

Rural Development

Tackling Global Food Insecurity and Poverty

The food situation has deteriorated in developing countries due to soaring food prices, which peaked in 2008, and the recent global economic crisis. This further exacerbated poverty in these countries, driving increased need for stable access to required food in adequate amounts (food security) and alleviation of the poverty that a lack of food brings. JICA provides support to the challenges of agricultural and rural development as well as fisheries for farming and fishing villages. The aim is to “eradicate extreme poverty and hunger,” Goal 1 of the MDGs, by providing the poor with the means to supply food on their own.

Agricultural and Rural Development

Resolving Deteriorating Food Security in Developing Countries

Supporting Stable Food Supply and Rural Poverty Reduction

Overview of Issue

According to an estimate by the Food and Agriculture Organization of the United Nations (FAO), the proportion of people in developing countries suffering from malnutrition has been rising since 2008, and now stands at 17%, reaching one billion for the first time in 2009. Although the population had been dropping prior to 2008, rising food prices coupled with the global economic crisis changed the trend. As a result, it is anticipated that it will be difficult to halve the worldwide population suffering from malnutrition by 2015, which is the target of Goal 1 of the MDGs to “eradicate extreme hunger and poverty.”

In many developing countries, the majority of the workforce is engaged in the agricultural sector, while most people in rural areas are living in poverty. Agricultural and rural development faces various challenges, such as climate change, rising oil prices, increasing demand for bio-fuel, worldwide competition for farmland and post-conflict rehabilitation. It is the poor in rural communities in developing countries who are most vulnerable against these changes.

The stable supply of required food to citizens (food security) is a basic condition for a country's economic and social stability, and it is a priority challenge in most developing countries. However, a lack of skills in the administrative sector to formulate and execute plans combined with inadequate agricultural infrastructure and poor production technology mean that these countries are highly susceptible to unstable weather patterns and suffer from frequent food shortages, which threaten the health and livelihood of people.

When food security cannot be attained, countries are forced to import food from abroad, causing them to lose precious foreign currency. As poverty deteriorates in rural communities, many people abandon farming or head for the city. This leads to increased poverty in urban areas and economic and social instability in the country.

JICA Activities

JICA's assistance in agricultural and rural development aims to ensure a stable food supply to people in both rural and urban areas, reduce poverty in rural communities and drive economic development at national and regional levels, thereby contributing to achieve Goal 1 of the MDGs to “eradicate extreme poverty and hunger.” Assistance for stable agricultural production and stable food supply (food security) and efforts for poverty reduction (rural development) are very closely related. To provide effective support, it is necessary to extend assistance programs aimed at food security and rural development from the macro (national) level to the micro (rural) level.

Sustainable agricultural production is key to a stable food supply, while both of these areas are the cornerstones of rural development and advancement. In light of this, JICA has established the following three development objectives: (1) Sustainable agricultural production, (2) Stable food supply, and (3) Promoting vitality in rural areas.

(1) Sustainable Agricultural Production

Realizing sustainable agricultural production helps alleviate food shortages in the rural areas of developing countries. It is also indispensable for ensuring a stable food supply for the entire nation, including provision to other regions of the country and urban centers.

In its approach to enable stable agricultural production, first, JICA seeks to gain an understanding of the country's overall agricultural sector, analyze the various aspects, and draft agricultural policies that meet needs. Based on these policies, JICA extends various support to expand agricultural production and enhance productivity through numerous initiatives. These include establishing, maintaining and managing foundations for agricultural production such as irrigation systems, strengthening lab research and technical development, accelerating agricultural extension, improving use of agricultural equipment and enhancing farm management

Case Study

From “Make and Sell” to “Make to Sell”

JICA helped empower smallholder horticultural groups in Kenya through a project that enabled farmers to double their income.

Provided Guidance to 122 Farmers’ Groups in Four Districts

Production of horticultural crops such as vegetables, fruit and flowers is particularly widespread in Kenya, and this contributes to export earnings. It is even possible nowadays in Japan to purchase roses cultivated in Kenya.

Smallholder horticulturalists grow around 80% of these products, but many of them face difficulties with production technology and sales and delivery methods. This results in insufficient income from cultivated products and precarious living.

In response, JICA teamed up with Kenya’s Ministry of Agriculture and the Horticultural Crops Development Authority to boost the income of smallholder horticulturalists. Assistance was provided to empower production groups over a three-year period from 2006.

A series of training sessions were given to around 122 groups of 20 people each for a total of around 2,500 people in four provinces of Kenya. The training focused on production techniques, organizational operation, market research and production plan formulation. A range of the most appropriate technologies were selected, ones that can be used on an ongoing basis from technical and economical perspectives, such as how to repair a village road using sandbags and for production of Bokashi fertilizer.

Breakthrough Results in Market-Oriented Farming

Particular focus was given to implementing market-oriented agriculture and switching from a “make and sell” approach to a “make to sell” approach. Traditionally, the same crop would be shipped in large volume at the same time, forcing down market price. This also conversely resulted in insufficient volume during periods of high demand. Farmers themselves learned to identify demand trends throughout the year and plan production accordingly so that products could be shipped quickly and while still fresh. Sales have since increased steadily.

The Smallholder Horticulture Empowerment Project (SHEP) ended in November 2009. Compared with when the project commenced, income for each farmer has grown by 106.8% every season. Cost effectiveness has also improved a massive 4.8 times, confirming the benefit of low-cost training in producing significant results. In addition, a series of training sessions helped encourage women’s participation and deepen mutual understanding of the roles of men and women. The training also brought about a change of mentality and a shift from a “single manager (husband), single worker (wife)” style to a “management partner” style, which has contributed greatly to an improvement in farm management.

In light of these results, the Ministry of Agriculture in Kenya set up a new department to expand the SHEP methods on a nationwide scale. JICA plans to provide support to this nationwide expansion through a Technical Cooperation project.

Kenya: Smallholder Horticulture Empowerment Project (SHEP)



Market research is conducted to identify needs so that people can create what is going to sell well.

A Grassroots View

Francisca Kaviti Malenge, Leader of SHEP Unit, Ministry of Agriculture (Agricultural Attaché for Nyandarua District at the time)

SHEP techniques added a new dimension to conventional agricultural extension activities and forced a transformation in thinking. For example, to ensure that communication at meetings between farmers, brokers and material suppliers is not merely superficial, the profiles of participants are now exchanged in advance. This gives each person the opportunity to identify the needs of the others, enabling smoother discussions, which aim to share information and lay the foundations for future trading. As a person in charge of activities in the field, I feel this, more than anything, gives farmers the power to resolve the problems they are facing.



Women being trained on how to kill harmful insects. The training promotes mutual understanding of the roles of men and women. Women farmers have now been recognized as “management partners” within the group.



A farmers’ group restores a road in the village using sandbags. The act of cooperation helped to unify the group.

and marketing. Other efforts include setting up institutions for accelerating export of agricultural products and training human resources by improving agriculture-related tertiary education.

Africa accounts for the largest portion of people suffering from malnutrition in the world (29% of the total population (2008)), and is in the greatest need of increased food production. The amount of rice consumed in Africa is growing at a rapid rate, while the potential of increasing production of this crop is high. Therefore, rice is believed to be the key to eradicating food insecurity on the continent. Together with other donors, JICA launched an initiative called the Coalition for African Rice Development (CARD) on May 2008 to double rice production (an increase of 14 million tons) in Africa within 10 years. Toward this target, JICA is supporting the formulation of a development strategy for national rice cultivation in the 22 CARD member countries in Africa along with other efforts to

increase rice production in line with the strategy.

(2) Stable Food Supply

The stable supply of required food to citizens (food security) is a basic condition for a country's economic and social stability. Food produced in each part of a country needs to be delivered for consumption on a timely basis through an effective transport system to urban areas and other regions. If a country cannot produce enough food, it is required to import the shortfall depending on demand and supply.

JICA supports the formulation of policies regarding food supply and demand and the establishment of agricultural statistics required for that purpose. In addition, JICA also provides assistance for the improvement of food distribution functions from structural and non-structural perspectives within a country. This includes creating roads

Coalition for African Rice Development (CARD) Initiative

Aiming to Double Rice Production in Africa

Since announcing an initiative known as the Coalition for African Rice Development (CARD) on the occasion of the Fourth Tokyo International Conference on African Development (TICAD IV) in May 2008, JICA has been working with CARD participating countries and relevant donors toward the goal of doubling African rice production within 10 years (an increase of 14 million tons).

JICA supported deliberations of participating countries and donors aimed at formulating National Rice Development Strategies (NRDS) in collaboration with secretariat of CARD in Nairobi, Kenya, following the Second General Meeting of CARD in June 2009.

At the Third General Meeting of CARD held in Tanzania in May 2010, officials announced the results of an analysis concerning challenges to stimulating rice cultivation based on the NRDS formulated by each of the 12 countries in the first group. Further talks were conducted on the concrete implementation of the NRDS and participating countries reaffirmed their stance on the CARD initiative. It was also confirmed

that a second group of 10 countries would receive assistance.

Relationships between donors supporting CARD have also solidified. JICA and the World Bank have teamed up for irrigation projects and the International Rice Research Institute (IRRI) and Africa Rice Center have started a large-scale research project on rice production. Information is being more readily shared between donors, including results of research into rice cultivation conducted by the United States Agency for International Development

(USAID) and International Fund for Agricultural Development (IFAD). There has been talk of other tie-ups as well.

JICA is expanding its support for rice cultivation to include all 12 countries in the first group of recipients. In 2010, JICA plans to initiate new Technical Cooperation for Cameroon, Mali and Nigeria, and to assist in the development of irrigation systems using Loan Aid in Kenya and Grant Aid in Senegal.



Opening session of the Third General Meeting of CARD attended by Stephen M. Wasira, Minister for Agriculture, Food Security and Cooperatives in Tanzania



Participants of the Third General Meeting of CARD observe the site of an irrigation project in Kilimanjaro based on support from Japan.



Case Study

Aiming to Enhance Self-Sufficiency in Rice

Philippines: Development and Promotion of Location-Specific Integrated High-Yielding Rice and Rice-Based Technologies

JICA has supported efforts for rice production in the Philippines for almost 20 years. Since 2004, the results of these efforts have been applied to other areas in the country, raising the productivity of farmers targeted in the project and driving an 86% increase in their income over a five-year period.

Started with Support for Research on Crop Cultivation

Rice is the staple food for 80% of the population in the Philippines, making it the most important crop. However, rice yields were extremely low at 2.98t/ha on national average in 1990, promoting the need for improvement in varieties and cultivation as well as mechanization. In response, Japan set up a research facility called the Philippine Rice Research Institute (PhilRice) through Grant Aid in 1991. A five-year Technical Cooperation project was initiated the following year to improve the research capability of PhilRice, notably in the area of enhancing rice varieties.

A second five-year project was started in 1997 to develop farming technology mainly for small-scale rice farmers. As a result of these two projects, technologies related to rice production have improved remarkably.

Improved Farmer Income by 86%

It was necessary to further improve technologies developed at PhilRice so that they reflected the conditions of each region. In response to a new request from the Philippine government, JICA started a five-year Technical Cooperation project entitled Development and Promotion of Location-Specific

Integrated High-Yielding Rice and Rice-Based Technologies in 2004 to help develop and promote location-specific technology for rice.

The project targets three different regions with distinct climatic conditions: Northwest Luzon, Central Luzon and Northeast Mindanao. Experimental fields were set up at PhilRice sites in each region to demonstrate the low-input location-specific farming technology to 242 farmers. In light of the results, local governments led the monitoring of 29 other fields that had been established to teach 667 farmers on the techniques. PhilRice's Palay Check System was introduced to promote basic crop production technology (seed preparation, land preparation, uniform planting, early season growth guarantees, fertilizer management, water management, crop protection and harvest management). The system can also be introduced for dry-season cropping of vegetables and as a measure against pests. As a result, although there were differences between regions, rice production in wet and dry seasons increased by 0.5-1.8t/ha for each farmer compared with before the project. Average annual income, including vegetable crops, climbed 86% from 33,229 pesos to 61,805 pesos.

Based on these results, the Philippine government and PhilRice are aiming to expand the high-yielding rice-based technologies countrywide toward the ultimate goal of 100% self-sufficiency in rice to meet a growing population. JICA, with cooperation from IRRI, plans to train crop production experts from Africa by drawing on the results of the cooperation.



Announcing the results of experiments in crop cultivation conducted by farmers (comparing rice varieties). Over 50 farmers participated.

A Grassroots View

Atty. Ronilo A. Beronio, Executive Director, Philippine Rice Research Institute

We are working to increase self-sufficiency in rice, a national objective, and have already applied the location-specific technology developed and verified through this project to different areas of the country.

Nobuyuki Kabaki, Chief Advisor & JICA Expert

To promote the technology, we indicated how important it was to the region and focused on resolving issues and developing location-specific technology. We also demonstrated its practical viability. We emphasized the importance of R&D and feedback from technicians and related departments at project meetings so that the Philippine side shared the same awareness.



Training farmers using an experimental field to demonstrate technology related to hydroponics



Field in San Marinao full of rice

that link areas of production and consumption, setting up wholesale markets as well as warehouses to reinforce stockpiling and help with operating, maintaining and managing these facilities.

In Timor-Leste, JICA is supporting the formulation of a master plan and action plans that aim to strengthen food processing and distribution functions. Efforts are being made to develop administrative support systems, reinforce services for agricultural organizations and private companies, improve systems and standards for distribution, and build roads and other basic infrastructure.

(3) Promoting Vitality in Rural Areas

The majority of people living in rural areas of developing countries are engaged in the agricultural sector. This is also the poorest segment of a country's population. The aims of rural development are to expand agricultural production for food security at the local and national levels as well as strengthen rural communities from the standpoints of economic development and enhancing the livelihood of people. Specifically, this means stimulating the development of rural areas as a means to alleviate poverty. Accordingly, this requires efforts in diverse fields that transcend the framework of the agricultural sector, from strengthening local administrative functions and enhancing education and health services to developing rural infrastructure such as community roads and ensuring safe drinking water.

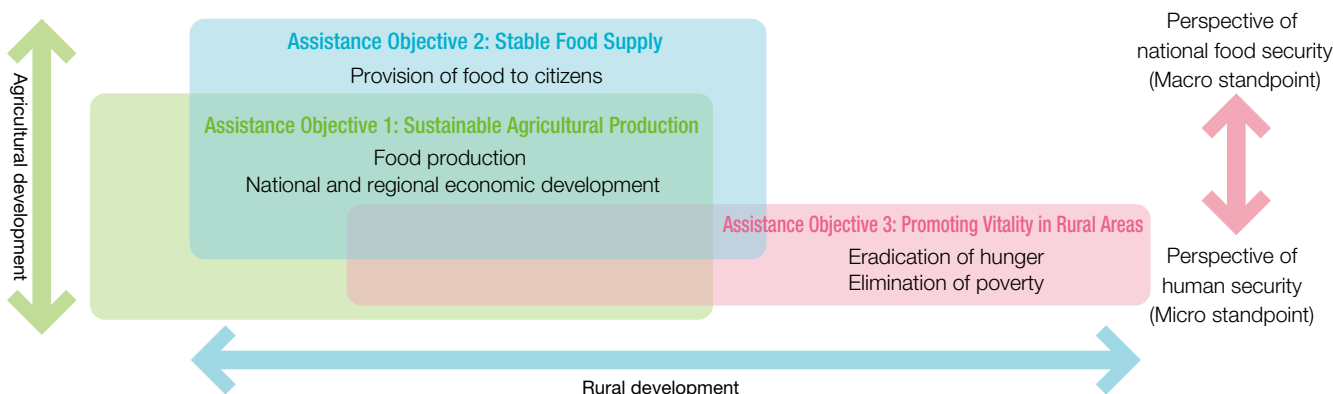
To stimulate rural development, JICA helps local administrative institutions make development plans with the participation of rural citizens, and supports the establishment of implementation systems that enables the community to raise income and improve livelihood, as well as the strengthening community organizations of citizen groups and techniques to spread these measures.

In Bangladesh, a new system is being trialed at the provincial level that links rural citizens with local administrative institutions related to rural development, and reflects the opinions of people in the villages in development programs. Efforts are being made to

make sure the system becomes widespread through preparation of guidelines and manuals. In Myanmar, JICA supports the formulation of plans for poverty reduction and regional development targeting the central arid zone where poverty levels are high. To resolve multiple issues causing poverty, JICA assists in the formulation of development plans at various administrative institutions and enhances their implementation capacity along with conducting verification projects.

The relationship between these three development objectives is outlined in the following diagram. Put succinctly, agricultural development is based on objective 1 (sustainable agricultural production) and aims to achieve objective 2 (stable food supply), while rural development aims to achieve objective 3 (promoting vitality in rural areas), which is closely tied to objective 1.

Agricultural and Rural Development Assistance Objectives, Philosophy and Goals





Fisheries

Aiming for Sustainable Development in the Fisheries Industry

Enlightening the Importance of Resource Management among Fishermen

Overview of Issue

Fisheries resources from the oceans, rivers and lakes are important sources of food for people in developing countries that can be acquired at a relatively low cost. Nearly 20% of animal protein intake in developing countries is dependent upon fisheries, according to FAO. The fisheries industry is also a valuable means of securing food and livelihood for people without land or steady income. It provides a valuable livelihood for poorer segments of the population and women as well. Developing countries account for 49% of the world's exports of fisheries products in monetary terms and 59% in volume terms (2005), making this industry vital to the economies of these nations.

Global production volume of fisheries products increased almost sevenfold between 1950 (approximately 20 million tons) and 2006. Production volume of marine fisheries hit a peak and has reached its limit after the 1990s. Amid increasing pressure on marine resources, production volume in the fish farm industry has continued to grow since the 1990s, and now accounts for one-third of total fisheries production.

Marine resources around developing countries have also started to diminish and, in some cases, even become depleted. Unlike mineral resources, which diminish as they are extracted, marine resources such as fish and shellfish actively propagate and grow within the natural environment. As long as catches can be controlled within the reproductive range, the utilization of marine resources are sustainable into the future. However, this notion of managing resources is not yet pervasive among fishermen in

developing countries. In fact, impoverished living conditions tend to force non-sustainable use of these resources. Managing and preserving fisheries resources and encouraging a sustainable fisheries industry are key challenges.

JICA Activities

The fisheries industry is a key sector for developing countries from the perspectives of a stable food supply, providing job opportunities, increasing incomes and stimulating the economy of a country or region. At the same time, the industry faces the problem of resources diminishing and becoming depleted through poor management and environmental degradation. In particular, it is important not only to develop the fishing industry but also to develop the fishing villages in order to improve their livelihood as coastal regions often tend to suffer from chronic poverty.

Cooperation in the fisheries industry has three main objectives: ensure the stable supply of food to local people, eliminate malnutrition by providing valuable nutrition and reduce poverty by providing a livelihood to the poor. Appropriate preservation and management of fisheries resources are prerequisites to achieving these objectives and key to the development of fishing villages based on sustainable utilization of these resources. JICA is working toward the following three goals with these ideas in mind: (1) Vitality in local fishing communities, (2) Stable food supply (effective utilization of fisheries resources), and (3) Appropriate preservation and management of fisheries resources.



A JICA counterpart (center) provides guidance on aquaculture as part of the Project for the Extension of Inland Aquaculture in Benin.

(1) Vitality in Local Fishing Communities

The key to alleviating chronic poverty and bringing vitality to fishing communities is to provide support focusing on stabilizing household income. This can be accomplished through the correct and sustainable management of fisheries resources and appropriate technology selection. A comprehensive approach is required, including vitalization of agricultural and other industries, and provision of education and health services.

JICA supports efficient management and cost reduction of fishing activities by such measures as the construction of fish markets and strengthening of fishermen organizations. JICA also works to improve the capacity of fisheries organizations as well as activities by women's groups in small fishing villages, from fish processing to sales. Other efforts focus on introducing extensive fish farming that can be implemented with relatively simple techniques and at minimal cost, providing instruction on basic processing techniques and disseminating these techniques, and promoting joint sales through fisheries cooperatives. These initiatives aim to diversify income sources for small-scale fishermen.

(2) Stable Food Supply (Effective Utilization of Fisheries Resources)

Developing countries face the serious problem of food shortage due to rapidly rising populations, which puts further pressure on capturing fisheries resources. In recent years, it is estimated that the world's total fish catch has almost reached permissible limits. On the other hand, according to an estimate by FAO (2007), there is still margin to use approximately 20% of aquatic resources if attention is paid to unused resources and to uneven distribution since some regions have the ability to develop those resources whereas others do not. As such, it is necessary to develop appropriate ways to catch and use fish, and to proliferate these techniques.

JICA supports the development of extensive fish farming using traditional low-cost techniques from the perspective of securing animal protein intake in light of the severe conditions of marine resources. In inland water aquaculture, JICA supports the combination of agriculture and livestock with fish farming for carp, tilapia and catfish by making use of ponds, paddy fields and irrigation canals. JICA also assists with the relatively simple ocean aquaculture of seaweed and shellfish. Elsewhere, efforts are made to construct facilities to promote and proliferate aquaculture and toward the integrated education of researchers, engineers, promoters and other human resources in this field.

Certain marine products rot easily in warm temperatures and go to waste. It is estimated that up to one-third of these products are not used as food. Ultimately, for that reason, JICA promotes the effective utilization of fisheries resources by supporting efforts to improve the freshness and quality of marine products. This includes establishing distribution facilities such as fishing ports and fish markets that incorporate fishing platforms and cold storage facilities,

and improving techniques for preservation such as freezing, canning, drying and smoking.

(3) Appropriate Preservation and Management of Fisheries Resources

According to FAO statistics, 28% of marine resources are being overfished, and it warns that resources are dwindling fast. However, unlike mineral resources, fisheries resources actively propagate and grow within the natural environment as long as catches can be controlled within certain limits. To make the most of this, it is important to restrict usage to an appropriate level in developing countries to maintain volume, which will enable a sustainable fisheries industry.

Work has been done on fisheries resource management for the past 10 years in developed countries through experimentation and with a sizeable budget and number of human resources. It has shown that in developing countries, it is important to first raise awareness among administrative circles and fishermen. This means developing scientific data and promoting broad cross-border initiatives that focus not only on the fisheries industry but also on preservation of the marine environment as well as the management of rivers and forests upstream. These efforts to conserve marine resources must be taken from a long-term perspective with consideration of land and marine ecosystems.

JICA supports the collection and analysis of catch data, which is essential for the preservation and management of fisheries resources, as well as the development of statistics for the fisheries industry. In addition, JICA supports the formulation of fishing management systems in administration and enhanced operating capacity from the standpoints of fisheries resource management and fish environment preservation. This entails increasing awareness through a participatory approach that includes fishermen and local residents. With the cooperation of coastal fishing communities, JICA works to regenerate and preserve seaweed beds, which nurture fisheries resources, and to recover resources through artificial production and discharge of experimental seedlings.



Case Study

Promotion of Aquaculture Technologies among Farmers and Success in Creating a Fishermen's Network

JICA implemented a five-year plan starting in 2005 to support improvements in aquaculture techniques in rice paddies and reservoirs, and their proliferation among rice farmers. The project created 9,000 new farmers in four targeted provinces of southern Cambodia.

Support of Small-Scale Fish Farming

Freshwater fishing (in rivers and lakes) is extremely popular in Cambodia, propelling it to fourth in global production volume terms. The industry provides a key source of animal protein intake for the local people. In inland villages far from the country's principal water system of Lake Tonle Sap and the Mekong River Basin, however, excessive pressure was being put on fishing. The resulting decline in fish catches threatens the food security of the local people. In these regions, it is difficult to secure water resources, while people also face the problems of poor aquaculture technology and a weak proliferation system for the technologies. Small-scale fish farming in rice paddies and reservoirs was still uncommon.

In response to a request from the Fisheries Administration, Ministry of Agriculture, Forestry and Fisheries of Cambodia, JICA implemented a Technical Cooperation project aimed at improving and extending technology for small-scale fish farming. The project covers a five-year period from 2005 to 2010 and the four rural provinces of Prey Veng, Takeo, Kampong Spue and Kampong Speu in south Cambodia where natural water resources are scarce.

Fostering Young Fish Farms

With this project, JICA provided technical support to strengthen capabilities for teaching aquaculture technologies to fish farmers. Personnel from the Fisheries Administration worked in partnership with JICA. In addition, JICA worked to improve aquaculture technology, foster seed-producing farmers,



Aquafarming in a reservoir

provide training on farming techniques, transfer technology from core seed-producing fish farmers to small-scale fish farmers, and create a network of core fish farmers in order to establish a stable supply system for young fry. The Bati Fish Seed Production and Research Center was used to implement these steps.

JICA also supported the development of 48 core fish farmers, providing them with the ability to train other fish farmers. This resulted in an increase in the number of fish farmers from the four provinces from 2,000 in 2004 to 11,000.

Although the project was completed in February 2010, the vision of the Fisheries Administration is to promote these technologies on a nationwide scale by leveraging the current achievements. As part of these efforts, the Fisheries Administration has asked JICA for a new project in northwest Cambodia, where it is thought to be difficult to popularize fish farming. Preparations are underway for the project.

Cambodia: Freshwater Aquaculture Improvement and Extension Project



A farmer checks the growth of fish being cultured in a rice paddy.

A Grassroots View

Yukiyasu Niwa, INTEM Consulting, Inc. (Specialist in aquaculture improvement and extension; Deputy Project Manager at the time)

We aimed to promote basic aquaculture technologies that can be employed by small-scale fish farmers in rice paddies and reservoirs. To achieve this, we focused on training counterparts and seed-producing farmers, and on creating a system to proliferate the technologies among fish farmers, particularly these seed-producing farmers, that does not require excessive dependence on governmental institutions. The key to success is making sure that this system is functioning effectively.

Chin Da, Fisheries Administration, Ministry of Agriculture, Forestry and Fisheries of Cambodia

The project enabled us to spread freshwater aquaculture technologies and reservoir management to four provinces in the south. The Fisheries Administration aims to make use of the results achieved in the project and extend the technologies to other regions and eventually nationwide.



Young fry being cultured by seed-producing farmers



Providing guidance to seed-producing farmers



A reservoir used for aquafarming