

## **IFAD Agricultural Research TAGs relevant to CCD in Asia**

Because of the virtual absence of improved crop-specific technology packages and extension messages for the production systems of resource-poor smallholders in low rainfall areas, IFAD loans for drylands investment projects are also complemented by IFAD grants (aside from grant financing by the Belgian Survival Fund Joint Programme -BSF.JP). These grants comprise: 1) Technical Assistance Grants (TAGs) for agricultural research to institutions of the Consultative Group on International Agricultural Research (CGIAR), for instance ICARDA, ICRISAT and CIAT; 2) TAGs to non-CGIAR Institutions; and 3) Extended Cooperation Programme (ECP) grants to NGOs.

### **IRRI**

IFAD provided IRRI a TAG for USD 3.58 million for 3 years for a second phase to the *Collaborative Research and Development of Sustainable Rice Farming Systems in Southern Asia*, in terms of participatory development and validation of appropriate rice-based technologies for smallholders. It would develop and disseminate ecosystem-specific High-Yielding Variety rice production technologies with proven potential in Eastern India under IFAD-supported research. Furthermore, a collaborative Research and Development network component would serve as a vehicle for technology transfer to smallholders in other South Asian countries including Nepal and Pakistan.

According to the Draft Program Completion Report of July 2000, IRRI has paid good attention to the major TAG objectives, viz. technology development, ecosystem analysis, multi-locational testing and demonstration, and collaborative research networking. Related research has been undertaken in IRRI Headquarters on seedbed management under adverse conditions and on early hurdles to crop establishment in lowlands. Collaboration with agro-climatologists in India and the application of long-term weather data from the eastern rice-growing states have enabled determination of the safe growing season for rainfed rice. National and state-level remote sensing organizations have enabled clear delineation of areas prone to drought as well as submersion stress, with full details on severity and timing. It has been clearly established that: rainfed land is not always a dryland; a break in rains does not automatically cause drought stress in the crop; and that nutrient enrichment of the crop has to be put on hold during drought stress.

Drought-prone uplands may never benefit from irrigation due to the low water table and undulating topography. Here, the options include: choice of early-maturing rice cultivars; increase cropping intensity through mixed cropping with deeper-rooted crops such as pigeon pea; and perimeter planting with high-value orchards or timber trees as an income-enhancing measure for rice farms. Furthermore, it is incorrect to blindly limit the duration of the rice crop in all uplands, for instance in the Assam uplands, having a longer rainy season, rice yields can be enhanced using later-maturing cultivars. Meanwhile, cropping intensity in drought-prone lowlands can be increased through a legume crop preceding rice.

### **IDRC**

IFAD provided a TAG of USD 0.9 million for 3 years to IDRC for the development and transfer of technologies for smallholder bamboo and rattan-based producers from Asia to Africa. The grant would cover: 1) socio-economic (strategic) research; 2) technology transfer and information dissemination; and 3) network development. *Socio-economic and policy research* seeks to improve the income-generation potential of smallholder producer groups by increasing the value-added from bamboo and rattan production, processing and marketing, while safeguarding the natural resource base. The research documents resource pricing and administration as well as royalties taxes and other charges bearing on production and processing. In Africa, areas exhibiting potential in terms of traditional applications and processing technologies serve as the location for a socio-economic production systems survey. Under *Technology Transfer & Information Dissemination*, a linkage is sought between the known technology and development projects, especially local initiatives carried out by grassroots organizations. Gender-sensitive participatory training modules relate to: small-scale bamboo & rattan cultivation and management; and management of micro-enterprises. The International Network on Bamboo & Rattan (INBAR) engages in participatory technology development through farmer-managed demonstration trials. INBAR and UNESCO have been engaged in a joint project to promote traditional technologies in modern life, namely use of bamboo to prevent uplands soil erosion in the mountains of Ethiopia. Agro-technologies for rehabilitating degraded lands have been tested and adopted by farmers on their own fields, with a multiplier effect on other farmers. The same participatory adaptive research approach has been applied to rehabilitating degraded lands

mined for brick production. *Network Development* envisages broadening the consortium of development partners and the possible creation of a representative office in Africa, overseen by a national consultant scientist.

As of end-December 1998, achievements include: assessment of the role of bamboo in the economy in India and Zambia; studies on policies and institutions; documentation of the traditional and current uses of bamboo; development of technologies for the use of bamboo in housing construction; and development of linkages between craft groups and markets. The main focus of attention was the transition of INBAR from an informal network of IDRC to a full-fledged independent inter-governmental organization based in Beijing.

### **ACSAD**

IFAD provided USD 4.675 million for 4 years to the Camel Applied Research & Development Network (CARDN) Phase II for mutually supporting action-research activities with full participation of poor camel-pastoralist communities. The research will cover technology development and adaptation in the areas of: animal health and reproduction; animal nutrition for more intensive production and quality control; and processing, preservation and marketing of both milk and meat. The programme envisages combining technical research with social and economic aspects of camel-based production systems, the research being demand-driven and formulated through community-level participation. This participatory approach will facilitate sustainable camel husbandry practices, improve range management, which, in turn, will decrease land degradation, alleviating poverty and improving living conditions. A linkage will be sought between on-going IFAD projects and new technologies emanating from CARDN research. The programme will promote training in: laboratory techniques in hygiene, disease diagnosis, and treatment including on-site vaccination, socio-economic surveys, and data analysis and modelling. Research results will enable camel-keeping communities to develop and market meat and milk production. Promising results will be disseminated to other developing regions, viz. Asia & the Pacific and Latin America & the Caribbean.

### **ICRISAT**

ICRISAT was the recipient of a TAG of USD 0.5 million for 3 years to enable smallholder pulse producers evaluate IPM technologies through participatory on-farm research to avoid excessive and injudicious applications of insecticide. Project Management Units would identify pest-management priorities as perceived by IFAD target groups. These ranked priorities would guide ICRISAT in setting protocols at research sites located in IFAD projects. The three main components are: 1) development of host plant resistance; 2) cultural control including techniques to enhance the action of natural enemies; and 3) exploiting natural insecticides and entomopathogens.

As of end-1998, the following had been achieved: 1) extensive training of network members in IPM, on a much more substantial scale than was envisaged; 2) demonstration through on-farm trials with 350 farmers at 40 locations involving government and university researchers as well as NGOs that IPM can raise farm profits; 3) identification of constraints to IPM spread, viz. lack of seeds of resistant varieties and absence of biological control agents including neem-based products and pheromones, complexity of IPM procedure for pulses; 4) establishment of synergistic linkages with the IFAD-financed Integrated Tribal Development Project in Andhra Pradesh.

### **ICIMOD**

Complementing the TAG to ICRAF, ICIMOD was also a recent recipient of an IFAD TAG of USD 1.37 million for a 4-year period to provide implementation support to IFAD-funded projects in: 1) improving nutritional status through increased and diversified incomes; 2) assessing women's decision-making role; 3) applying a participatory approach; 4) document improved technologies and practices including those easily accessed by women while seeking out indigenous knowledge in farming, resource conservation and income-generating activities; 5) reducing drudgery of women through improved water harvesting and reduced morbidity from water-borne parasites; 6) identifying policies to support sustainable livelihoods in upland households; 7) replicating IFAD model project cases on regenerative agriculture and forestry; 8) organizing exchange visits among IFAD project staff and beneficiaries; 9) organizing training of IFAD staff on gender and participation; 10) organizing consultations to inform policymakers on IFAD project experience. The programme will also support research in critical areas of upland development including post-harvest measures, local water harvesting and off-farm employment and income generation. The programme is expected to generate greater awareness of

upland development conditions and needs within IFAD projects, concomitantly improving project impact.

#### **ICRAF**

IFAD recently approved a TAG for USD 1.1 million for 3 years to ICRAF for providing technical backstopping to IFAD's Programme for the Upland Poor in terms of technologies, institutional and policy innovations. Within IFAD project areas, ICRAF would, through a regional network, identify, test and validate improved agro-forestry and conservation farming practices with outstanding potential to increase productivity and income while protecting watersheds. ICRAF would seek out indigenous knowledge that offers synergy with new technologies and can be integrated with IFAD projects. It will also identify community-based participatory strategies for natural resources management within IFAD projects, particularly in the uplands in Asia. ICRAF would establish a linkage to the Alternatives to Slash and Burn system-wide programme, famed for its inter-disciplinary work combining bio-physical and social science realms.