NERICA

NERICA (New Rice for Africa), a new promising African upland rice species, is getting into the limelight in West Africa. NERICA has been developed through crossing African rice species – resistant to disease and drought- and Asian rice species-high yield potential, with the assistance from Japan, UNDP and other organizations.

West Africa has been suffering from a continuous food shortage due to low agricultural production and increased population. Increased rice consumption, influenced by the change of lifestyle, has created a pressing need for increased rice production through development and dissemination of new rice varieties. West Africa Rice Development Association (WARDA), whose headquarters are in Côte d'Ivoire, succeeded in the development of NERICA in 1994. Japan, a positive promoter of south-south cooperation has assisted further research and development and dissemination of NERICA through financial assistance as the main donor (total sum of both direct and indirect assistance; US$3.9 million) and sending of experts to WARDA.

The test cultivation of NERICA proved that NERICA is a very excellent species with following advantages;

・high yield, which is three times as high as conventional African species, with a small amount of fertilizer.

・suitable for African soil, resistant to insects and weed-competitive

・quick growth, shortening the growth cycle by 30 – 50 days, thereby enabling double cropping and minimizing the drought damage. The increased production of seeds has already started in Cote d'Ivoire and Guinea.

Moreover, a new way, in which Japanese experts conducted a research on African people's taste for rice and African farmers selected the species of their preferences, was adopted. NERICA, born with a type of assistance to employ ways suited to regional circumstances and to promote African initiative, is one outcome of the Tokyo International Conference on African Development (TICAD) process. (ref. page 4).

NERICA has a great potential: It is expected to contribute greatly to food security of Africa, provided it is widely disseminated in West Africa and other regions. Furthermore, if a new agricultural system, for example, combined management with commercial crops such as beans, is established by making use of NERICA in the future, self-reliant economic growth in Africa may be achieved through increased income of the local population. There are many issues to be addressed; the need for increasing seed production, improving cultivated technologies, training field staffs, developing related industries and improving distribution. However, further gains of assistance are expected to be obtained through the dissemination of NERICA in the regions with delayed development of infrastructure and through the linkage with Japan's Aid for Increased Food Production and Technical Assistance of JICA in the field of agriculture.

Towards an African Agricultural Revolution

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New Rice for Africa (NERICA): The Origin of Hope

Poverty eradication is the most urgent Millennium Development Goal. Nearly half of Sub-Saharan Africa's 615 million people live below the poverty line. Millions of poor farmers with 7 to 8 family members depend on small farms of less than one hectare – using half for growing rice and the other half for growing vegetables and other cash crops. The average yield of conventional rice is less than one ton per hectare. This means that these small farms produce only enough rice for four people, so three or four family members must go without.

Seeking to address this fundamental problem of food security, the West Africa Rice Development Association (WARDA) succeeded, for the first time, in crossing African rice, "*Oryza. Glaberrima*" and Asian rice, "*Oryza Sativa*" in 1994. Dr. Monty Jones, a Sierra Leone scientist, who studied agricultural applications of bio-technology in China, applied such technologies, combined with conventional back-crossing technology, in the laboratory at WARDA to develop new African rice varieties, known as "NERICA". From the beginning, WARDA targeted subsistence farmers with rice yields of less than 1 ton per hectare, who also suffer occasional drought and lack resources to purchase additional inputs. NERICA varieties are weed competitive, pest and disease resistant, protein rich, and have a short growing cycle. They grow well in rainfed upland farming areas in Sub-Saharan Africa. NERICA yields up to 50 % more per hectare without fertilizer than traditional varieties and more than double the yield with fertilizer and improved management.

The development of NERICA is not only scientific breakthrough, overcoming technical obstacles, but also offers hope that millions of rice farmers and their families can escape hunger and poverty.

NERICA and UNDP

In 1996, convinced of NERICA's promise, WARDA organized a workshop to intensify the research to develop new African rice varieties. With the support of the Government of Japan through the Japanese Human Resources Development Fund for South-South Cooperation, the Special Unit for TCDC in UNDP has taken a lead role in supporting the extensive research programmes since 1997.

In the first three years, over 200 rice family lines were developed and participatory varietal selection (PVS) was encouraged to involve farmers to participate in the process of selecting new varieties. Over 5,000 farmers participated in PVS and affirmed that they liked the new varieties. From a mix of 40 different varieties, farmers selected 5 of which 60% to 80% were NERICA varieties. The overall investment for the first three years was US$2.4 million of which the Government of Japan provided about 80 %, including US$0.6 million through a contribution to WARDA and $1.3 million from Japan's contribution to UNDP. WARDA provided the balance of $0.5 Million from its core budget. The initiative is now in Phase II, which is funded at the level of $2.2 million in similar contributions, targeting NERICA varieties for rainfed lowland areas.

Division of Labour in R & D through Triangular Cooperation

The joint research system for NERICA is an excellent example of triangular cooperation. WARDA, as a center of excellence, coordinated the overall research programme. Research institutions with advanced technologies in Asia, Europe, North and South America focused on the genetic analysis of interspecific hybridized varieties. In addition, 17 research institutions under the National Agricultural Research Systems (NARS) in West and Central Africa carried out farm trials of the new varieties. The research findings were brought back to WARDA to assist in further crossings to generate new varieties for different conditions. At the moment, over 3,000 family lines have been developed and over 200 varieties are ready for dissemination. The combination of expertise in North and South, advanced and conventional technologies, farmers' participation in the process, political will and triangular cooperation made it possible to develop NERICA in Sub-Saharan Africa.

"NERICA Consortium" and Prospect

In April 2002, the African Rice Initiative (ARI) was launched by the Prime Minister of Côte d'Ivoire to scale up the dissemination of NERICA in Sub-Saharan Africa. To implement ARI, the NERICA Consortium for Food Security in Sub-Saharan Africa was established. It will function through: 1) a Stakeholders' Platform to promote widespread dissemination of NERICA-based technologies; and 2) a Research Network to integrate NERICAs and complementary technologies to further increase productivity and to safeguard natural resources. During the initial Phase (2002-2006), the Consortium will focus on seven pilot countries: Benin, Côte d'Ivoire, the Gambia, Guinea, Mali, Nigeria and Togo.

ARI aims to expand the area of farmland growing NERICA varieties to 210,000 hectares, which will yield an additional 744,000 tons of rice (about 10 % of current consumption) by 1.7 million farmers in West and Central Africa and generate savings of $88 million per year in rice imports by 2006. The total input in Phase I for five years is $15.2 million; this will increase, however, when the World Bank adds additional resources to expand to East and Southern Africa.

Currently, the Government of Japan, UNDP, Rockefeller Foundation, the World Bank, USAID, FAO and African Development Bank (AFDB) are major supporters to the ARI. For example, the Government of Japan has started supporting seed multiplication in Côte d'Ivoire and Guinea. FAO is also introducing NERICA into its Special Programme for Food Security (SPFS) in seven pilot countries. The NERICA Consortium is open to any other donors and institutions wanting to participate. WARDA hosts the small NERICA Consortium Secretariat.

As Dr. Gordon Conway, President of the Rockefeller Foundation said, the African Agricultural Revolution has already begun. There may be a number of constraints in the beginning, such as the limited capacity of national agricultural extension agencies, transportation and agro-based industries, national seed production policy, and insufficient marketing mechanism. ARI will closely monitor these constraints, as well as factors affecting soil conditions, double cropping systems and participation by women farmers to ensure the successful and sustainable farming.

ARI, as a TICAD (Tokyo International Conference on African Development) follow-up activity in line with the New Partnership for Africa's Development (NEPAD), will move ahead, supported by the political will reflecting strong African ownership of the initiative.

Participatory Varietal Selection

Japan's Food and Agricultural Cooperation in Africa

Since 1990s Japan has provided grant aid to Africa mainly in the fields related to the basic life including food and agriculture. Japan has also provided technical assistance for capacity building in various areas to support African development. Japan's assistance to Africa in the past 10 years (1991-2000) totals approximately US$10 billion.

The Government of Japan took an initiative to hold the first Tokyo International Conference on African Development (TICAD Ⅰ) in 1993, which raised the global interest in African development (ref. page 8). The second conference (TICAD Ⅱ) was held in 1998, declared the Underlying Principles of "Ownership" and "Partnership" and adopted the "Tokyo Agenda for Action". The then Prime Minister Yoshiro Mori, during his visit to Africa in 2001, expressed Japan's determination to support African development based on the recognition that "there will be no stability and prosperity in the world in the 21st Century unless the problems of Africa are resolved." Current Foreign Minister Yoriko Kawaguchi, in her policy speech in March 2002, stressed the importance of the development of Africa and declared that she would designate the period until the upcoming TICAD III (scheduled for the late 2003) as the "Year for Soaring Cooperation with Africa." Thus, Japan has been strengthening its efforts to address African development.

During the TICAD Ⅰ and TICAD Ⅱ, agricultural assistance was recognized as the issue of particular importance to the development of Africa, where agricultural sectors have a large share in the GDP, labor force and export amount. During the Ministerial-Level Meeting of TICAD in December 2001, the agricultural development was identified as a measure to realize poverty alleviation through promotion of economic growth.

Japan promotes cooperation in research and development and production technology in Africa both bilaterally and through international organizations including FAO, based on the TICAD policy, thereby making a significant contribution to the establishment of food security in the region. Besides the NERICA Project, some of the examples of Japan's assistance are as follows :

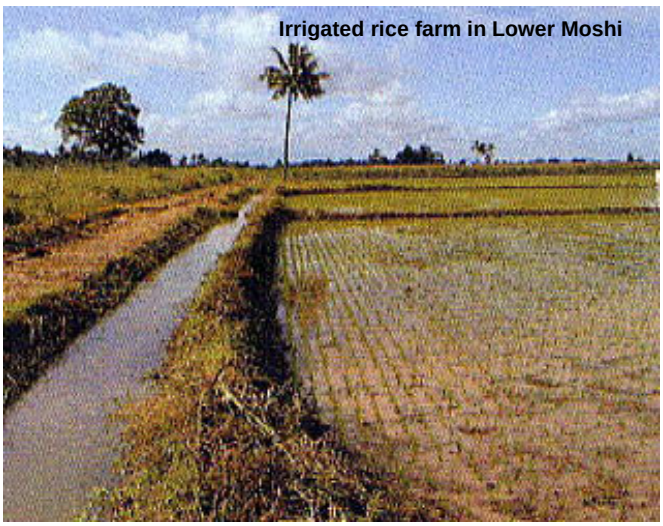
1. Bilateral Cooperation

～The Kilimanjaro Agricultural Training Center Project in Tanzania

Japan has cooperated in various schemes to establish and transfer irrigated rice production technology in the Kilimanjaro Region, Tanzania, since the 1970s. Following effects have been witnessed:

・the rice yield marked three times as large as that of national average;

・the rice production technology was disseminated to the surrounding areas; and



Irrigated rice farm in Lower Moshi

・the farmers voluntarily organized groups and developed irrigation facilities by themselves.

Such cooperation was highly appreciated by the Government of Tanzania, which made a request for another project. Thus, a new project, “Kilimanjaro Agricultural Training Center Project in Tanzania,” commenced in 1994 with a view to improving economic conditions of local farmers through training trainers and refining teaching methods and materials. Approximately 1,100 field staff and core farmers have completed the basic training course in 7 years. The irrigated rice production technology has started to be established in various regions.

At the same time, there are a number of irrigation sites where production is low due to lack of rice production or irrigation technology, in spite of the ground work implemented with foreign assistance. In order to increase the agricultural productivity of such sites, the “Kilimanjaro Agricultural Training Center Project” entered a new stage, namely, Phase Ⅱ of the Project, which started in 2001.

Pumping site in Bagamoyo

The Phase Ⅱ aims to strengthen productivity of rice yield by selecting several model sites and by developing training programs to introduce paddy technologies suitable for these sites. It also aims at disseminating the outcome in the surrounding countries including Kenya, Malawi and Zambia through improving the rice production technologies of the field staff and core farmers in certain irrigated rice areas in these countries. Furthermore, the effect of the project is expected to increase through its linkage with FAO, which has advanced experiences in training and field instructions in various parts of the country.

2. Assistance through FAO

FAO has 78 country offices mainly in Africa and more than 2000 experts working there. The Government of Japan wishes to utilize the advantage gained through its support to FAO projects in extending agricultural assistance including bilateral assistance.

(1) Emergency supply of vegetables and tools for vulnerable populations in Angola

In Angola, a number of refugees emerged due to the conflicts since 1975. As a result, agricultural production of the country decreased and the undernourished increased. Coupled with unstable weather, food situation among poor farmers in Angola worsened.

Against this background, the Government of Japan decided to contribute US$1 million through FAO to assist food production in Angola in March 2002. This assistance intended to achieve self-sufficiency of food and improvement of nutrition by providing seeds of vegetables (tomato, cabbage, onion, carrot etc.) and agricultural tools (plow, hoe etc.) to 100,000 of household of poor farmers and teaching organic farming.

(2)Assistance to the small-scale Subsistence fishery in Southern Sudan

The wetlands of Southern Sudan have substantial natural fish resources estimated about 80 to 100 tons of fishery per year. As a matter of fact, many of Southerners have been depending on these resources of cheap animal proteins especially during the hunger gap period. Due to the prolonged civil war, fishermen have by time lost their access to import canoes and fishing nets from foreign countries, and lost opportunity for making these fishery resources useful.

In order to improve this situation, Japan decided to provide US$450 thousand to Assistance to the Small-Scale Subsistence Fishery operated by FAO through the UN Trust Fund for Human Security (ref. next content) in January 2002. This project provides fishing equipment to the IDP (International Disabled People) and / or returnees through FAO in Southern Sudan in order to increase the amount of fishery resources for direct human consumption. Moreover, by providing adequate training and lectures in fish processing / preservation, it will allow better situation to provide job opportunities and raise the level of income of the communities and make them less dependent on emergency food-aid.

Dry fish (Fisheries training workshop)

The main objective of this project is to benefit food security of 90,000 individuals, including IDP and/or returnees. Simultaneously, it is expected through opportunity to utilize locally available resources to improve current situation dependent on emergency food aid and to bring about a long-term and regional benefit to strengthen mutual aid among community members.

(3) UN Trust Fund for Human Society

Human Security is a perspective to strengthen efforts to defend individuals from threats to human lives, livelihoods and dignity, and to make a point of individual viewpoint in order to ensure human potential, and is one of the key perspectives in Japan's foreign policy.

Japan established the "UN Trust Fund for Human Society" in the UN in 1999, and had already contributed about US$170 million since then. The Fund assists the implementation of projects operated by international organizations which work at defending individuals from various threats to human lives, livelihoods and dignity by such as poverty, environmental degradation, conflict, mine, refugees, drug, HIV/AIDS and other infectious diseases that current international community is facing.

The Government of Japan has assisted 60 projects, 11 in Africa and 5 to FAO through the Fund as of May 2002.