

*We present herewith the FAO document reviewing the International Year of Rice and setting the agenda for future for wider dissemination.*

## **International Year of Rice Follow-Up**

The International Year of Rice (IYR 2004) was a powerful opportunity for the world community to implement global initiatives, including the Millennium Development Goals and the recommendations of the World Food Summit. Continued support from policymakers at national, regional and global levels as well as the donor community is needed in order to translate the achievements of IYR into concrete programmes and projects on sustainable rice development in rural communities for food security and poverty alleviation. The FAO International Rice Commission is ready to assist in the harmonization of efforts toward the development of efficient and sustainable rice-based production systems and the improvement of access to this vital food.

## **FAO Rice Programme beyond IYR 2004**

The implementation of IYR in 2004 has already generated considerable support. The Italian Government provided initial funding support from under the framework of the project GCP/INT/933/ITA "Promoting, Coordinating and Implementing Observance of the International Year of Rice - 2004". The Government of Japan contributed an Associate Professional Officer to assist in the coordination of regional rice activities, conferences and seminars and recently approved the funding support to the dissemination of NERICA and improved rice technologies in Ghana and Sierra Leone. As requested by member countries, the IYR Secretariat developed two Regional Technical Cooperation Projects to help transfer specific technological innovations and promote capacity building for improved rice production in member countries.

Beyond 2004, the FAO Secretariat of the International Rice Commission will strengthen its capacity aiming at assisting member countries in the formulation and implementation of programmes and projects to help transfer specific technological innovations. The FAO Secretariat of the International Rice Commission will also continue to assist in capacity building for sustainable development and increase in rice production for food security and poverty alleviation in member countries. In the immediate future (2005-2006), the International Rice Commission will undertake the following major activities:

Publication of a book on "Rice is Life" to further raise the awareness of all stake-holders on the role of rice in food security, livelihood improvement, and sustainable production. The winning photographs in the IYR Global Contest will be used to enhance the message.

Preparation and submission of the report of the implementation of IYR 2004 to the UN General Assembly in July 2005 with recommendations on actions to be taken.

Organization of a Consultation Workshop on Rice Integrated Crop Management Systems in February 2005 in collaboration with the Ministry of Agriculture and Rural Development of Vietnam in order to review the progress made and to formulate guidance for effective development and dissemination of rice integrated crop management systems for rice production.

Organization of the 21st Session of the Commission in 2006 in collaboration with the Ministry of Agriculture of Peru to provide member countries with an opportunity to review the implementation of IYR, the issues and opportunities of sustainable rice production for reorientation of their national rice development programmes.

Providing technical guidance and support to the implementation of 17 projects on rice and rice-based systems in member countries.

### **The International Year of Rice 2004**

Mission Statement: The International Year of Rice promotes improved production and access to this vital food crop, which feeds more than half the world's population while providing income for millions of rice producers, processors and traders. Development of sustainable rice-based systems will reduce hunger and poverty, and contribute to environmental conservation and a better life for present and future generations.

The Initiative for an International Year of Rice (IYR) came in 1999, when the International Rice Research Institute - responding to its members' growing concerns over the serious issues facing rice development - requested FAO's collaboration in having an IYR declared. This led to Resolution 2/2001 of the Thirty-First FAO Conference, which requested the United Nations General Assembly (UNGA) to declare the IYR. The Philippines, co-sponsored by 43 countries, submitted this request to the Fifty-Seventh Session of UNGA, which declared 2004 the IYR on 16 December 2002. The dedication of an International Year to a single crop was unprecedented in the history of UNGA. FAO was invited to facilitate IYR implementation in collaboration with other relevant organizations.

The theme of the IYR - "Rice is life" - reflects the importance of rice as a primary food source, and is drawn from an understanding that rice-based systems are essential for food security, poverty alleviation and improved livelihoods. Rice is the staple food of over half of the world's population. In Asia alone, more than 2 billion people obtain 60 to 70 per cent of their energy intake from rice and its derivatives; it is the most rapidly growing food source in Africa and is of significant importance to food security in an increasing number of low-income food-deficit countries. Rice-based production systems and their associated post-harvest operations employ nearly 1 billion people in rural areas of developing countries and about four-fifths of the world's rice is grown by small-scale farmers in low-income countries. Efficient and productive rice-based systems are therefore essential to economic development and improved quality of life, particularly in rural areas.

There are about 840 million undernourished people, including more than 200 million children, in developing countries. Improving the productivity of rice systems would contribute to eradicating this unacceptable level of hunger. However, rice production is facing serious constraints, including declining yield growth rates, natural resource depletion, labour shortages, gender issues, institutional limitations and environmental pollution. Enhancing the sustainability and productivity of rice-based production systems, while protecting and conserving the environment, will require the commitment of many parts of civil society, as well as government and inter-governmental action.

Many countries attach great importance to sustainable rice development, and there are a growing number of global initiatives aimed at promoting it. These include the Agenda 21 chapter on Sustainable

Agriculture and Rural Development (SARD) approved by 1992 Rio Summit; the 2002 World Conference on Sustainable Development; the 1996 Declaration on World Food Security and the World Food Summit Plan of Action; and the United Nations Millennium Declaration in 2000. Among the intergovernmental regulatory instruments that are of key importance for rice are those related to: food quality (CODEX Alimentarius); climate change; trade, and non-tariff trade barriers; biological diversity and the safe movement of modified living organisms; and ensuring equal access to and benefit sharing from plant genetic resources. Together with the IYR, these initiatives recognize that, in a world of increasingly interlinked institutions, societies and economies, it is essential that efforts are coordinated, responsibilities shared and participation included at all levels, from the local to the international.

### **“Rice is life”: Aspects of rice-based systems**

The IYR envisions rice as the focal point through which the interdependent relationships among agriculture, food security, nutrition, agro-biodiversity, the environment, culture, economics, science, gender and employment can be clearly viewed.

*Rice Production:* From its Asian homeland, rice is now cultivated in 113 countries and on all continents except Antarctica. It is grown in a wide range of soil moisture regimes, from deep flood to dryland, and in different soil conditions. Rice plays a variety of roles that are related to the following important aspects of food security as well as rural and economic development.

*Nutrition:* In the developing world as a whole, rice provides 27 per cent of dietary energy supply and 20 percent of dietary protein intake.

*Agro-biodiversity* Rice-based systems are hubs of biodiversity. They combine well with other agricultural production activities, such as the raising of fish or ducks on waterlogged rice fields, and the feeding of rice straw to livestock. In turn, ducks and fish feed on weeds and small aquatic organisms, while livestock help with transportation and land preparation, as well as providing organic fertilizer. Rice is also grown together with vegetables and fruit trees such as banana and coconut. Rice fields also host a wide variety of natural enemies that control harmful insects and pests. In these ways, rice-based systems provide great opportunities for improved nutrition, diversified agriculture, increased incomes and the protection of genetic and agricultural resources.

*Water and land management:* Rice is the only major cereal that can withstand water submergence and rice-based systems can make productive use of all the available water and land resources. Terracing allows cultivation on steep slopes, helps prevent soil erosion and landslides, controls floods, minimizes weed growth and generates water percolation and groundwater recharge, while submerged conditions enable organic matter to accumulate in soils.

*Employment and income:* Rice cultivation is the principal activity and source of income for about 100 million households in Asia and Africa, and several countries are highly dependent on rice as a source of foreign exchange earnings and government revenue. In addition, the threshing, milling, processing, market transport and cooking of rice helps support rural livelihoods. Other rural people generate income from producing, servicing and maintaining tools, implements and equipment for rice cultivation and post-harvest operations.

*Gender:* Women and men often develop different agricultural expertise and knowledge, and women play important roles in both rice production and post-harvest activities. However, women have less access to credit, farm inputs, marketing facilities, extension services and information, and often miss out on the benefits of improved rice cultivation at the field level.

*Science:* Improved technologies enable farmers to grow more rice on limited land with reduced need for water, labour and agro-chemicals. Genomic studies by public and private research laboratories have resulted in a comprehensive database of rice DNA, which is useful for breeders in developing rice varieties with higher yield and tolerance to pests and diseases. These varieties also have greater tolerance to abiotic stresses, such as drought and salinity, and higher nutritional value. Golden rice, a product of genetic engineering, has high vitamin content and is being evaluated by international and national research systems for its biosafety. The introduction of integrated crop management systems also helps increase efficiency while reducing production costs and negative environmental impacts.

*Economic policy issues:* For many decades, rice was one of the most heavily protected agricultural commodities. Since the 1980s, structural adjustment programmes and the 1994 WTO Agreement on Agriculture have changed this situation, and world rice trade is expanding strongly. However, urban consumers enjoy most of the benefits (especially lower rice prices), while small-scale, low-income farmers in developing countries

bear the brunt of change. Developing countries now face the challenge of reaping the benefits associated with more efficient resource allocation, while alleviating the plight of small producers.

### **IYR: Challenges and opportunities**

The IYR offers an important opportunity to use a collective approach towards resolving the increasingly complex issues that affect the sustainable development of rice and rice-based production systems. This has important technical, political, economic and social dimensions, including enhancing the role of rice in meeting human needs.

Improving food security and nutrition. Although rice is a rich source of energy and protein, it has an incomplete amino acid profile and contains limited quantities of essential micronutrients. Nutrition can be improved by better rice processing and cooking techniques, the use of rice varieties with high nutritional values, and the fortification of rice with vitamins and minerals (e.g. through applying food technology). Food security can be enhanced by promoting complementary crops, livestock and fisheries activities within rice-based systems. IYR can help countries develop the infrastructure to support the responsible utilization of biotechnology. It can also increase awareness of the need to support the diversity of rice varieties to reduce genetic vulnerability and to enhance both rice productivity and quality. Diversity in rice-based systems greatly contributes to rural income and complete nutrition in a more balanced diet.

Enhancing the productivity of rice-based systems. Sustainable rice development requires: i) genetic improvements for higher yield potential, e.g. hybrid rice; ii) better crop management techniques; iii) reduced post-harvest operations; and iv) the development of integrated production systems. It also requires improved national capacity, through training and information exchange, and the national-level transfer of safety-tested new technologies to the field.

*Managing water resources:* There is growing concern about the sustainability of global water resources. Water scarcity can be addressed by reducing the quantity of water required (through developing new rice varieties or improved irrigation systems) or by recycling water through multiple uses. The cultivation of rice in low-water regimes will lead to changes in water and nutrient management, cropping patterns and tillage practices. IYR can help improve understanding of the costs

and benefits of water use in rice-based systems (e.g. the diverse life forms that such systems sustain). Technological developments and management interventions will also be required.

*Environmental protection:* Environmental concerns in rice production include indiscriminate use of pesticides, inefficient use of fertilizers, and emissions of greenhouse gases. At the same time, rice-based ecosystems host a wealth of biodiversity, and the majority of the planting material used by poor farmers is derived from seeds that they produce themselves and that represent generations of local genetic resources. IYR can spread awareness of the importance of preserving biogenetic and natural resources and can help stakeholders exchange ideas on environmental issues, challenges and opportunities.

*Traditional rice-based systems as part of world heritage:* IYR will raise awareness of the importance of benchmark rice-based systems, and will carry out activities to safeguard such systems and redress their erosion. The inclusion of outstanding rice-based systems in the multi-stakeholder, multi-agency Globally Important Agricultural Heritage Systems (GIAHS) Project represents a major opportunity. GIAHS is expected to lead to the creation of a new World Heritage for Agricultural Heritage Systems category under the World Heritage Convention.

*The institutional context:* More and expanded partnerships between government and non-governmental (including private sector) development and agriculture institutions are required in order to increase farmers' - particularly women farmers' - access to land, credit, information and new technologies and innovations. This will be a central challenge in many countries.

*The challenge and opportunity for synergy:* The overall challenge for rice-based systems is to identify and execute synergetic solutions for rice development, and these are possible only if decision-makers, technicians, farmers and civil society are well aware of the many factors related to sustainable rice production. In addition, sound policies on rice development depend on the harmonization of diverse policy instruments, which are often under the auspices of different ministries. IYR aims to be an "information broker" for increasing information exchange, technology transfer and concrete action among all levels in the rice production chain and across all nations, for a synergetic approach to rice development and the improved management of rice-based systems.

## **A conceptual framework for IYR implementation**

The fundamental aim of IYR implementation is to promote and guide the sustainable development of rice and rice-based production systems, now and in the future. In order to meet this overarching goal, the IYR strategy focuses on the following intermediary objectives:

- \* increasing public awareness of the contributions that rice-based systems make to food security, better nutrition, poverty alleviation and livelihood improvement;
- \* increasing public awareness of the diversity and complexity of rice-based production systems, and the challenges and opportunities for their sustainable development;
- \* promoting and providing technical support to ensure the sustainable development of rice and rice-based systems at the global, regional, national and community levels;
- \* promoting the conservation and enhancement of rice-based products in order to derive economic, social, cultural and health benefits for the world's human population.

In achieving its objectives, the IYR is committed to the following guiding principles:

- \* a participatory, consultative, innovative and proactive approach that acknowledges the abilities and capacities of all stakeholders to make a valuable contribution to enhance the sustainability of rice-based production systems;
- \* recognition of the agro-ecological, socio-economic and cultural differences among rice-based production systems, as well as of the constraints to their sustainable development in different regions, countries and communities;
- \* coordination and harmonization of efforts, contributions and participation among all stakeholders, through an agreed framework.

This IYR framework will consist of an organized system of UNGA-nominated partners at the global, regional, national and local levels. As the nominated lead organization, FAO has established an IYR Coordination and Implementation Unit to coordinate IYR activities at all levels.

The basis of the IYR implementation strategy is to engage the entire community in initiating combined and mutually beneficial actions that address the challenges associated with a sustainable increase in rice production. This is to be achieved through: data collection and



analysis; information dissemination via the multimedia; national, regional and global workshops, competitions and exhibitions; case studies; and the provision of technical support to member countries and farming communities. Reporting activities are particularly important and will include networking with stakeholders in order to monitor and advise on their activities, as well as producing a final report for submission to the Secretary General of the United Nations and to all stakeholders.

The IYR will establish a framework for enhancing the sustainable development of rice-based production systems, and will provide some of the means for achieving this. The IYR will utilize its resources efficiently by helping to establish and assist national IYR organizing committees; these committees can continue to develop the IYR vision beyond the Year. After 2004, FAO will collaborate with partners in establishing and assisting follow-up activities for medium and long-term sustainable development of rice-based production systems. Sustainability must continue to be pursued beyond the IYR.