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PROGRAMME PLANNING

COUNTRY AND INTERCOUNTRY PROGRAMMES AND PROJECTS

CONSIDERATION AND APPROVAL OF GLOBAL AND INTERREGIONAL PROGRAMMES AND PROJECTS

Project recommendation of the Administrator

Supplementary assistance for a global project

International Crops Research Institute for the
Semi-Arid Tropics (ICRISAT) - West African
Sorghum and Millet Improvement Programme
(GLO/81/002)

Estimated UNDP contribution:	\$4.2 million
Duration:	Three years
Executing agency:	UNDP

I. BACKGROUND

1. The International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) was founded in 1972 and is one of 13 centres in an international research network operating under the aegis of the Consultative Group on International Agricultural Research (CGIAR). Its headquarters and main research farm, ICRISAT Centre, is located near the village of Patancheru, 25 km northwest of Hyderabad, India. Other ICRISAT scientists are posted in nine countries in Africa as well as in Mexico, Pakistan and the Syrian Arab Republic.

2. ICRISAT was established to improve food production in the semi-arid tropics which includes more than 50 countries and encompasses more than over 670 million people. Most of the people in this area live at subsistence levels. More than half of them, 350 million live in India while the remaining population lives mostly in West, East and Central Africa.

3. The objectives of ICRISAT are to (a) serve as an international centre for improving the genetic potential of sorghum, pearl millet, pigeonpea, chickpea and groundnut; (b) develop farming systems which increase production through more effective use of available resources; (c) identify factors which constrain agricultural development and evaluate ways to alleviate them; and (d) support national and regional research programmes through collaboration, conferences and training.

4. ICRISAT comprises into six multidisciplinary research programmes (sorghum, millets, pulses, groundnuts, farming systems, economics) and a training programme. There are also seven research support programmes - genetic resources, farm operations, biochemistry, plant quarantine, library, statistics and computer services.

5. From its inception, ICRISAT has been receiving substantial assistance from UNDP for the improvement of sorghum and millets. These are grown extensively in the semi-arid tropics as staple food crops because they are able to withstand dry conditions. To date, UNDP assistance, costing more than \$14 million, has been effectively utilized for research in these two crops, carried out mostly at the ICRISAT headquarters in India; however, during the last eight years considerable resources have been channelled to a co-operative programme in selected West African countries. A three-year first phase of this programme, with a UNDP earmarking of \$2,495,000, was approved by the Governing Council at its nineteenth session in January 1975 (E/5646, para. 17). Subsequently, at its January 1978 meeting, the Governing Council approved a second phase of assistance for a further three-year period in the amount of \$3,180,000 (E/1978/53/Rev. 1, annex II, para. 6). Further UNDP assistance costing \$5,900,000 over a five-year period was approved by the Governing Council at its twenty-eight session in June 1981 (E/1981/61/Rev. 1, annex I, decision 81/23). Even though ICRISAT is relatively young, it has made major advances in the collection and exchange of germplasm of the crops concerned and in the screening, testing and breeding of these crops for resistance to pests, diseases and environmental stresses. Many of these techniques are already being used extensively in India and Africa.

6. The UNDP/ICRISAT African Co-operative Programme which began in January 1975 is a vital companion piece to basic research in sorghum and millets which is being carried out at ICRISAT headquarters in India, with substantial UNDP financial assistance, since 1972. The main objectives of the African Co-operative Programme, which was conceived soon after the Sahel drought, are to (a) co-operate with and strengthen existing West African agricultural research programmes in order to develop higher-yielding varieties of sorghum and millets and introduce appropriate technologies in order to achieve consistent and reliable yields; and (b) train large numbers of national personnel in all aspects of production and research in sorghum, millets and companion crops as well as in related areas of farming systems in order to make maximum use of available soil, water and other resources.

7. The main purpose of the UNDP-supported West African sorghum and millet Improvement Programme, serving 12 countries in the region and the Sudan, was to breed high-yielding cultivars, with yield stability and resistance to drought, pests and diseases. The objectives were to be achieved mainly by the placement of breeders, pathologists and entomologists in several different locations to cover the three different ecological regions of importance to ICRISAT. In addition to breeding programmes, international nurseries and regional trials were important components of the UNDP-supported West African project.

8. Since 1982 this project has been remarkably productive. In the Sudan, Hageen Durra-I, a hybrid sorghum developed by the project has become the mainstay of the country's production. Yield increase obtained by farmers who planted 20 tons of seed in 1984 averaged three times greater than traditional sorghums. In the same country a millet cultivar, Ugandi, introduced by the ICRISAT programme, has been unusually productive despite drought conditions in the western rain-fed areas. Senegal has released two millet cultivars, developed in the UNDP/ICRISAT project, which have a yield advantage of from 10 to 20 per cent over the most commonly used improved variety, while retaining drought and pest resistance. In Burkina Faso the sorghum variety E35-1 which was introduced by ICRISAT has found good acceptance in areas of improved fertility. The millet breeding programmes in the Niger, Nigeria, and Burkina Faso were reorganized in 1980 and have developed many superior breeding lines which are now being extensively tested in the national research programmes of these countries. The prospects of release of new improved materials are excellent.

9. To overcome the shortage of trained personnel in many of the countries participating in the project, special emphasis has been placed on the training of national staff. By the end of 1984 over 300 scientists and technicians from 13 African countries had been trained in various aspects of crop improvement research involving sorghum and millet, as well as other crops of the region.

10. While the project has made steady progress and is receiving enthusiastic moral and material support from the participating Governments, as well as complementary assistance from bilateral donors, it is evident that, in view of the dearth of adequately qualified and trained personnel and material resources in many of the countries concerned, and in the context of the current critical food situation in many parts of Africa, a long-term commitment is needed from all concerned, including external donors, in order to place national research programmes on a self-reliant basis. In view of the fact that the current UNDP project is scheduled for completion in December 1985, ICRISAT has approached UNDP for supplementary financial assistance for an additional period of three years beginning 1 January 1986.

11. The overall progress and accomplishments of the ICRISAT programmes were scrutinized recently by a panel of independent consultants appointed by the Technical Advisory Committee (TAC) of CGIAR. This panel complemented ongoing work and strongly endorsed the continuation of external assistance on a long-term basis to permit the expansion of the research and testing activities, together with the enlargement of an intensified training programme to benefit, in particular, those countries where agricultural research systems are still weak. The research and training programmes sponsored by UNDP form an essential and indispensable part of a larger effort of several bilateral and multilateral agencies which are providing

substantial inputs of seeds, fertilizers, pesticides and agricultural implements, together with additional technical assistance, to help to build up national capabilities in increasing food production in the concerned West African countries.

II. THE PROJECT

12. The main purpose of the supplementary assistance is to enable ICRISAT to continue, expand and intensify the research, training and technology transfer programme for the improvement of sorghum and millets in several countries of Africa so as to achieve increased production of these two crops, as well as groundnuts, an important crop which also helps build up soil nitrogen through biological nitrogen fixation.

13. Specific objectives of the follow-up programme are:

(a) Continuation of regional breeding programmes of sorghum, millet and groundnuts, with increasing emphasis on concurrent regional testing of promising varieties, under different agro-ecological conditions in experiment stations, as well as the diffusion of these materials to national programmes for eventual testing and use in farmers' fields;

(b) Conducting integrated research in soil and water management, fertility and physiology of these crops, particularly with reference to drought resistance, temperature tolerance and seedling establishment;

(c) Collection of germ plasm, storage and screening of the afore-mentioned crops;

(d) Assisting national programmes to conduct research in these crops;

(e) Strengthening ICRISAT training activities in sorghum, millet and groundnuts by establishing a training programme in West Africa, based at the ICRISAT Sahelian Centre (ISC), Niamey, Niger in addition to presently organized training activities at the ICRISAT headquarters in India.

14. The above programme will be directed by ICRISAT and overseen by four specialists as follows: (a) millet breeder, regional, Niamey, Niger; (b) millet breeder, transition zone, Burkina Faso and Mali; (c) sorghum breeder, regional, Burkina Faso and Mali; and (d) principal training officer, Niamey, Niger.

15. Approximately 38 per cent of the funds requested from UNDP will be utilized for direct training costs.

16. As already provided for the current UNDP project, the additional activities envisaged under supplementary assistance, as described above, will be reviewed by the Project Advisory Committee during 1985 or at the beginning of 1986, and again at a subsequent date deemed suitable by ICRISAT, with appropriate advice from the Food and Agriculture Organization of the United Nations. If necessary, in

consultation with ICRISAT, the project may also be evaluated by a team of independent consultants towards the end of the supplementary assistance period.

17. The expenditure component of the proposed supplementary assistance is as follows:

	\$
Subcontract	3 900 000
UNDP direct costs	300 000
TOTAL	<u>4,200,000</u>
