



## Environmentally Sustainable Development and Clean Energy

# 2

## Special Reports

Climate change poses a serious threat to humanity and sustainable development. Studies show that during the past century, average temperatures have risen by 0.6°C, adding urgency to a 2007 report from the Intergovernmental Panel on Climate Change, which concluded that a rise in global temperatures of 2°C above pre-industrial levels would expose millions to the threat of drought, famine and flooding. However, some reports also predict that if we act now, we can lower the probable impact and limit damage.

### **Climate Change: A Common Threat to Human Development**

Climate change is caused by increasing levels of atmospheric carbon dioxide and other greenhouse gases. Rising temperatures in certain regions will cause ice to melt and raise sea levels, which will pose a serious threat to island nations. Many residents of these nations rely on the sea for their very livelihoods, yet increases in carbon dioxide will also acidify the oceans, which damages marine ecosystems and ultimately reduces fish stocks.

In other regions, climate change will deplete water resources, cause famines and spread diseases. Natural disasters associated with extreme weather events will become more intense. Heat waves, floods and droughts will become more fatal; epidemics of vector-borne diseases more widespread. In future, all of these issues will become a common concern for humanity.

Scientists say that climate change is likely to cause the greatest damage in the agricultural sector. Increasingly unpredictable climate cycles will herald droughts, reduce yields and might

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ultimately precipitate further global food crises.

Against this context, forecasts from global management consultants McKinsey & Company say that the food industry will become one of the biggest industries in the world of tomorrow. Business concerns associated with water resources, medicine and public health, clean energy, education and technology will also have a greater impact.

The Industrial Revolution forever changed the way that we would live and utilize energy. It brought economic development to the world and lifted millions out of poverty. Yet this revolution was built on coal and other fossil fuels, and fossil fuels are not a sustainable source of energy. The emission of greenhouse gases from burning fossil fuels is dramatically altering our planet's climate and causing irreparable damage to our environment and ecosystems.

Developing countries are already beset by the challenges of poverty and hunger. Climate change is yet another major hurdle that they now face. Taiwan's partner countries in Africa, Asia-Pacific, Central America and the Caribbean are among those facing the highest threat. Many of these countries have relatively weak ecosystems and will be particularly susceptible to changes in the environment.

### Echoing Global Initiatives: Environmentally Sustainable Development Projects

At the TaiwanICDF, we are already assisting our developing partners to fight climate change. Taiwan has reduced its carbon footprint and now we are sharing our country's successful experiences of mitigation to do the same in our partner countries, even while maintaining the



## Case Study

# Geographic Information Systems and Remote Sensing Project

In Central America, climate change threatens human lives and property: Prolonged downpours cause frequent mudflows and landslides, whose impact is and has been exacerbated by environmental degradation.

In Taiwan and other industrialized nations, geographic information systems (GIS) and remote sensing (RS) technologies have for many years allowed relevant agencies to monitor land use, perform resource planning and environmental monitoring activities, and minimize the impact of natural disasters by integrating the management of various response services. As these technologies and systems have matured and become more widespread, their use in developing nations has become a relatively inexpensive solution, which led us to implement a pilot Geographic Information Systems and Remote Sensing Project in Nicaragua in 2010.

Project implementation utilized Taiwan's Formosat-2 satellite to monitor protected areas throughout Nicaragua over three-month cycles. Following geometric image processing and regional variance analysis, results were forwarded to the National System of Protected Areas at the Nicaraguan Ministry of the Environment and Natural Resources and the Nicaraguan Institute of Territorial Studies, who then carried out onsite investigations as necessary. Providing the Nicaraguan government with this data allowed authorities to monitor environmentally sensitive areas that

had been flagged for special protection. In 2010, monitoring activities were carried out over 24,000 km<sup>2</sup> of land.

In addition to providing routine monitoring services, we were also able to arrange same-day imaging services when Lake Nicaragua and Lake Managua flooded, and during an emergency on the San Juan River along the border with Costa Rica. As part of these events, we provided the Nicaraguan government with daily imaging updates and then submitted full satellite data and follow-up reports within two weeks. In each case, this new ability to rely on real-time information proved to be highly valuable to the Nicaraguan government. On September 27, 2010, Taiwanese and Nicaraguan authorities met in Managua to sign a Technical Cooperation Agreement approving a three-year extension to the use of GIS and RS technologies, which marks a new milestone in bilateral cooperation between both countries.

In future, our uninterrupted coverage of protected areas in Nicaragua will be supplemented by participation in the Corazon Transboundary Biosphere Reserve Project, which was launched by the World Bank to protect the Bosawás Biosphere Reserve in northern Nicaragua. The reserve is often referred to as the "green heart" of Latin America and has been listed as part of the intangible cultural heritage of humanity by UNESCO. During the project, Taiwanese satellite imaging will be used to monitor the status of, and any damage to, protected areas in Bosawás.



Satellite images taken in 2010 show Lake Managua (left) and Managua (right), with flooding indicated in red.

momentum that drives economic growth. And by transferring the latest clean energy technologies, we are also echoing global initiatives that promote efficient and equitable reductions in carbon emissions.

As part of these efforts, our overseas technical missions are introducing agricultural waste treatment technologies to various partner countries. These efforts are helping our partners to develop sustainably by converting the waste products and limiting the pollution produced during agricultural development. Specifically, we have launched successful Biogas Application Projects in Honduras and Nicaragua, and assisted Nauru to produce organic fertilizers from agricultural waste. We have also initiated organic composting and carbon reduction projects in Guatemala, and introduced a pesticide residue testing system in Panama.

In related endeavors, technical assistance has focused on the development of renewable sources of energy and the sustainable use of natural resources. This has led to projects in Panama, Nauru and St. Kitts and Nevis that deal with the sustainable development of water resources, and renewable energies such as solar power, wind power and biomass generation. Furthermore, we are currently evaluating the potential for launching clean energy projects in six Asian-Pacific partner countries. We will continue to explore the development of solar- and wind-powered sources of energy with these partner countries. In future, we hope to introduce cooperative projects that

promote the growth of alternative forms of energy and improve energy efficiency. In partner countries facing the most serious threat from climate change, we are working on risk management and adaptation. In Swaziland, for example, we are currently running a project to bore wells to provide a sustainable source of drinking water for rural communities, and we are also promoting the use of GIS as a land-planning tool. GIS also features prominently in a project in Nicaragua, where the technology is allowing the government to engage in cutting-edge environmental monitoring practices.

We have also dispatched environmental protection volunteers to Palau, St. Lucia and Panama. These specialists are sharing Taiwan's experience and transferring technology in order to create a more sustainable environment in our partner countries.

Across Africa, climate change will exacerbate existing long-term food shortages. For this reason, we will continue to focus on boosting agricultural production, with our main priorities being to safeguard food security and stabilize grain prices and yields. We will also work to minimize the impact of natural disasters on the continent, which, in addition to inflicting environmental damage, would otherwise affect vulnerable citizens by destabilizing production.

As a responsible member of the international community, Taiwan is playing its role to tackle one of the greatest threats to development in the world of today and tomorrow.

## Human Resources Development

The onset of the worldwide economic recession in 2008 forced many millions out of work and permanently altered the industrial landscape, making it difficult for some to find new work. Many countries have continued to post high rates of unemployment and face the specter of a jobless recovery in spite of weak growth. In these countries, unemployment has become a matter of domestic concern; the welfare of families has been affected and economic performance has deteriorated.

### Unifying Theory and Practice in Workplace Training

A shortage of jobs can cause serious social problems, taking a toll on individual families and nationwide economic growth. Yet according to a recent survey, 31 percent of global employers have had difficulties in filling vacancies for well-trained blue-collar workers.

Despite improved coverage of basic education, persistently high rates of unemployment remain in part due to insufficient education and training for the workforce. This shortage of qualified labor is slowing the pace of national development and affected governments have become increasingly alert to the need for insightful policies in education and professional training.

In response, international governmental organizations such as the World Bank have initiated a series of education and training programs focusing on the actual knowledge and technical skills required in the modern workplace. These programs aim to boost employment and improve productivity, and are critical for regions where youth unemployment has soared, such as Africa, Eastern Europe and Central Asia.

Human resources development projects from the TaiwanICDF are designed to complement the local conditions of our partner countries. Our programs emphasize education particularly

through professional workshops and scholarship programs for overseas students.

The majority of our professional workshops take the form of short-term, thematic courses. By combining theory and practice, they have a direct application to jobs and the needs of the modern workplace. Our workshops share Taiwan's experience and technical know-how, and feature a broad coverage of contemporary development issues in which Taiwan possesses comparative advantages, such as agricultural development, public health, ICT, economic development, MSME development and environmental protection. We have also begun to initiate a series of joint technical training programs within our partner countries in order to cultivate local talent, boost employment and promote sustained economic growth.

### Assisting Partner Countries to Foster Highly Qualified Professionals

To complement these measures, we also run programs that support formal education, including primary and secondary education. In addition, our higher education scholarship programs are designed to meet a growing demand for well-qualified, professional talent among our partner countries. The program provides scholarships for a range of courses at Taiwanese universities so that overseas students can earn bachelor's and master's degrees or doctorates. All courses are taught in English.

At the TaiwanICDF, we also recognize the growing importance of TVET to the social and economic growth of developing countries. Offering certain benefits that traditional education cannot provide so easily, TVET is an additional means of expanding skills, increasing productivity and income, improving quality of life and stimulating economic growth.

Taiwan's own economic development was accelerated in part by augmenting traditional education systems with TVET programs. At the TaiwanICDF, we have initiated a series of TVET programs that will boost economic growth in partner countries by developing professional talent for the private sector. Our programs are designed to spur long-term social and economic development by optimizing the quality of technical training, bridging the gap between industry and schools, enhancing competitiveness in the job market and creating job opportunities.

To ensure that this drive to develop human resources achieves lasting success, we have

directed a great deal of resource toward alleviating supply-side constraints in the education sector. Specifically, we have developed educational software, supported infrastructure projects to improve facilities at educational institutions, funded teacher training and worked to create closer links between industry and education.

As a complement to this approach, we are also addressing growing demand in the education sector. Among these endeavors, for example, a student loan scheme for TVET is expanding access to education among young people from disadvantaged families, which will permanently lift the most vulnerable students out of poverty.

## Case Study I

### Workshop on River Management and Debris Flow Control in Guatemala

In May 2010, Guatemala was beset by the eruption of Pacaya Volcano and struck by Hurricane Agatha in quick succession. As a result, local infrastructure and ecosystems were badly damaged, which had a huge impact on the progress of social and economic development. To assist the government of Guatemala to intensify reconstruction work in the wake of these disasters, we accepted an unplanned commission from MOFA to organize a Workshop on River Management and Debris Flow Control. The event ran from December 1-10 and was attended by 25 trainees from seven government agencies and private organizations.

The workshop curriculum was designed to account for current environmental conditions in Guatemala and its future needs for reconstruction and regeneration, covering frameworks and operating mechanisms related to strategy and planning, and relevant engineering and technology. Overall, the workshop focused on three interrelated challenges to development: water resources management, soil and water conservation, and disaster prevention and mitigation. Participants made several site visits to areas prone to flooding and landslides, where they gained first-hand experience of systems relating to river management and soil



and water conservation; and practices relating to disaster monitoring, early warning systems and response, and post-disaster reconstruction. The workshop will help Guatemalans to recover more quickly from the recent string of calamities that have befallen the nation, and assist relevant government agencies to adapt to climate change by mitigating the impact of extreme weather events and promoting the sustainable use of water resources.

## International Education and Training in Support of Technical Transfer

Having transformed our technical cooperation methodologies, we must now improve the success rate of projects by strengthening technical transformation and project management capacity abroad. To support this, we are rolling out a curriculum of systematically planned training programs that will boost specialist expertise within our partner countries. The plan will nurture a pool of much-needed technical and project management skills and allow us to transfer technical know-how on to local stakeholders. Next

year, for example, we will host a Workshop on Tilapia Culture designed specifically for partner countries in Central America, and a Workshop on Agricultural Marketing and Rural Development for those in the Caribbean.

Furthermore, we will focus on achieving project handover targets by “opening up” Taiwan Technical Missions to a much greater extent. This will give greater numbers of local citizens the opportunity to work on our projects and gain the experience and capacity required to manage projects independently. We will also invite those with proven potential to visit Taiwan to participate in advanced training courses.

### Case Study II

## TaiwanICDF International Higher Education Scholarship Program

The TaiwanICDF International Higher Education Scholarship Program was established in 1998 to promote the advancement of professionals in our partner countries, in accordance with national development policies set by their respective governments. The operations of the program were augmented by the formation of the Taiwan International Cooperation Alliance (TICA) in 2003, which increased both the number of participating Taiwanese colleges and universities and the range of academic specializations offered to scholarship recipients. Providing scholarships under the TICA framework also allows us to address the specific development needs of partner countries by coordinating curriculum planning and design.

We enrolled 107 students from 24 countries into the TaiwanICDF International Higher Education Scholarship Program in 2010. With interest from students in partner countries growing with each passing year, our quota was recently increased by an additional 50 placements under MOFA’s Expanded International Students Scholarship Program.





## Sustainable Agricultural Development

In the past, agriculture was a relatively simple enterprise and its purpose, too, was simple: feed the people. As populations have grown, however, agriculture has of necessity become an industrial concern, with associated connections to ecology, conservation and humanitarian development.

Even with the arrival of the 21st century, agriculture continues to underpin sustainable development and act as a key means to alleviate poverty — especially in Sub-Saharan Africa, for example, where the sector retains huge influence over social order and stability. And despite a great deal of progress, a number of Taiwan's partner countries continue to be constrained by their natural environment and climate. These partners still struggle to develop their agricultural and aquacultural sectors, in some cases to the extent that they are not self-sufficient in production.

### Long-Term Threats to Agricultural Production

Food prices have remained high since 2008, affected in part by extreme weather events and the continuing trend for converting land to grow crops that generate biomass energy. High prices are causing unrest and instability in many impoverished nations. The joint OECD-FAO Agricultural Outlook 2010-2019 warns that pressure will keep building to the extent that within the next decade, the average price of wheat and coarse grains is expected to be 15-40 percent higher, relative to 1997-2006. Furthermore, in only the first six months of 2010, global wheat and maize prices rose by 57 percent, the price of rice rose by 45 percent and sugar was up by 55 percent. Food crises that triggered riots across 25 countries two years ago are simmering once again, and experts are warning that we can expect extreme fluctuations in prices and further strains on associated markets.

Perhaps more than anywhere else, food shortages have become a matter of concern to the social and economic development of a number of African countries. At the TaiwanICDF, we remain dedicated to raising production, which will help to maintain food safety and stabilize prices in our African partner countries.

In The Gambia, for example, rising consumption of rice means that 80 percent of the country's supplies have to be imported. We began to address this issue following an official request from the Gambian government in 2008, launching a project to raise self-sufficiency by developing roughly 32,000 hectares of rice paddy. The model developed during this Grain Yield Enhancement Contingency Project has also been used in projects in Burkina Faso, Swaziland, Nicaragua and Haiti.



## Case Study I

### Horticulture Project from the Taiwan Technical Mission in Kiribati

Kiribati and other countries in the Pacific have similarly poor soils, dense populations and limited farmland, none of which favors the cultivation of vegetables. Many local citizens consume insufficient quantities of dietary fiber and the prevalence of chronic diseases such as diabetes and gout is consequently high.

To address this issue, the Horticulture Project implemented by the Taiwan Technical Mission in Kiribati is promoting the widespread growth of vegetables in an attempt to improve local dietary habits and provide the I-Kiribati with a more balanced and varied diet. Cooperation with the government has increased the number of home gardens so that now, every family has a space to grow their own vegetables and every person has enough to eat. This new approach to agricultural production has been warmly received by all participants.

In addition to teaching local citizens how to grow vegetables and fruits, Taiwanese agricultural experts have also helped the I-Kiribati to improve soil fertility by demonstrating how to produce compost from locally sourced materials. Among the many vegetables promoted by the mission, Chinese cabbage has become a favorite among locals. Apart from improving personal nutrition and increasing exports and associated revenues within Kiribati, the mission's implementation plan has been singled out for recognition within our own organization, having improved production and marketing activities by establishing community farms, nurseries and points of sale. This has promoted community development and established the foundations for further sustainable agricultural development in Kiribati.



## Sustainable Agricultural Development

### Improving Productivity, Reducing Poverty amongst Small-Scale Farmers

Elsewhere, our efforts are generating sustainable livelihoods throughout rural communities by assisting farmers to become more productive and competitive, and by strengthening the value-added links between on- and off-farm services. We have strengthened our work with farming cooperatives and promoted agribusiness management concepts to bring greater efficiency to agricultural markets. In addition, we are making it easier for local farmers to gain access to financing and technical assistance, and combining these measures to greater effect, which has enabled agribusinesses to improve hygiene, inspection and quarantine mechanisms. Collectively, these efforts are empowering smallholders to gain a foothold in high-value domestic markets such as supermarket chains, and to gain access to export markets.

Our assistance to the farmers' association in Omar Torrijos, Nicaragua, is a prime example of this kind of success. By providing agricultural technical assistance in combination with solid financing mechanisms and loan services, it took the association a mere four years to service its debts, even having invested in four tractors and two rice harvesters.

In Honduras, the tomato has become a value-added cash crop following the work of our technical mission, which organized production and marketing cooperatives and recommended competitive sales strategies. Meanwhile in Petén, Guatemala, experts from the technical mission have given a boost to the region's nascent papaya industry. They have trained local farmers in cultivation, packaging and marketing techniques, and helped packinghouses to obtain quarantine certificates, which will gain them access to lucrative export markets.

### Integrating Technical, Financial Assistance for Sustainable Development

Past approaches to agricultural assistance have included subsidies for seeds, fertilizers or pesticides. This approach is now considered to be ineffective because it is an unsustainable practice. In contrast, more modern approaches now focus on combining technical training with financing, through investment and lending. Our Small Farmholders' Financing Schemes operate under a two-tier system by providing this combination of assistance as part of our work with smallholder farmers. Into the future, we will be more active in using loans to catalyze development in the agriculture sector.

### Promoting Environmentally Friendly Agricultural Projects

The overexploitation of farmland can cause significant environmental problems by reducing biodiversity, increasing pollution, encouraging deforestation, eroding soils and accelerating desertification. In spite of this, better techniques can optimize agricultural production and promote sustainable development without arresting economic growth.

Where the overuse of chemical fertilizers has increased soil acidification and caused the fertility of soils to decline, Taiwan Technical Missions are dedicated to promoting the application of organic compost. This policy has been particularly effective in small-island nations across the Pacific, where sandy soils are composed almost exclusively of coral reef and shells. In Tuvalu, for example, the Taiwan Technical Mission has initiated a project that reuses and transforms garden waste into compost. The mission has combined waste from Tuvalu's population of domesticated pigs with coconut husks to produce compost that enriches the fertility of local soils.

## Case Study II

### Agricultural Microfinancing Initiatives

Agricultural financing is an important component of international development assistance. However, financial institutions investing in the sector face uncertainty over the production and sale of crops and are obligated to administer a large number of relatively small loans. Their clients, who frequently have incomplete credit histories and financial records, are dispersed across remote rural areas and lack proper assets to put up as collateral. All in all, these factors have tended to deter financial institutions from investing substantially in agricultural financing.

At the TaiwanICDF, we have been providing agricultural financing to farmers for many years, both through Small Farmholders' Financing Schemes and through revolving funds managed by Taiwan Technical Missions. In 2010, at a time when we extended the scope of our projects to cover a four- to six-year project cycle, we also determined to broaden our commitment to this two-tier technical and financial support and expand the scope of such work so that microfinancing projects can sustain the specific needs of sustainable agricultural development. We believe that our microfinance operations can and should become more sophisticated and that placing a special emphasis on the agricultural sector can help marginalized farmholders to become financially self-sufficient.

Under new plans, lending and investment services have assisted our overseas missions to emphasize sustainable practices by introducing needs-based, scalable financial assistance. Individual missions will be able to request assistance from our Lending and Investment Department to assess the feasibility of incorporating lending or investments into their project work. To remedy past deficiencies in project implementation, the task of disbursing and collecting loans provided under our Small Farmholders' Financing Schemes will now be given to participating microfinancing institutions. This will free up human resources at Taiwan Technical Missions so that our specialists can continue to provide technical support to farmers, which, in turn, will improve such farmers' capacity to make timely repayments.

In the future, we intend to replicate the successful implementation of past Small Farmholders' Financing Schemes, such as a leasehold model applied to guava processing and production in Costa Rica. In this instance, we increased the added value and profitability of agricultural produce by providing financial support to cooperatives working with our technical missions. Fixed assets required for agricultural processing, such as machinery, equipment or materials were offered under leasehold, with ownership of such

property being transferred on to farmers once they had repaid associated loans. This two-tier program integrated systems of technical and financial support promoted the participation of local government agencies, agricultural units and farming organizations. Guidance provided to farming organizations made them stronger and gained them a more equitable share of profits, which increased the commitment of members and, subsequently, their motivation to make repayments.

Elsewhere, we plan to expand the scale of our agricultural microfinancing initiatives and shorten the time it takes to appraise the eligibility of prospective partner financial institutions. To do this, we are working with the Central American Bank for Economic Integration (CABEI) to establish a co-financing platform for agricultural microfinance, to be known as the Agro Fund. Intermediary financial institutions associated with the Agro Fund will be responsible for liaising with small-scale farmers and handling day-to-day microfinance transactions, while credit guarantees provided by the TaiwanICDF and CABEI will encourage such institutions to expand the scope of their lending activities. At the same time, we will conduct an audit of internal regulations with a view to shortening lending approval procedures and maximizing the effectiveness of the program. Ultimately, we hope that projects supported by the fund will allow stakeholders to accumulate experience and establish best practices, thereby supporting the development of professional agricultural microfinancing networks.



## Private Sector Development

### Strengthening Financial Institutions and Financial Services

At the TaiwanICDF, promoting national economic growth and alleviating poverty are among our highest objectives. We have sought to achieve these goals down the years by promoting competitive, sustainable financial systems and expanding access to a wider range of financial services among the most financially vulnerable small businesses.

Private sector development requires the application of appropriate financial stimuli. In addition to implementing our own bilateral projects, we also work closely with international organizations to implement regional development projects, as part of which we have established mechanisms for selecting appropriate intermediary financial institutions. Sharing common objectives for regional development extends our capacity to provide financial assistance to a greater number of financial institutions on the ground.

This approach has led us to cooperate with a number of regional development banks over the years, including CABEL, the European Bank for Reconstruction and Development (EBRD) and the Inter-American Development Bank (IDB) and its Multilateral Investment Fund (MIF). Our work with each of these partners has seen us involved in many different projects dedicated to the specific development needs of various regions, with differing thematic objectives and points of entry. The format of such assistance has varied, too, taking in capital investment, product development, technical support and post-disaster emergency aid.

### The Role of Financial Institutions in Post-Disaster Relief and Recovery

Typhoons, mudslides and other natural disasters are occurring ever more frequently as a result of climate change. Elsewhere, earthquakes

can cause damage on a terrifying scale. Since many citizens in many disaster hotspots are already classed as being low-income, we cannot ignore their plight if we wish to reduce poverty. For this reason, local financial institutions, so often driven to the verge of bankruptcy in the aftermath of disaster, have an oft-neglected but critical role to play on the road to recovery.

As a case in point, the catastrophic earthquake that struck in and around Port-au-Prince, Haiti, in January 2010 devastated a previously thriving market for microcredit. Large numbers of low- to middle-income families, originally living by independent means through their agricultural or small business activities, were left unsupported following the collapse of the microfinancing sector. If this problem were to remain unresolved, then private sector development would falter, potentially undermining the massive amounts of assistance that international aid organizations were providing to rebuild Haiti's shattered infrastructure.

In the immediate aftermath of the earthquake, we approached the IDB to discuss participation in the organization's Haitian Emergency Liquidity Program Help. With an emphasis on social development and minimizing risk, the implementation of the program has seen a rapid injection of funds into the microfinancing sector, thereby restoring local lending organizations to normal operation. To maintain a healthy culture of repayment within the sector and minimize overreliance on aid, participating financial institutions will receive support to restructure their operations and will also be required to re-purchase their debt once their financial outlook has improved.

### Re-Lending to the MSME Sector: A Groundwork for Sustainable Operations

Within international capital markets, the competitiveness of banks from developing

countries is constrained by below-average credit ratings, which makes it difficult for them to attract international investment. Moreover, the ability of such banks to mobilize deposits is limited by low earning power among private citizens. In many developing countries, this chronic lack of capital has given rise to structural weakness in associated financial systems, which has stifled private sector development and seen credit to the micro-, small- and medium-sized enterprise (MSME) sector all but dry up.

At the TaiwanICDF, we have been operating re-lending projects ever since the establishment of our organization. Providing long-term loans to commercial banks has stabilized and enriched their medium- to long-term capital reserves and supported financing to MSMEs via intermediary financial organizations. Such capital underpins the operations of these banks and gives rise to increases in lending to the private sector.

Capital investment becomes exceptionally

important in times of capital shortage. For this reason, this past year saw us join forces with CABEL to launch the second phase of an SMME Re-Lending Project. By alleviating capital shortages among financial institutions and microfinancing organizations throughout Central America, the project will have a far-reaching impact on social development and go some way toward mitigating the impact of the global financial crisis within the region.

Elsewhere, in Europe, the recession still lingers, as does downward pressure on capital reserves. This has led us to provide €5 million toward an EBRD re-financing initiative involving two Turkish banks, Garanti and Denzi. The program has maintained the flow of international funding to these banks and kept credit lines to MSMEs open even in remote and rural communities, thereby promoting the ongoing development of the agricultural and aquaculture sectors, and entrepreneurship among women.



## Private Sector Development

### Co-Financing as Catalyst: Another Form Of International Financing

When a re-lending project calls for the injection of large amounts of capital, international organizations will often design a co-financing framework under which to implement their initiative. In such instances, organizations such as the TaiwanICDF can play the role of catalyst by providing initial lending to commercial banks in developing countries, prior to seeking the additional co-financing required from commercial banks in industrialized nations.

This approach allows prospective sponsors to be more confident of their investment. Perhaps more importantly, it also increases the visibility of beneficiary banks in capital markets. Working to meet the demands of lending partners encourages such banks to improve their operations and thereby improves their potential to raise further funding from the international community at a later date. In this way, guidance from experienced lenders allows recipients to flourish and make the transition to become self-governing institutions with the capacity to grant lending in turn.

### Strengthening Institutional Capacity, Enhancing Operational Efficiency

In the absence of good management, the benefits of aid on recipient financial institutions can be wasted. Even worse, such aid may even have an adverse effect on associated financial markets. Consequently, the integration of financial assistance into technical assistance projects should always be well planned. The right combination of technical support becomes particularly indispensable for projects that will include the introduction of new financial products or services, or where assistance will be provided to support the provision of microfinancing services by NGOs.

In cooperation with the MIF at the IDB, our

support to the Specialized Financial Intermediary Development Fund continues to provide technical assistance and re-lending services to 55 local credit and loan cooperatives in El Salvador, whose major client base comprises low-income families. The day-to-day operations of the project have been handed over to a responsible second-tier organization, where managers have worked systematically to improve project effectiveness, particularly by establishing a network among beneficiary cooperatives. Technical assistance has also been provided to support the design of unsecured loans and mortgage-related microfinance products and to develop a credit rating system by which to appraise borrower performance.

### A New Type of Operation with a Unique Mission

A lack of positive incentives within a marketplace can often deter financial institutions from expanding their scope of business. This is particularly true of lending to the agricultural sector, where there are higher risks associated with the design, sale and management of loans and other financial products.

To help smallholders gain access to credit and become self-sufficient, we are now launching a project-oriented scheme to provide microcredit within the sector, where incentive is provided to local financial institutions by our taking on a share of the risk. Meanwhile, agricultural specialists at our Taiwan Technical Missions are offering supplementary technical assistance to farmers who borrow through the scheme, which is improving their creditworthiness. Such measures are already encouraging financial organizations to widen their agricultural lending operations.

During 2010, we also coordinated our operations with those of likeminded international organizations in Nauru. Specifically, we helped the government to launch a pilot program

designed to stimulate the renewal of local financial infrastructure through the provision of new types of financial services. The project is also being implemented to support government policies on import substitution and the need for greater private sector participation in the economy.

Project operations focus primarily on commercializing the activities of participating farmers, with supplementary support being given to adjust financial regulations and perform financial planning. Training is also provided in support of management and technical practices specific to the agricultural sector. The successful implementation of this pilot program should create a viable model for further development in Nauru.

### Putting Agricultural Services at the Heart Of Future Operations

In the future, Taiwan Technical Missions will be expected to implement projects over an extended, four- to six-year schedule. As part of these reforms, we will renew efforts to build the capacity of financial institutions and shift our focus onto the agricultural sector. In the short-term, this will mean prioritizing the availability of lending to cooperatives or to farmers who have already shown promise during previous cooperation with our missions. Since agricultural financing is a rather specialized field, participating microfinancing organizations must be allowed to

acquire the relevant management and technical skills prior to making any disbursements. Drawing on our past experience of implementing Small Farmholders' Financing Schemes, we will make this new challenge part of our future mission, and design and implement financial development plans that meet the needs of modern agriculture in the private sector.

### Conclusions

Thriving private sector activity increases employment and promotes sustainable economic development, yet the regular operation and planned expansion of private sector enterprises rely on free-flowing supplies of capital. This is why supporting the financial independence and sustainable operations of financial institutions are the ultimate objectives of many of our development projects.

The best way to achieve these objectives is to stimulate systematic improvements to the environment in which such institutions operate, by supporting financial systems with robust laws and a strong regulatory framework, for example. In the future, we will continue to review past practices and make adjustments in accordance with our international experience, and with development trends. This will enable us to maximize the effectiveness of private sector development projects and generate substantial benefits in kind.





## Public Health and Medicine

Having participated as an observer at the World Health Assembly of the World Health Organization for the first time in 2009, Taiwan was invited to attend the event for a second time in 2010. Both of these occasions gave a global audience the opportunity to understand the development of Taiwan's health care sector and appreciate our expertise in combating diseases through public health initiatives.

This recognition has come about following many years of effort. As early as 1962, Taiwan had dispatched a mission to Libya to share medical know-how with local medics and associated institutions.

### Permanent, Mobile Solutions for International Health Care

Nowadays, Taiwan's progress and success in the health care sector is widely documented. In a survey of national health systems published by *The Economist* in 2000, Taiwan ranked second in the world, next only to Sweden. A report released by the World Trade Organization in 2006 heralded

a similar result, ranking Taiwan 39th among 192 countries for life expectancy. Taiwan has also been recognized for its sound health care infrastructure by placing 13th among 55 countries in a world competitiveness ranking issued by the IMD, a renowned business school based in Switzerland.

At the TaiwanICDF, we have drawn on Taiwan's medical expertise and human resources over the years to provide assistance throughout Africa, the Pacific and Latin America. These endeavors have consolidated Taiwan's reputation as a responsible stakeholder in the world of medicine and public health.

Providing humanitarian medical aid and improving the state of medical facilities in developing countries are matters of great concern to the international development community, and associated targets are prominent among the MDGs. At the TaiwanICDF, our work is very often based on Taiwan's own experience of implementing public vaccination programs and the development of our own public health and health care systems. These experiences are manifested in four interconnected operations: permanent medical missions, MMMs, training for local medics, and cooperative research partnerships.

Among these efforts, our permanent medical missions provide treatment in remote areas and improve basic standards by conducting training for local medical personnel and passing on associated clinical know-how. Since 1990, these missions have operated in a number of African countries, including Central African Republic, Liberia, Guinea-Bissau, Chad, São Tomé and Príncipe, Malawi, Burkina Faso and Swaziland.

### Medical Aid: Helping Yourself by Helping Others

Meanwhile, our MMMs draw on the combined skills and specialties of Taiwanese medics by providing roving treatment within our partner countries. In the course of their travels, teams



comprising medical personnel from Taiwanese hospitals provide clinical training for local medics, which boosts long-term capacity in the sector and continues to enhance Taiwan's reputation around the globe.

### **A Focus on Capacity Building, Long-Term Benefits**

Thanks to Taiwan's comparative advantages in ICT, including research and development, software development and an extensive production base, our achievements in health care are extending beyond the traditional limits of the sector. Already in the process of developing a telecare systems industry, Taiwan is also incorporating ICT into health care and developing applications for computer-aided diagnosis. We will exploit these

newly developed benefits and work with Taiwan's diplomatic missions to meet the specific requests of partner governments and their ministries or departments of health. By building capacity within national health care training programs, local medics will be better trained to meet the genuine needs of their patients.

Meanwhile, many of our projects have cross-sectoral links and target wider issues with implications for health and well-being. We fund medical capacity building projects to improve hygiene and sanitation and to address the likely implications of climate change. By providing access to potable water, for example, our well drilling project across rural communities in Swaziland will do much to prevent the spread of diarrhea and parasite-borne diseases.

## **Case Study**

### **Healthcare Personnel Training Program**

The TaiwanICDF Healthcare Personnel Training Program is managed in partnership with 37 Taiwanese hospitals and medical institutions as a supplement to the operations of our overseas MMMs. The program is designed to strengthen medical cooperation and exchange with our partner countries and is offered in accordance with MOFA's policies for development. The curriculum is updated each year, based on medical needs previously identified by MMMs and overseas embassies.

After arriving in Taiwan, trainees are each assigned to a host hospital, where they will spend the next two to three months engaged in clinical practice and exchange alongside Taiwanese medics. This hands-on style of training provides participants with a closer view of Taiwan's healthcare system and really hones their professional skills.

Once the period of training is completed, trainees return to their home countries and become seed teachers, passing their newfound medical knowledge and skills on to fellow colleagues. In this way, the Healthcare Personnel Training Program has the effect of benefiting both patients and practitioners in our partner countries.

Since the program was launched in 2005, training has been provided to 156 medical personnel, including doctors and nurses of various specialties, pharmacy administrators, medical technologists, radiological technologists, medical engineers, medical administrators and public health personnel.

