission staff help persons who have completed their training to start businesses and sell their products. To date, 86 persons have graduated from the training program, and another 246 persons have been trained by roving instructional teams. The handicrafts training center is very highly regarded by the Swazi government because of its contribution to the development of family handicrafts in rural Swaziland, the improvement of product quality and the creation of sources of supplementary family income.

ASIA PACIFIC

Fiji Technical Mission

Off-season Vegetable Cultivation Extension: The technical mission conducted experimental planting over 1.8 hectares and extended vegetable cultivation to 23.6 hectares. In addition it performed 10 experimental plantings of vegetables and conducted selective breeding of muskmelon and taro varieties. It also organized 10 production and marketing cooperatives and trained 153 persons.

Sustainable Sugar Development Project: Pursuing its work on the sustainable sugar development project, the technical mission completed 23 field experiments and continued experimenting with mechanization on three plantations.

Indonesia Technical Mission

Agriculture and Animal Husbandry: Technical mission staff members worked diligently on (1) animal husbandry, (2) horticultural crop agribusiness, (3) a soybean project, and (4) an edible mushroom production and marketing project.

In addition to raising beef, sheep and goats for meat and dairy purposes, the staff gave cattle- and goat-raising demonstrations and trained 300 persons in animal husbandry. The mission promoted new, money-saving techniques that were much appreciated by the local people, such as totally mixed daily feed rations and the use of plastic bags as an effective and inexpensive method of holding silage.

The Indonesian technical mission staff have been helping farmers in the counties of Sleman, Boyolali, Purworejo and Magelang to grow crops with higher commercial potential: peas (grown successfully on 21 ha), asparagus (40.2 ha), cauliflower (21.8 ha), bitter melon (13.5 ha), red beans and cherry tomatoes. In the past year they helped the farmers to establish a production and marketing system comprising 46 cooperatives which sold almost 80 tons of vegetables. Eight hundred persons attended the mission's 80 classes on crop management techniques and agribusiness management, and 3,560 persons in all were trained.

Soybean Project: The soybean project involved the cultivation of 1.5 hectares of land and the training of 60 persons. The mission performed selective breeding of 50 outstanding strains of soybean and completed experimental planting of the highest yielding strains, with output 19 percent greater than the local varieties.

Mushroom Production and Marketing: The staff assisted the local farmers to construct 400 mushroom sheds and trained 375 persons, and they helped the production and marketing cooperatives to transport and sell 18,600 kg of dried mushrooms.

Aquaculture Project: The technical mission conducted high-density milkfish (perch) and grass shrimp culture experiments. In addition, it continued to implement a large-scale fish pool experiment to facilitate extension; a project focusing on fish food species (marine green algae, marine rotifers, harvest shrimp) which it will be possible to raise locally; and an experimental project in which it raised 250,000 sea bass and 100,000 milkfish. It demonstrated the raising of grouper fry and performed trial marketing experiments of these and other high-value fish. Sixty-six trainees attended lectures on aquacultural management for grass shrimp, milkfish, marine fish and other species, and 600 persons in total were trained.

Nauru Technical Mission

Vegetable and Fruit Projects: As part of the experimental introduction and selection of new vegetable and fruit types suited to this island nation, the technical mission developed a one-hectare demonstration field and trained eight persons. It introduced and tested drought-resistant fruit and succeeded in growing 917 kg of vegetables and 926 kg of papayas.

Poultry Project: In a project centering on the introduction and selection of new types of poultry for Nauru, the technical mission successfully hybridized and selected local poultry. It built 170 spring chicken sheds and warehouses and 238 laying sheds and oversaw the production of 2,300-2,600 dozen eggs per month. The mission staff also trained 15 persons in poultry raising techniques.

Palau Technical Mission

In connection with a demonstration and extension project of horticultural and upland crops, the mission cultivated 3 hectares of land and extended an additional 27.6 hectares. It established and extended professional farms operated by four households to 42 households.

Papua New Guinea Technical Mission

The mission oversaw two major projects: a grain production initiative and a production and marketing project for vegetables and upland crops. It helped local farmers reclaim and cultivate 12 hectares in the Markham Valley for the cultivation of rice, vegetables and other grains and reclaimed 5 hectares of marshland at Bow Community, while training farmers in the paddy method of cultivating dryland rice. Yields of greater than 6 tons per hectare received much local attention.

In collaboration with Papua New Guinea's Department of Agriculture, the technical mission instructed farmers in the Huon region in the cultivation of rice, mixed crops and vegetables in October 1998. Rice was grown on 36 hectares, upland crops on 62 hectares, and vegetables on 21 hectares. At harvest time the farmers gathered 7,791 kg of seed rice and 1,006 kg of seed maize, red beans and gourds.

Approximately 1,800 persons attended the 33 training lectures given by the technical mission staff.

Thailand Technical Mission

The Royal Cooperative Research and Development project saw the cultivation of 10.4 hectares and the extension of 72 hectares of land, as well as the training of 439 persons.

In northern Thailand, the technical mission organized the mixed farming and forestry research and training project. It cultivated 40 hectares and succeeded in extending cultivable land by an additional 13.44 hectares. It also trained 439 persons.

Solomon Islands Technical Mission

Rice and Vegetable Crops: The technical mission assisted local farmers in the reclamation of paddy fields and the production and sale of rice. At Metapona, as part of the second stage of a farmland reclamation project, a 5-km farm road was completed and two warehouses were constructed.

Under the technical guidance of the mission, rice, dryland crops and vegetables were cultivated on 35.7 hectares; 13.6 hectares of paddy fields were reclaimed in the Loi and Fui areas of Malaita province; and vegetables were grown on 38.2 hectares.

The mission promoted the cultivation of dryland rice and rotation of dryland crops as a means of reducing production costs and achieving greater economic efficiency. Forty-two hectares of dryland rice fields were reclaimed and cultivated in Guadalcanal, Isabel and Western provinces; dryland rice was cultivated on 63.8 hectares; and vegetables and other dryland crops were grown on 12.1 hectares.

The staff of the mission provided training on various aspects of the cultivation of rice, dryland crops and vegetables, and the repair and maintenance of agricultural machinery. Training was given to 40 extension personnel and core farmers and 571 local farmers. Following the introduction of new varieties of rice and vegetable seeds and the conducting of cultivation experiments, 8.6 metric tons of seed rice, 890 kg of seed maize and 273 kg of seed peanuts were produced.

Trade: Reflecting the ROC's trade-oriented diplomatic policy, a specialist in trade was stationed in the Solomon Islands for the first time. His role is to assist in developing external trade activities in the Solomon Islands and to promote bilateral investment and trade with the ROC.

CARIBBEAN

Dominica Technical Mission

As part of a horticultural crop development project, the technical mission extended cultivable land by 3 hectares.

An active freshwater fish and shrimp culture project saw the raising of 700,000–1,000,000 freshwater shrimp and the training of three households in agriculture. As a result of the guidance provided by the technical mission, supported by government demonstrations, local income was increased by US\$121,412.

Dominican Republic Technical Mission

In this country, the technical mission worked on several projects, including rice improvement, horticulture, hog raising, freshwater fish fry breeding and saltwater shrimp breeding and extension.

Aquaculture: The mission brought in 1.5 million white shrimp larvae from Ecuador and was successful in raising 568,000 freshwater shrimp larvae. Some 120,000 bottom-dwelling freshwater shrimp larvae were raised at a work station, and 90,000 inch-long white shrimp were provided to local shrimp raisers. Work on algae culture and breeding continued, and a freshwater fish project made possible the release of 175,000 tilapia and carp fry in fish ponds.

Bamboo Handicrafts: The mission was successful in training the people in bamboo handicrafts. Bamboo furniture training began on 1 August 1998, with an elementary class of 15 students and an advanced class of two students. Within the month, 42 persons had signed up for an intensive month-long training class, during which they learned how to select materials and improve their skills.

Grenada Technical Mission

Horticultural Crops: The technical mission concentrated on horticultural crop experimentation and extension and aquaculture. It extended 35 hectares for the cultivation of horticultural crops and trained 92 persons in the required skills. Extension planting included 3,600 *Anthurium* and other seedlings.

Aquaculture: The aquaculture project saw the breeding of 200,000 shrimp larvae, the extension of raising ponds to 5 hectares and the training of 14 households.

Trade: As in the Solomon Islands, a trade specialist was stationed in Grenada for the first time. His role is to assist in the development of external trade activities in Grenada and to promote bilateral investment and trade with the ROC.

Haiti Technical Mission

The technical mission in Haiti concentrated on rice improvement and bamboo cultivation. It extended 672 hectares for the growing of rice by 1,030 households and trained 147 persons in the technical aspects of rice growing.

The bamboo cultivation and processing project was launched with the successful planting of 2,000 bamboo seedlings.

St. Christopher Technical Mission

The technical mission in St. Christopher assisted with the extension and cultivation of vegetables on 42.78 hectares. The staff cultivated 2.91 hectares as a demonstration field and gave vocational and practical skills training to 30 prisoners and 280 high school students.

In addition to growing 2,731 fruit tree seedlings and giving them to farmers for planting on 1.7 hectares, the mission assisted in the reclamation of almost 4 hectares of land. As a result of the guidance given to farmers and the St. Christopher government's demonstration fields, the mission received extra revenue of US\$118,358. A 1.5-hectare demonstration of fruit tree cultivation yielded 6,765 lbs of fruit, which was sold by the Bureau of Agriculture and Forestry for US\$5,033.

St. Vincent Technical Mission

Hog Breeding Project: The St. Vincent technical mission carried out a hog breeding project that provided 26 purebred hogs for St. Vincent's national hog breeding center, along with their 178 purebred offspring. Hogs bred by artificial insemination included 532 L/Y hybrid sows and 7,836 L/Y/D fattening pigs. The work of the mission helped to increase St. Vincent's pork output by 44 metric tons, worth approximately US\$1.7 million.

Agriculture: The members of the mission also participated in an agricultural and horticultural crop demonstration project, extending the cultivable land by 2.5 hectares and training 13 households.

Bamboo Handicrafts: In a bamboo handicrafts training project, transferred to St. Vincent in January 1999, the mission trained eight persons in the second half of fiscal year 1999.

CENTRAL AND SOUTH AMERICA

Belize Technical Mission

The technical mission in Belize concentrated on three principal projects: rice production and technology; vegetable and miscellaneous grain improvement; and saltwater shrimp breeding.

Rice: The rice project saw the cultivation of 8.5 hectares of land, the extension of 8.6 hectares and the training of 85 persons.

Vegetables: Two hectares of vegetables were cultivated and an additional 27.6 hectares were extended for this purpose. More than 600 persons were trained to grow vegetables.

Aquaculture: When difficulties were encountered in the selling of the White Pacific shrimp bred with the assistance of the mission staff, it was decided to change the project from raising saltwater shrimp to freshwater shrimp and domesticated snook.

Costa Rica Technical Mission

Aquaculture: The Costa Rican technical mission carried out a variety of aquaculture projects, raised 355,750 tilapia fry, provided instruction on ultra-high-density tilapia culture techniques, held aquaculture lectures for 20 persons, and conducted two-month training sessions for POCOC vocational school students.

Working with the Costa Rican Vocational Training Bureau, the staff trained 30 lecturers and 480 students and fishermen in deep-sea tuna and squid fishing, guided them in raising sailfish and tuna, and transferred shipboard skills such as navigation, fishing and engine operation to 15 persons. They also produced a handbook on extension for east coast fishermen and provided a variety of teaching materials.

Bamboo Handicrafts: The handicraft mission in Costa Rica provided professional training in bamboo handicrafts and furniture making. Twenty sessions of introductory and advanced training were held, and 493 persons completed training.

An upper-level class held since 1998 has produced very good results. The exquisite products made by the trainees are displayed in an exhibition hall inside the training center, where they can be viewed by the public. This training center has been selected by the Costa Rican Department of Tourism as a major sightseeing attraction, and is regularly toured by heads of state, distinguished visitors and tourists.

Ecuador Technical Mission

Rice Project: The mission grew rice on 309 hectares and extended an additional 8 hectares. It trained 100 persons in the growing of rice, held five exhibitions and gave a series of six lectures.

Vegetable Project: The staff provided technical support and guidance to large farms and assisted in the growing of vegetables on 80 hectares and fruit trees on an additional 80 hectares. They trained 126 persons in the growing of vegetables.

El Salvador Technical Mission

Horticulture: The technical mission in El Salvador extended the cultivation of fruits, vegetables and flowers to 110.89 hectares worked by 298 households; gave lectures to 172 persons; arranged field demonstrations attended by 225 persons; and gave out 426 kg of seeds. On an experimental basis, the mission helped grow 9,000 papaya plants at 17 locations, giving out 5,000 papaya seedlings under the supervision of the ROC ambassador and the Salvadorean minister of agriculture.

Approximately 400 lbs of gourd, pumpkin and red bean seed were grown and used for extension purposes; 290 hectares of cold-climate vegetables were grown at Las Pilas; a field demonstration of the harvest of 181 hectares was conducted; and cultivation lectures were given to 223 persons.

The staff gave instruction to 635 farmers in the planting of seedlings grown in trays, improved cultivation methods, common pest prevention techniques, organic fertilizer use, and the operation of small agricultural implements.

Aquaculture: The technical mission provided 650,000 freshwater shrimp larvae to private fish farmers and produced and provided 3 million saltwater shrimp to local shrimp raisers. Ten specialists, 7 technicians and 24 farmers were given training in saltwater shrimp culture, enabling intensive saltwater shrimp culture to be expanded to an additional 31 hectares. Roving instructional teams gave assistance to saltwater shrimp raisers operating 95 hectares of shrimp ponds, and instructors taught tilapia culture to 11 individuals in six households. The mission staff helped the Atiocoyo station of the Salvadorean government's fisheries department to change the sex of red tilapia and raise fry for release in reservoirs.

When some of the ponds used for semi-intensive fish culture suffered damage as a result of Hurricane Mitch, the members of the six fish farming households concentrated their efforts on production and marketing classes.

Guatemala Technical Mission

Bamboo Construction Development: In fiscal 1999, the Guatemalan technical mission completed a bamboo cultivation project on nearly 100 hectares of land and transferred the bamboo handicraft technology and training to the Vocational Training Bureau. Since 1997, the mission has conducted a highly effective demonstration of bamboo construction, and since 1998 it has offered bamboo construction extension training. This abundant material is providing Guatemala with the basis of a handicrafts and furniture industry. To date, bamboo working training classes have been held in eight different areas of the country; 91 persons have received training; and 994 works have been completed.

Rice and Horticultural Crops: The mission developed a superior rice variety and trained 119 persons in the growing of rice. It gave guidance on the growing of asparagus using the stem retention method and trained 7 technicians and 60 growers in the cultivation of this vegetable on 52 hectares. Eighty hectares of hot peppers were grown and two pepper drying plants were set up. The mission also helped to establish vegetable production and marketing cooperatives for these vegetables.

Animal Husbandry: Under the guidance of the mission, which trained 132 persons in animal husbandry techniques, 19,050 fattening hogs were bred and 87,700 lbs of feed was produced. A hog breeding farm was established at San Carlos University Institute of Animal Husbandry and Veterinary Medicine.

Honduras Technical Mission

Vegetable Export Project: The mission conducted a vegetable project that focused on production and marketing systems and trials of new varieties of export vegetables. Achievements included the production and marketing of cold-climate snow peas and sprouts and the cultivation of ginger and taro. The staff assisted 26 farming households to grow snow peas on 20 hectares for export to the United States and Britain. Demonstrations were extended to 50 ha, and training sessions and lectures were given to 120 persons.

To lessen the need for expensive imports, the staff of the mission also assisted local people to grow vegetables for the domestic market. They gave several farming demonstrations on a 0.2-hectare field, and extended the results to 20 hectares worked by eight households. They also provided training and exhibition sessions for 150 persons.

Hog Breeding Projects: Several hog-breeding projects were carried out by the mission, including providing 1,999 stud boars, conducting exhibitions for 754 persons and providing training to 470 persons. Two hog farms producing 2,000 hogs annually are currently being operated by 120 households. Earnings from the sale of the hogs will be used to build a new farm on a site which has already been selected.

Cage Aquaculture and Saltwater Shrimp Projects: The Honduran technical mission trained 25 persons in cage aquaculture of tilapia and released 60,000 fry. It transferred 20 cages to local fishermen's cooperatives and also shipped a small cage and 500 fry to Lake Micos in the northern part of the country for an experimental fish farming project. Following the training of 76 technicians in shrimp breeding, 20 households are now operating shrimp farms over an area of 103.5 hectares. The mission's breeding ponds will be transferred to the Bureau of Fisheries.

Nicaragua Technical Mission

Hog Raising Improvement: The Nicaraguan technical mission carried out a hog raising improvement project which produced 1,472 hogs, and it sold 985 hogs and semen from 209 hogs. In addition, the staff inseminated six sows with semen from superior boars and succeeded in producing 41 live piglets. The mission is currently moving its original hog breeding facility, and plans to establish a new facility in northern Nicaragua. Land has been purchased and the installation of equipment is under way.

Oilseed and Rice Improvement Project: Another project conducted by the mission was an oilseed and rice improvement venture, which resulted in the production of 70,328 kg of seed rice and 57,918 kg of other seeds and the training of 405 persons.

Horticultural Crop Improvement: Cultivation on 87.18 hectares resulted in the production and sale of 1,148,756 kg of crops to the domestic market, as well as the export of 57,089 kg of vegetables. Eighty-nine persons were trained in the cultivation of horticultural crops in fiscal 1999.

Saltwater Shrimp Larvae Breeding: The mission produced eight cycles of breeder shrimp, resulting in an output of more than 9 million late-stage larvae. It trained 19 persons in shrimp breeding techniques.

Panama Technical Mission

Several projects were undertaken by the Panama mission, including: (1) a fruit tree project (the planting of a 5-hectare mango nursery and 0.5-hectare papaya nursery and the growing of 8,000 mango seedlings which have been used to plant 25 hectares of extension groves); (2) a vegetable seed breeding and propagation project (conducting 31 lectures, exhibitions and seminars on the subject, training 388 persons and extending cultivation to 60 hectares); (3) a saltwater shrimp culture project (involving the raising of 5.1 million shrimp larvae, training of 15 persons and repair of the aquaculture training center); and (4) a fishing demonstration project (with training provided to 42 technicians and 120 members of fishing households).

Paraguay Technical Mission

Focusing on animal husbandry, the technical mission in Paraguay bred 572 superior hogs and trained several hundred persons in the field. The staff developed a cost-saving feed mixing machine and gave hog raisers loans to buy their own machines. Particular attention was devoted to the breeding of superior hogs and the setting up of organized hog marketing cooperatives that will be able to provide training and collective transport and sales services.

In cooperation with the veterinary/animal husbandry department of Asuncion University, the mission produced 183,000 doses of swine fever vaccine. The hope is that swine fever will be wiped out by 2000, paving the way for pork exports and giving Paraguay a chance to earn more foreign exchange.

In addition, the mission produced 547,600 doses of vaccine to fight the Newcastle disease in poultry.

EUROPE

Macedonia Technical Mission

The ICDF has stationed a team of specialists in the Republic of Macedonia to conduct a variety of technical cooperation projects. Their work responsibilities include the promotion of exports, the development of markets, the simplification of foreign investment procedures through a "single window," the promotion of foreign investment, the identification and introduction of prospective business partners, the development of SMEs and microenterprises, the diversification and commercialization of vegetable production, the encouragement of hog raising by small farmers, the strengthening of technology transfer and cooperation with Taiwan, and the promotion of bilateral trade and investment activities.

A full description of the work being undertaken by the technical mission appears under "Special Reports."

MIDDLE EAST

Bahrain Technical Mission

Horticultural Project: In an active horticultural program, the technical mission developed 14 floricultural greenhouses and 2.5 hectares of experimental fruit tree groves; propagated 1,000 each of cloud apple and improved Indian jujube trees; and used 60,000 flower seedlings for extension purposes. It also trained 10 persons in the science and transferred various flower and fruit cultivation propagation techniques to cooperating Bahraini units for extension.

Landscaping Project: The activities completed in the landscaping project included the extension of a 22-hectare tree nursery and a 0.8-hectare turf nursery; and the provision of 1,100 tree seedlings and 6,000 square meters of turf for extension purposes.

Saudi Arabia Technical Mission

As part of an agricultural/fishery technical service project, the technical mission provided the following services to the host country: (1) veterinary services, such as parasite inspections; (2) assistance with pesticide review and management; (3) review of the country's aquaculture-related laws; (4) experiments in the raising of saltwater fish and shrimp; and (5) production and breeding of the popular freshwater tilapia.

Saudi Arabia Transportation Mission

The task of this mission was to provide technical consulting on a range of transportation services.

Saudi Arabia Printing Mission

The members of the mission assisted Saudi Arabia to print stamps, passports, residence cards and other certification.

MEDICAL MISSIONS

The ICDF medical missions—of which there are currently three in Africa—provide clinical instruction and technical training/technology transfer to partner nations in order to help them raise their level of medical technology. In addition, the missions alleviate the local need for medical care by traveling to remote areas of the country and offering free medical services several times each year. Besides easing the suffering of impoverished local residents, these medical visits also provide an opportunity to spread health-related information.

Burkina Faso: The role of the medical mission in Burkina Faso is to provide outpatient services and technical instruction at the Friendship Hospital. The mission consists of four specialists in internal medicine, anesthesiology, dentistry and acupuncture. In fiscal 1999, the medical staff cared for 13,200 outpatients, 2,760 hospital patients and 690 surgical patients.

Chad: The medical mission stationed in Chad currently includes physicians specializing in internal medicine, surgery, ophthalmology, gynecology and pediatrics. The role of the five specialists is to support outpatient diagnosis at free hospitals. In fiscal 1999 the mission attended to 5,805 outpatients, 292 hospital patients and 768 surgical cases, and it gave free care 4,720 times.

São Tomé and Príncipe: The specialists in the São Tomé mission are trained in dentistry, pediatrics, gynecology and acupuncture. Their role consists chiefly of assisting diagnosis and treatment at the Central Hospital and Centro Policlínico de Aqua Grande outpatient center. This past year the doctors provided care to 4,211 outpatients and free care to an additional 982 persons.

Gifts of Medical Equipment: In order to help increase the medical and public health facilities in partner countries, the ROC regularly donates equipment and drugs to partner nations. For example, each year MOFA donates US\$800,000 to Chad for medical expenses, and in February 1999 it gave 50 ambulances to Burkina Faso.

Donations of Vitamins: Hoping to relieve the nutritional deficiencies of children in the friendly nations of Africa, the ICDF made the “Vitamin Donation Program to Improve the Nutrition of African Children” a core project for fiscal 1999.

This provided for the purchase of four million vitamin tablets of all types (worth approximately NT\$2.5 million) for donation to the three nations in which ICDF medical missions are situated. The tablets were distributed according to population, with Burkina Faso receiving 2.2 million tablets (55 percent), Chad 1.4 million tablets (35 percent) and São Tomé and Príncipe 400,000 tablets (10 percent).