Agricultural and Rural Development

Overview of Issue

The environment surrounding agricultural and rural development has been diversifying because of such factors as the rapid advance of globalization, export restrictions imposed on agricultural products due to poor harvests, climate change, skyrocketing food and crude oil prices, growing demand for biofuels, global competition for farmland, and post-conflict rehabilitation. In many developing countries farmers account for the majority of the population and three-fourths of impoverished people live in rural areas. As a result, rural residents in developing countries are greatly affected by these changes.

Stable Food Supply

According to an estimate by the Food and Agriculture Organization of the United Nations (FAO), the number of people in developing countries suffering from malnutrition reached one billion for the first time in 2009. This was a reflection of a sharp increase in food prices and the subsequent global economic crisis. In 2010, this number remained high at 925 million. It will therefore be difficult to achieve one of the targets of Goal 1 of the MDGs, namely to “Halve, between 1990 and 2015, the proportion of people who suffer from hunger.”

Reducing Rural Poverty

According to analysis by the World Bank covering the four-year period since 2008 that was announced at the end of February 2012, at the current rate of decline, the number of people who live on below $1.25 a day will still be about 1 billion even in 2015 compared with 1.29 billion in 2008. In addition, there are major disparities between the rates of poverty reduction in different regions. According to the World Bank’s extreme poverty monitoring survey data for 2005-2008, the $1.25-a-day poverty rate in Sub-Saharan Africa is 47%, or almost half, of the total population. In regions such as South America and Southeast Asia, self-sufficiency rates for major grains have improved somewhat and the urban middle class is growing. In these regions, there is a need to devise ways to narrow the increasing economic gap between urban and rural areas.

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 thereby drive economic development at national and regional levels. Through these activities JICA strives to contribute to achieving Goal 1 of the MDGs. Sustainable agricultural production is the basis of food security. This production is also the premise for reducing poverty by providing a stable food supply nationwide through the supply of food to urban areas as well as by reducing food shortages in rural areas.

In 2011, the average price of food was as high as in 2008 when a big increase in the cost of food created a serious problem. One cause is structural due mainly to the vulnerability of international markets to the effects of rising demand for grain in emerging countries and restrictions on export to certain regions. More costly food was probably caused as well by short-term factors like unfavorable weather in the Horn of Africa and other regions. Other factors include a sharp increase in the cost of energy resulting from political instability, such as the Arab Spring, in oil-producing regions and other events. Rising food prices pose a threat to the food security of developing nations. High food prices are having a particularly severe impact on the urban poor and on small farmers and fishermen who cannot even produce and catch enough food to meet their own needs.

JICA is providing cooperation to address the issues of agricultural, maritime and rural development. The goal is to contribute to the MDGs of “eradicating extreme poverty and hunger” by offering aid involving food production, food supply and nutrition to the residents of both rural and urban areas.
For this reason JICA has established the following three specific cooperation objectives.

1. Sustainable Agricultural Production
   Risks involving the food supply are a complex combination of short-term factors, such as poor harvests owing to bad weather and accompanying speculation, and long-term factors, such as population growth in emerging countries, changes in the demand structure in those countries, limitations on production resources such as land and water, vulnerability to climate change, and competition between rising demand for biofuel and food. As a result, dealing with these issues requires determining measures for each cause based on the differing circumstances of each region. JICA is aiming to achieve sustainable agricultural production in order to address these diverse problems.

   In its approach to enable stable agricultural production, first, JICA provides support for drafting agricultural policies that reflect the characteristics of the partner country’s overall agricultural sector. Based on these policies, JICA assists in the improvement of agricultural management. Initiatives include establishing, maintaining, and managing infrastructures for agricultural production such as irrigation systems; improving the procurement and use of seeds, fertilizer and other agricultural production materials; and establishing and utilizing production technology for grain, livestock and other items while supporting institutional strengthening of associated organizations.

   In addition, JICA has started examining and taking actions regarding increasing the resilience of agriculture to climate change. Activities include the development of second-generation biomass energy, which does not compete with food production; establish stockpiling systems; use agricultural statistics and introduce weather insurance.

   Africa accounts for the largest portion of people suffering from malnutrition in the world (29% of the total population in 2008), and is in the greatest need of increased food production. The amount of rice consumed in Africa is growing rapidly and there are excellent prospects for achieving sustainable growth in rice production. Therefore, rice is believed to be the key to eradicating food insecurity on the continent.

   With other donors, JICA launched an initiative called the Coalition for African Rice Development (CARD) in 2008. The goal is to double rice production in Africa from 14 million tons to 28 million tons over the 10-year period ending in 2018. To reach this target, JICA is supporting the formulation of National Rice Development Strategies in the 23 rice-producing countries in Africa and providing assistance for boosting rice production in line with the strategy of each country. In the CARD first group of 12 countries, rice production increased 30% from 11.96 million tons in the 2007 reference year to 15.64 million tons in 2010.

2. Stable Food Supply
   Sustainable production is the premise for the provision of a stable food supply to the people of a country. In addition, ensuring a stable supply requires the establishment of food supply and demand policies for an entire country that reflect international food security. Creation of a framework for food imports and the proper use of food aid are also necessary.

   For example, Mozambique is in a tropical savanna that has immense potential for expanding agricultural production. Here, JICA is implementing triangular cooperation with Brazil, which has become one of the world’s leading exporters of agricultural products through the development of its Cerrado, which is also a tropical savanna. This cooperation is aimed at alleviating poverty among small-scale farmers and reducing domestic food problems. In addition, the “responsible investing” initiative by...
private-sector companies is being used so that medium and large-scale farmers can enter international food markets. As a result, this contributes to international food security. In Ethiopia and Kenya, which suffer from frequent droughts, JICA is doing more than providing emergency and welfare measures to assist in the proper use of food aid. JICA has also started providing support to increase the capacity of these countries to produce and maintain a stable supply of food through their own efforts.

3. Promoting Dynamic Rural Communities

For rural development in order to reduce poverty, it is important to aim for achieving social changes and invigoration in rural villages from the standpoint of developing agricultural economies and enhancing the livelihood of people. Accomplishing this goal requires going beyond simply raising productivity. Agricultural management must be improved, too.

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**Food for Life: A single seed can save the world**

A diverse agricultural infrastructure and sustainable training for people are needed to enable farmers to grow crops that can support stable lives. Land (farmland) and water (irrigation) must be maintained and managed, crops must be grown properly based on accurate information, and other measures are necessary. Seeds are one of the most vital elements from the standpoint of farmers. They require access to seeds (varieties) that are well suited to the region’s natural, social and economic environments in order to produce consistent yields.

Due to conflict that has been going on for more than 25 years, Afghanistan has lost systems for the preservation of genetic resources and improvement of varieties. This is true even for wheat, which is the key element for food security in this country. Many farmers are the country must deal with difficulties created by frequent droughts and floods. Since they use low-yielding varieties, these farmers must use traditional methods that produce unstable harvests according to the amount of rainfall. Furthermore, there is a severe shortage of researchers and scientists in Afghanistan who play a central role in improving agricultural technologies. There are also very few extension workers who can disseminate new technologies to farmers.

To deal with these problems, JICA is implementing the Project for the Development of Wheat Breeding Materials for Sustainable Food Production from April 2011 to March 2016 under the Science and Technology Research Partnership for Sustainable Development (SATREPS) with the Japan Science and Technology Agency (JST). The project involves scientific cooperation through joint research with research institutions in developing countries for the use of Japanese technologies to solve global issues. The Afghanistan Ministry of Agriculture, Irrigation and Livestock is the counterpart agency for this project. JICA is also collaborating with the Kihara Institute for Biological Research at Yokohama City University, the University of Tottori, RIKEN, CIMMYT and ICARDA for this project. The project is training young researchers in Afghanistan who can contribute to developing a wheat breeding system for the sustainable production of food.

Specifically, this program is attempting to combine modern and old varieties of wheat to develop a new variety that is highly resistant to droughts and diseases. The project uses the genetic resources of conventional wheat that was collected in Afghanistan in 1955 by the Karakorum and Hindu-Kush expedition (led by Dr. Hitoshi Kihara) as well as seeds of wild wheat (stored at the Kihara Institute for Biological Research), the ancestor of this conventional wheat. Japanese scientific technologies are used for analysis of the properties of these historically and globally valuable genetic resources. The project to develop useful wheat germplasm that can withstand droughts and diseases using Afghan genetic resources preserved in Japan is moving forward under Japan’s leadership at research institutions in Japan and other countries.

In November 2011, wheat genetic resources from Afghanistan returned to Kabul for the first time in more than 50 years. Currently, researchers in Afghanistan are conducting experiments with these seeds. It is expected that the people who were trained by this project and the new wheat variety seeds may contribute to an increase in wheat harvests in Afghanistan in the near future.
income and improve people’s livelihood, as well as for improving the distribution and sale of agricultural products.

In the Philippines, for example, in order to support farmers who have acquired new farmland in the course of the currently ongoing agricultural reform, JICA has been providing Loan Aid for communities consisting of benefitting residents for more than 10 years. Aid is aimed at developing infrastructure facilities such as irrigation facilities, postharvest treatment facilities, and access roads to markets in an integrated manner, while also improving agricultural productivity and increasing the income level of farmers by strengthening agricultural cooperatives and irrigation associations. As a result, there have been

Case Study  Iraq    Improving and Disseminating Horticultural Technology in the Kurdistan Region

The First Technical Cooperation Project in Postwar Iraq—The First Step to Revitalizing the Agricultural Sector

In Kurdistan region of Iraq, agricultural technologies have not been passed on to young farmers due to the devastation of rural villages caused by political pressure and turmoil during the regime of Saddam Hussein. In response to a request from the Ministry of Agriculture and Water Resources, Kurdistan Regional Government, Iraq, JICA decided to implement a Technical Cooperation Project for the improvement and dissemination of horticultural technologies that can contribute to increasing income of farmers.

Suitable Horticultural Technologies That Respond to Market Needs

The Project on Horticulture Technology Improvement and Extension started in August 2011. The project’s purpose is to ensure that “horticulture technologies suitable to local agricultural conditions are disseminated to target farmers to respond to market needs.” This is the first JICA Technical Cooperation project since 2003 that includes the dispatch of Japanese experts in Iraq.

These experts and their counterparts are struggling to verify the project’s purpose and disseminate the outcome, working on establishing the seamless collaboration of the Ministry of Agriculture and Water Resources and three directorates in each governorate: the Directorate of Agricultural Research, Directorate of Horticulture and Directorate of Extension.

Initiatives for Rural Villages Revitalization and Farmers Returning Home

At one time, the Kurdistan region was one of the prime agricultural regions in Iraq. However, rural villages were destroyed and farmers were forced to leave during the rule of Saddam Hussein and the following period of conflict. Consequently, many villages are no longer able to pass on technologies and experience from one generation to the next.

To resolve this problem, the Ministry of Agriculture and Water Resources is taking actions to foster the development of farmers. Within Iraq, rainfall in the Kurdistan region is relatively high at 300mm to 1,200mm each year. The region has much potential for high agricultural productivity as a result. Farmers could obtain cash income by cultivating and selling horticultural crops (fruit and vegetables) even in small fields by adopting intensive cultivation. That means these crops can help improve the livelihoods of rural village residents. Based on a thorough understanding of the advantages of horticultural crops, the Ministry of Agriculture and Water Resources has been supplying vegetable farming facilities, new varieties of fruit trees and other materials with the aim of revitalizing rural villages and bringing farmers back to these villages.

However, the ministry has not been able to sufficiently update farming to suitable technologies, educate people involved with farming or establish a system for agricultural extension services.

Moving Forward Together Step by Step

In response to this problem, as part of the project, JICA sent experts from Japan. These experts are working at the Ministry of Agriculture and Water Resources and they are careful to work together with their counterparts at the ministry to plan project activities one by one. Furthermore, they are trying to encourage the counterparts to execute the activities by themselves to enable them to gain experience. This process is exactly the same as the passing on of technologies and experience from generation to generation that used to take place at many rural villages before.

To conduct a baseline survey, a Survey Committee was established at the ministry. JICA experts worked with ministry personnel and counterparts throughout the Kurdistan region for each step from selecting survey items to preparation of the survey forms. These experts also assisted their ministry and regional counterparts with interviews of about 300 farmers in each governorate and other survey activities. The aim was to achieve sustainable and self-reliant capacity improvement without relying on the experts. Furthermore, the analysis of survey results and preparation of reports are also being performed jointly with the Japanese experts.

Tests to evaluate the adoptability of technologies as well were determined by the experts and counterparts. This too is a step to enable the counterparts to gain knowledge and reach conclusions on their own.

Due to the difficult situation in security in Iraq, the experts use bulletproof vehicles to travel around the three governorates in the Kurdistan Region covered by this project. They extend support for building an implementation framework that enables people in each governorate to take the lead in planning, executing and monitoring project activities. Although this is a time-consuming process, the experts are working hard so that counterparts at the Ministry of Agriculture and Water Resources can acquire first-hand experiences one by one and will have the skills to continue these activities on their own after the project ends, with the cooperation of JICA headquarters and the JICA Iraq Office.
improvements in water distribution for irrigation and market access for ARC and the livelihoods of residents have gradually improved, too.

Fisheries

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 50% of the world’s exports of fisheries products in monetary terms and 61% in volume terms, 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 2008. However, production volume of marine fisheries reached a peak in the 1990s and the use of marine resources has been at the limit since then. Amid increasing pressure on natural 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.

Even in the developing countries the decline in marine resources due to overfishing and the destruction of the environment is a serious problem. However, the concept of resource management has not yet been sufficiently disseminated to fishermen, and as people who face hard living conditions they have a strong tendency to prioritize immediate benefits. Therefore, it is not easy to manage fishing activities effectively at a sustainable level. Managing and preserving fisheries resources and encouraging a sustainable fisheries industry are key challenges.

JICA Activities

While being a key sector for developing countries, the fisheries industry faces the problem of resources diminishing and becoming depleted through poor management and environmental degradation. Chronic poverty and other issues in coastal fishing villages are also problems. It is important not only to develop the fishing industry but also to develop the fishing villages in order to improve the livelihoods of the people.

JICA’s 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 has established the following three goals for its cooperation.

1. Vitality in Local Fishing Communities

Bringing vitality to fishing communities to alleviate chronic poverty requires a comprehensive approach. One element is

Case Study: Morocco

Fisheries Resources Management for Artisanal Fisheries

Artificial Reefs Yield Benefits for the Fisheries Industry

The depletion of fishery resources caused by overfishing has become a problem in Morocco in recent years. In response, the Ministry of Agriculture and Fisheries has shifted its stance. Previously, the ministry encouraged the development of the fisheries industry to increase the supply of fish. But now the ministry is focusing on sustainable fishery resources development based on the proper management of resources. JICA is assisting in these activities by sending experts to Morocco to help small-scale fisheries to start using fishing methods based on resource management.

Fishery is one of the major industries of Morocco and small-scale fisheries account for about 35% of people who directly work in this sector. In economically vulnerable small-scale fishing villages, there is an urgent need to improve the livelihoods of fishermen while introducing fishing practices based on sustainable resource management.

JICA has assisted in the implementation of sustainable resource management for fishery at four fishing villages between April 2008 and March 2012. To provide this support, JICA sent experts in fishery resources management for artisanal fisheries to Morocco. Activities also helped energize and strengthen the fisheries industry organizations and increase the income of fishermen.

An artificial reef has been used for the first time as a method of resource-management for fisheries in Morocco. The reef protects fishing areas by blocking the entry of illegal fishing boats. Benefits thus far include the recovery of major species of fish, which had largely disappeared, and the creation of a new ecosystem. Small-scale fishermen as well as government officials were very impressed as a result.

Fishermen played a central role in these activities, but many associated institutions such as fishing research institutions were also effectively brought into the project from planning to implementation. People recognized this approach as a useful resource management method and it was voluntarily implemented in other areas, too.

Furthermore, plans are currently being made to work with other donors in order to extend this program beyond the fishing villages in this project to all regions of Morocco.
support aimed at stabilizing household incomes by giving people a correct understanding of sustainable fishing and selecting appropriate technologies. This approach must also include the utilization of agriculture and other industries along with the provision of education and health services and other social development programs.

JICA supports efficient management and cost reduction of fishing activities by such measures as the construction of fish markets and strengthening of fishermen organizations [See the Case Study on page 102]. 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.

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.

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 for the integrated human resource development of researchers, engineers, promoters and other human resources in this field.

Because marine products must be refrigerated or frozen for storage, in developing countries where the distribution infrastructure, especially for storage is underdeveloped, these products are often discarded due to deterioration or rotting. JICA is supporting efforts to improve the freshness and quality of marine products and promoting the effective use of marine resources by developing distribution facilities such as fishing platforms and fish markets, and improving the technologies for simple processing of dried-salted products and smoked products, as well as for frozen processing. For example, in Mauritania, JICA is assisting in the quality management of octopus through the dispatch of experts for the classification and quality control of cephalopod products. Most of the octopus caught in Mauritania is exported to Japan. Therefore, providing this support contributed to the safety and stability of the food supply in Japan, too.

JICA is providing aid in Mauritania for the classification and quality control of octopus. This photo shows octopus after sorting by size.

3. Appropriate Preservation and Management of Fisheries Resources

Fisheries resources propagate and grow within the natural environment as long as catches can be controlled within certain limits. Fishing must be conducted while holding the use of marine resources to an appropriate level while maintaining volume. It is important to raise awareness among local governments and fishermen. Furthermore, in addition to collecting scientific data and promoting broad cross-border initiatives, it is also necessary to focus not merely on fishing 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 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 participation of small fisheries, JICA works to regenerate and preserve seaweed beds, which nurture fisheries resources, and to recover resources through artificial production and discharge of experimental seedlings.

4. Joint Research Programs by Scientists in Japan and Developing Countries

JICA works with the Japan Science and Technology Agency (JST) to implement the Science and Technology Research Partnership for Sustainable Development (SATREPS), which performs joint research projects with research institutes in developing countries. One objective is acquiring new knowledge that can enable the use of Japan’s scientific technologies for solving global issues. Another goal is using the results of this research contribute to society in the future (return to society of specific benefits of research activities). Japan provides cooperation for international joint research involving the latest scientific technologies in the marine products sector, a field where Japan has a relative advantage. In Panama, the decline in the number of wild tuna is a serious problem. In response, the Comparative Studies of the Reproductive Biology and Early Life History of Two Tuna Species for the Sustainable Use of These Resources research project is under way. The aim is to acquire the scientific knowledge (about reproductive biology and early life) needed for the sustainable use of yellowfin tuna and Pacific bluefin tuna. In Thailand, JICA is implementing the Development of Aquaculture Technology for Food Security and Food Safety in the Next Generation Project. The objective is to upgrade technologies for raising fish and shellfish that are resistant to diseases and grow quickly. The project is developing new fish farming technologies needed for the sustainable production of high-quality fish and shellfish that are highly marketable, such as sea basses and tiger shrimp.