INTERNATIONAL CENTRE FOR UNDERUTILISED CROPS

A: Summary.

1. **Title:** Identification and commercialisation of underutilised plant species of national, regional and international importance within an International coordinated collaborative programme on Underutilised Crops.

2. **Duration:** The following Objectives and Activities fall within a 5-year timeframe.

3. **Objectives:** Strengthening national and regional programmes to enhance sustainable development through collaborative research on underutilized crops. The priority research areas include: a) genetic studies and initial selection and breeding programme to supply planting materials b) agronomic technology development leading to production guidelines c) post-harvest research to improve handling, cooking and processing. This includes development of various cooking recipes and d) promotion of production and utilisation of underutilized crops.

4. **Activities:** The major constraints for developing underutilized crops have been identified at national and regional commodity group meetings (Underutilized Tropical Fruits in Asia Network-UTFANET, Southern and Eastern Africa Network of Underutilised Crops-SEANUC, West African Tropical Fruits Network-WAFNET, Underutilised Traditional Vegetables in Asia and the Pacific Network-UTVAPNET) organised by ICUC and its partners. These are: no appropriate national policy, lack of local and regional markets, failure to gather farmers traditional knowledge, lack of good planting materials, lack of farmer participatory research, lack of appropriate production and post-production technology for utilisation and poor extension services. Hence the ICUC’s activities encompass aspects of the whole commodity chain - dissemination of information and knowledge, utilization of germplasm, breeding, agronomy, post-production technology, marketing and economic, social and environmental aspects. However, the present project will focus on:

Assessment of existing and emerging national and regional programmes on underutilized crops through regional meetings involving stakeholders, including national policy makers, farmers’ organisations, private entrepreneurs, scientists, NGOs and CBOs and extension agencies (4 meetings in 4 regional fora Year 1-2. APAARI, FARA WANA and FORAGRO have been approached and a positive response received from APAARI so far)

Establish a Committee (Advisory Committee) involving stakeholders who will prioritise areas of research within each commodity group and will develop initial strategies based on the socio-economic well-being of communities for food and nutrition security, poverty alleviation, sustainable use of underutilised crops, wider adaptation and high-value product development in an integrated system for recommendation to the partners. The areas of research will link up with all ongoing programmes (national and regional) and will include:

a) Continuity of gathering, and exchanging information, technology experience, developing consensus on activities through workshops, exchange visits and dissemination of publications, proceedings of meetings, fact sheets, field days and holding meetings with producers and processors, through publication of global newsletters and by maintaining the web site.
b) Agreeing national strategic policies for action and regional cooperation.
c) Regional collaborative research programmes in line with national and regional policy, to be carried out by the national partners. This will be commodity chain dependent. (Year 2-5)
d) Mid-project workshop to evaluate progress and review impact (Year 3)
e) End of project workshop (Year 5)
f) Continue research on high priority species, subject to availability of funds, and according to refocus strategies.
5. **Main innovations of the proposal:** ICUC, its national partners and other organisations have been active in promoting research and development projects and regional or commodity networks on underutilised crops for a decade. This project will bring these disparate activities together within a new and innovative thematic commodity chain based network. The project will promote and commercialize underutilised crops (Agenda 12 of Global Plan of Action) by addressing the constraints and opportunities, by building on the concept of commodity chains, and by linking the issues of biodiversity (Agenda 21 of UNCED), conservation and utilisation in novel production systems for crop improvement, product development, socio-economics, environmental impact and marketing. The mechanism of innovation is the thematic commodity chain based integrated research (including farmers participatory research) network of stakeholders and partners to address the constraints and explore the opportunities for a common strategy for the dissemination of results among stakeholders.

6. **Area:** Commodity chain. Policy is to incorporate underutilized species into sustainable production systems, linked to local, regional and international markets.

7. **Region:** Global

**B. Stakeholders**

(i) **Targeted Beneficiaries:** The project will be linked up with the existing underutilised crops programmes of ICUC, its partner’s and other organisations and there will be a wide range of beneficiaries from this innovation. The primary beneficiaries are the resource poor farmers, producers and growers of underutilised crops developed from underutilised species in Asia, Africa, the Caribbean and Latin America. Emphasis will be given to raising the income of small farmers, particularly by helping them escape from the poverty trap of subsistence farming by moving them into income earning commercial activities. This target group has a comparative advantage for this activity, as they are unlikely to compete with large commercial ventures which have monopolised the production and marketing of the traditional commodities. Other beneficiaries will be the associated traders and consumers of the new commodities. Both groups can guarantee long term commitment because of the nature of their activities. Emphasis will also be given to nutritious foods, thus improving the health of the producers and consumers. It is anticipated that research and development work will focus on specific rural communities in each region, and for each commodity group. In Southern Africa communities have already been identified by ICUC which has been working with them. However, at least one community (probably more) will benefit for the work on each identified priority crop. In years 3-5, it is anticipated that a minimum of 12 communities, each involving between 10-25 farm families, will directly benefit from the activities of the project. In addition, and as yet unknown, but considerable, number of small scale agro-industrial processors, traders and consumers will also benefit.

(ii) **Research Partners:** Research will be primarily conducted with farmers, the private sector and NGOs with whom ICUC has already been involved. 9 countries of Asia and the Pacific and 10 countries of Africa have already agreed in principle to be involved with the project. APAARI has already endorsed UTFANET. Several NGOs from Asia and Africa and 3 countries from Latin America have shown interest. The research will also be conducted by the NARS institutes and Universities of participating countries. Research will be supported by institutions already involved in underutilised crops and the International Agricultural Research Centres of the CGIAR system. The ICUC current programme already involves many of these partners. These activities will be expanded and enlarged to include new partners. Present partners include the NARS of India, Thailand, Indonesia, Vietnam, Nepal, Sri Lanka, Pakistan, Bangladesh, the Philippines, South Africa, Tanzania, Ghana and other countries in West and Southern Africa. Work is conducted where possible through the regional forum APAARI and sub-regional forum ASARECA. The CGIAR IARCs currently involved are IPGRI and ICRAF.
(iii) Proposed Budget: (for 5 years)

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<thead>
<tr>
<th>Category</th>
<th>Amount</th>
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<tbody>
<tr>
<td>Project personnel</td>
<td>250,000</td>
</tr>
<tr>
<td>Cost of 4 thematic workshops</td>
<td>80,000</td>
</tr>
<tr>
<td>Project cost (4 countries, 1 in each region)</td>
<td>250,000</td>
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<tr>
<td>(over 4 years)</td>
<td></td>
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<tr>
<td>Knowledge transfer</td>
<td>50,000</td>
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<tr>
<td>Travel expenses</td>
<td>50,000</td>
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<tr>
<td>Communication etc</td>
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<tr>
<td>Administration cost</td>
<td>120,000</td>
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<tr>
<td>End of project meeting</td>
<td>80,000</td>
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<tr>
<td>Contingency</td>
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<td></td>
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<td>US$910,000</td>
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Existing projects (implemented by ICUC) are already in place and funded by DFID (UK), the National Lottery Charity Board (UK), FAO and other donors. In addition to this, many partners have agreed in principle to contribute “in kind”.

C. Expected Results and Impact

1. Main expected results.

(i) Technological packages: Technological packages which include selected varieties of new crops, associated recommended cultural practices including the cropping systems in which they could be grown, harvesting, processing and quality control, opportunities for assessing marketing and market development for each priority species.

(ii). Documentation and dissemination: This is one of the most important aspects of promotion and commercialization of underutilized crops. It will include information on commodity chains including socio-economic and marketing. Already ICUC has a web site which is regularly updated in all aspects of underutilised crop production and marketing. Monograph series have been published by ICUC and its partners. Fact sheets have been produced by ICUC on many priority crops.

(iii). Socio-economic results: Increased income generation by small farmers from sale of new products. Small farmers move from unproductive subsistence farming into more commercial activities. Reduction of poverty. Improved health through better diets of producers and consumers. Development of high value products. Income generation of traders, exporters and processors. Availability of increased range of nutritious foods and other agricultural products, at realistic prices, to consumers in developing countries. Welfare of women improved as many new crops will be grown by women in home gardens.

(iv) Environmental improvements: Conservation of many species, and the biodiversity within the habitats in which they occur in the wild, secured through utilisation. Reduced depletion of wild populations through less gathering and habitat destruction as the new crops become grown in integrated agricultural systems. Many new species will be adapted to fragile and degraded environments. Improvement of degraded environment, increased productivity on farmlands will reduce the pressure of farming in fragile environments.

2. Dissemination of Results: Direct benefits to the communities involved in the R&D work. Spread of these benefits to other communities. Dissemination of information through local media channels and extension services. News of benefits, and available technological packages, disseminated through the web site, publications and newsletters.
3. **Proposed impact assessment:** Impact will be regularly monitored throughout the project. A mid-term workshop will be held in year 3 to evaluate progress, and end of project workshop will be arranged to measure the impact in year 5. National statistics of participating countries will be used to monitor changes in production and trade, in farm incomes and in human welfare and health. Base-line data will be collected in year 1. Impact will be measured by the number of new crops developed from underutilized species. Success will be claimed if at least 4 new crops are developed at the end of year 5 and the farmers incomes have been raised as a result.

**D. Partnership**

Roles of stakeholders.

- **Project Design:** The Project will be designed at the GFAR regional assessment meetings, involving the following stakeholders: farmers’ groups, NGOs, the private sector and NARS research institutions and Universities.

  The meetings will be convened and coordinated by ICUC, with invited participation from selected IARCs and ARIs.

- **Project implementation:** The project on collaborative research will be coordinated by ICUC, responding to the decisions taken by the Advisory Committee (AC). The AC will consist of stakeholders such as Farmers Group, NGOs and representatives nominated by the regional and sub-regional fora of GFAR. ICUC will implement the documentation and dissemination, will produce annual and other reports for the project, and will produce the Global Newsletter which is co-funded by FAO. Individual projects within the network will be implemented by national or regional institutions, supported by IARCs and ARIs. Each project will involve the local stakeholders within the NARS research institutions, NGOs, and the private sector as appropriate.

- **Project Management:** The project will be managed by ICUC, responding to the decisions of the AC, to whom it will be responsible and the Director of ICUC will have ultimate management responsibility. Individual project activities will each have their own leader or field manager, responsible for the activity, and who will report to the Director of ICUC.

- **Result Dissemination:** Activities of the project will be disseminated through exchange of information, technology and experience and through workshops, exchange visits, field days, and meeting with producers and processors and through the publication of proceedings of meetings, fact sheets, a global newsletter and by opening up and maintaining the web site and other locally available mechanisms. Co-ordination of dissemination will be undertaken by ICUC.

**Expected added value**

By operating a global collaborative research project, value is added in terms of the sharing of resources and work loads. The project (network) will be well placed to access finance for project activities, and will co-ordinate the dissemination of information.

**E. Conclusion:**

In recent years there has been a great deal of interest expressed in widening the plant species base on which agriculture depends. This interest resulted in the establishment of ICUC a decade ago, and in
increased activity with these species in other organisations, including the CGIAR system. ICUC has been engaged in a range of activities over the decade, including:

i. Publication of a Monograph series and books on underutilised crops

ii. Organising national, regional and international conferences

iii. Establishing regional commodity networks (e.g. UTFANET, UTVAPNET, SEANUC and WAFNET)

iv. Developing a range of research activities and securing funding for implementing them.

v. National or regional training courses on specific subjects of underutilized crops.

vi. Training at Masters and Doctorate levels (through linked Universities).

vii. Establishing a data-base of most aspects of underutilised crops, such as, national policy, species inventory, ecosystems, production including in integrated systems, post-production handling, cooking, processing, socio-economic and marketing. Data will also include organisations involved in the development of underutilised crops.

viii. Disseminating information through exchange of technology and experience and through workshops, exchange visits, through publications of proceedings of meetings, fact sheets, field days and meeting with producers and processors, Global and UTFANET Newsletters and by establishing a web site.

It is concluded that these ICUC activities should be linked with the activities of other organisations in a new partnership within a collaborative research network, if all parties are to avoid duplication and competition for limited resources, and work together in pursuance of a common goal.

The Global Forum (GFAR) is asked to debate the issues raised in this paper in the expectation that a Collaborative Research Network to strengthen national and regional programmes on Underutilised Crops can be recognised and supported. It is only through such a new initiative that all partners will be able to co-operate in meeting the aspirations of the stakeholders.