



## The International Centre for Underutilised Crops (ICUC)

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### Strengthening Underutilised Crops Research and Development in Africa and Asia

Revised project proposal dated 7 March 2006

#### Introduction

It is estimated that 1.2 billion people do not have enough food to meet their daily requirements and a further 2 billion people are deficient in one or more micro-nutrients (Azam-Ali and Battcock, 2001). Most of them are from developing countries. Many rural and urban households use traditional underutilised crops to meet their needs, but these crops are being displaced because of pressure from imported species, demography and household structure changes. In addition, loss of agro-biodiversity and farmers' dependence on a few highly selective crops resulting in narrow food baskets, have also caused food and nutrition insecurity and poverty in rural and urban communities.

There are many plant species with significant food and/or industrial potential which remain underutilised through a lack of a coherent strategy for their evaluation and development. The vast number of those unused and underutilised species represent an enormous untapped commodity resource which can help to meet the increasing demand for food and nutrition, energy, medicines and industrial raw materials. Some of these untapped resources are either partly or fully domesticated but most remain wild and unevaluated. With the development of modern agricultural practices, the potential of many of these resources has been neglected. Some have been so neglected, and the erosion of their gene pool is so severe, that they are often regarded as "lost crops". Nevertheless, in much of the world, underutilised crops and commodities play a vital role in the lives of the rural and urban poor, because they contribute to livelihoods, poverty alleviation and sustaining the environment. Many of these species are included in traditional subsistence farming systems, particularly in marginal areas, and in many cases these crops and commodities are life-savers for millions of resource-poor people, in regions where food and nutritional security are significant problems.

Rural communities prepare food from underutilised crops; use them for health care, shelter, forage and fuel. Many products are produced at the household and small-scale level offering opportunities for income generation and employment. These crops include cereals, pseudo cereals, fruits and nuts, pulses, vegetables, root and tubers, oilseeds and other industrial forage and fodder species. Traditionally, underutilised crops make a significant contribution to the diet of rural households, particularly during periods of drought and famine and during dry seasons (Campbell, 1987).

The production of underutilised crops plays a central role in ensuring the food security for millions of people worldwide. The benefits of these species are manifold as they contribute to:

- Household livelihoods
- Poverty alleviation
- Maintaining biodiversity
- Maintaining traditional subsistence farming systems
- Sustaining the environment
- Saving lives during hazardous times
- Maintaining the social structure

However, the role of underutilised crops is often ignored or underestimated. Slow progress in the development and utilisation of underutilised crops, results in a number of constraints

which are summarised below:

- Lack of information on production, nutritional quality, consumption and utilisation
- Lack of information on economic benefits and market opportunities
- Lack of (improved) quality planting materials
- Lack of improved production technologies, consequently low yield
- Post-harvest and transport losses
- Lack of technology for adding value – village level food processing
- Local market structures poor and lacking
- Lack of national policy, interest of agriculturists, extension offices
- Lack of credit and investment.

In 1992 the International Centre for Underutilised crops (ICUC) identified these priority problems and configured its global programme to overcome them, by working through its national partners, stakeholders including NGOs, CBOs and network members in particular in Asia (UTFANET<sup>1</sup>, UTVAPNET established in 1995 and 2000 respectively) and Africa (SEANUC, established in 1996).

This proposal aims to follow up ICUC's earlier activities and revisit the constraints identified more than a decade ago. Since then, underutilised crops have gained more recognition in the global research strategy, demonstrated by increased activities, such as the BMZ/GTZ funded Global Facilitation Unit for Underutilized Species at IPGRI started in 1996 ([www.underutilized-species.org](http://www.underutilized-species.org)), the IFAD funded Neglected and Underutilized Species project by IPGRI 2002-2005 ([www.ipgri.cgiar.org/nus/home.htm](http://www.ipgri.cgiar.org/nus/home.htm)), the focus of the World Vegetable Centre AVRDC on indigenous (underutilised) leafy vegetables in particular in Africa ([www.avrdc.org](http://www.avrdc.org)), and lately, the recognition of the value and need for further research on the genetics of underutilised species by the CGIAR's Science Council in the new System Priorities (CGIAR, 2005).

In particular, this proposal seeks to undertake the following:

- Support partners in awareness raising activities on the importance of underutilised plant species at all levels (policy makers, researchers, farmers, trader, end users);
- Generate and disseminate information resulting from research in all areas of underutilised crop development;
- Assess the potential of underutilised plant species for improved livelihoods, and suggest entry points;
- Assess, and remove, existing barriers to the participation of small-scale entrepreneurs in the marketing of underutilised crop food products;
- Build capacity in partner institutions and of beneficiaries.

Through these activities, ICUC will endeavour to become an engine in underutilised crops research and development. It will stimulate the building of new partnerships beyond the networks mentioned above and also actively participate in existing projects funded by other donors to complement the activities listed above.

The benefits for rural and urban people will be (1) a greater awareness of the value of traditional (and often underutilised) plant species for nutrition, income generation and as a buffer strategy in times of economic hardship or environmental disaster; (2) availability of improved pre- and post-harvest technologies; (3) an improved political climate for the production and marketing of underutilised crop products.

The International Water Management Institute (IWMI) has agreed in principle to provide the base for ICUC HQ. ICUC will be run as a programme of IWMI as its programmes have synergy with the work of IWMI and the relationship will be mutually beneficial. The ICUC strategic theme "Improving Degraded Land through use of Underutilised Crops" and IWMI theme "Land, Water and Livelihoods" are complementary. Additionally the potential of underutilised crops to contribute to the drought coping strategies of the poor and to purify

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<sup>1</sup> See Annex for list of acronyms

and/or to use waste water have been identified as possible areas for collaborative research for development.

## **The Project**

**Purpose:** Strategies for improved sustainable livelihoods and income generation through diversified production and products of underutilised crops developed and promoted.

The project intends to deliver against this purpose through a series of studies determining the role of underutilised crops in poor people's livelihoods strategies. These studies, together with the development of a decision support system on how best to access the (national and regional) market for small-scale entrepreneurs will provide relevant information to assist rural and urban poor families in developing livelihoods strategies which allow for a certain amount of buffer against economic and environmental risks. In addition the project seeks to foster greater collaboration amongst research and development partners and to develop modern communication channels to promote the use of underutilised plant species.

**Duration:** 2.75 years (October 2004 – June 2007)<sup>2</sup>

### **Outputs:**

- 1. Partnerships strategy for activities on underutilised crops for Asia and Africa, developed in consultation with large range of partners.**

With underutilised crops gaining more prominence, more donor initiatives are developing and more national and international players are active. Discussions with partners – in particular with IPGRI and its Global Facilitation Unit on Underutilized Species (GFU) – have shown the need for greater synergy in underutilised crops activities in order to avoid duplication and identify gaps. No overarching strategy for research and development on underutilised plant species exists. Therefore, a consultation process will be initiated through electronic consultation with a large audience globally, and a workshop with key partners in both Asia and Africa. This process will not only facilitate the development and buy-in to a strategic plan by the partners; at the same time it will enhance partnerships and yield collaborative arrangements for the ultimate benefit of rural and urban poor people. It will also contribute to the emerging policy dialogue on underutilised species. ICUC will establish a small Scientific Advisory Board to support the process of partnership building.

**Key partners:** IPGRI, GFU, ACUC, (SEANUC<sup>3</sup>)

- 2. Decision support tool on factors of success and failure for market access by small producers of underutilised crop products.**

Building on previous DFID-funded activities by ICUC (FRP R8399) and other projects (for example DFID 790-629-133, 187-522-002, 781-648-003), enough information has been developed to enable a critical analysis of factors contributing to failure and success of enterprise development and market access for underutilised crop products. A decision support tool will be developed to guide trainers and extension personnel in the suitability of crops and products depending on market forces and other external effects.

**Key partners:** ACUC, KIT, CIAT

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<sup>2</sup> Actual time frame for delivery of proposed activities is 1.75 years (from October 2005) when new director took over leadership of ICUC and revised project activities. Activities for the period October 2004 – September 2005 were reported to DFID in the Annual Report dated 5 September 2005.

<sup>3</sup> The original SEANUC network has become inactive. New partnerships with African NARS and NGO/CBO partners will be developed.

**3. Knowledge on the potential of underutilised species as risk buffer in rural livelihoods strategies in Africa and Asia.**

Underutilised crop species are mentioned as central in the livelihoods of the rural and urban poor. However, detailed data are not available to the actual use and potential of various species in diverse livelihood systems. The lack of data has been hampering advocacy efforts to remove barriers to the use of underutilised species and their products in international markets (for example the EC Novel Food Crops Directive). Assessing the potential of underutilised plant species in securing a livelihood through their potential for income generation, their nutritional benefits or in assisting the recovery of degraded soils for cash crop production, we will determine entry points and develop practical recommendations. A series of discrete scoping studies is proposed to allow engagement with partner organisations.

**Key partners: IWMI, ICARDA, IPGRI, GFU, (SEANUC), ACUC**

**4. Dissemination of Information on underutilised plant species through ICUC’s website, news circulars and personal communication.**

A key constraint identified by ICUC’s partners was the non-availability of quality information material. In the past ICUC has been very successful in the production of printed monographs, extension manuals and posters in local languages, as well as supporting the production of a global newsletter on underutilised crops. However, South-South communication and information exchange could be improved. Especially in Asia, the use of computers and modern communication technologies (for example SMS messaging services), is becoming increasingly common in the urban and peri-urban areas. This project will therefore continue to disseminate information through traditional channels such as printed materials, but will also experiment with new methods, such as interactive CDs, and also open a space for electronic discussion on underutilised plant species issues.

**Key partner: SLDA AudioVisual Centre**

**Activities:**

- 1.1 Draft strategy document developed and circulated;
- 1.2 Consultation workshops in Asia and Africa with each 20 participants;
- 1.3 Revised strategy document developed and made available;
- 1.4 New partnerships developed with IPGRI, AVRDC and others;
- 1.5 Scientific Advisory Board for ICUC established;
- 2.1 Comparative study on market access in Sri Lanka, India (and Nepal?) following recent processing and marketing study;
- 2.2 Development of decision support system for small-scale entrepreneurs using case studies from ICUC and non-ICUC projects;
- 3.1 Series of studies to verify claims on the value of underutilised species as risk buffer for the rural poor in at least three ICUC partner countries;
- 4.1 Website developed and maintained;
- 4.2 Information circular developed;
- 4.3 Electronic discussion forum established;
- 4.4 Active communication with partners maintained.

Activities	Outputs
1.1 Draft strategy document developed and circulated; 1.2 Consultation workshops in Asia and Africa with each 20 participants; 1.3 Revised strategy document developed and made	1 Partnerships strategy for activities on underutilised crops for Asia and Africa, developed in consultation with large range of partners.

available; 1.4 New partnerships developed with IPGRI, AVRDC and others; 1.5 Scientific Advisory Board for ICUC established.	
2.1 Comparative study on market access in Sri Lanka, India (and Nepal?) following recent processing and marketing study; 2.2 Development of decision support system for small-scale entrepreneurs using case studies from ICUC and non-ICUC projects.	2 Decision support tool on factors of success and failure for market access by small producers of underutilised crop products.
3.1 Series of studies to verify claims on the value of underutilised species as risk buffer for the rural poor.	3 Knowledge on the potential of underutilised species as risk buffer in rural livelihoods strategies in Africa and Asia.
4.1 Website developed and maintained; 4.2 Information circular developed; 4.3 Electronic discussion forum established; 4.4 Active communication with partners maintained.	4 Dissemination of information through ICUC's website, news circulars and personal communication.

**References:**

- Azam-Ali, S. and Battcock, M. 2001. Promoting and protecting traditional food products. DFID Crop Post Harvest Programme. Issue Paper 4.
- Campbell, B.M. 1987. The use of wild fruits in Zimbabwe. *Economic Botany* 41: 378-385.
- Consultative Group on International Agricultural Research (CGIAR) Science Council 2005. CGIAR Systems Research Priorities 2005 – 2015. Science Council Secretariat, Washington D.C. 96 pp.

## Logframe

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption
<b>Goal</b> Improved livelihoods for rural and urban women and men by sustainable use of underutilised crops.	By 2020, net income of small households in the project area increased by 30% and malnutrition decreased	Government statistics, FAO, WHO databases	Satisfactory enabling environment for wider adoption of new and improved production systems by poor households
<b>Purpose</b> Strategies for improved sustainable livelihoods and income generation through diversified production and products of underutilized crops developed and promoted.	Increase in production and marketing of locally available underutilized crops. Increased income and health of local community members.	Project progress reports; monitoring production and products from underutilized crops beyond project duration; national marketing statistics	Participation by local communities; commitment by partners beyond project duration
<b>Outputs</b>	<b>Indicators of Achievement</b>	<b>Means of Verification</b>	<b>Risks and Assumptions outside project control</b>
1 Partnerships strategy for activities on underutilised crops for Asia and Africa, developed in consultation with large range of partners.	Strategy document available by September 2006.	Strategy document; Report on consultation process; Individual partners' (including ICUC) workplans show link to strategy.	Recipients of draft strategy during electronic consultation are not interested in contributing; delay possible due to clashes with partner timetable.
2 Decision support tool on factors of success and failure for market access by small producers of underutilised crop products.	Report, policy briefs and supporting publications available by March 2007.	Reports and publications available, decision support tool based on case studies available.	Civil unrest could make field access difficult and would result in the selection of new countries; lack of personnel due to shortage of qualified personnel in partner institutions.
3 Knowledge on the potential of underutilised species as risk buffer in rural livelihoods strategies in Africa and Asia.	Publications available by June 2007. Project concept notes developed for further collaborative activities.	Publications, posters, workshop/conference attendance.	Lack of personnel due to shortage of qualified personnel in partner institutions.
4 Dissemination of information through ICUC's website, news circulars and personal communication.	ICUC website developed and maintained; information exchange forum established by March 2006.	Website, news circular, reports available; number of hits/downloads registered on website; numbers of email requests/responses for information.	Relevant information is not freely available for consolidation by ICUC; project partners are not cooperative and fear intellectual property misuse.
<b>Activities</b>	<b>Inputs – physical and financial (in GBP)</b>	<b>Milestones</b>	
1.1 Draft strategy document developed and circulated; 1.2 Consultation workshops in Asia and Africa with each 20 participants; 1.3 Revised strategy document developed and made available; 1.4 New partnerships developed with IPGRI, AVRDC and others; 1.5 Scientific Advisory Board for ICUC established.		1.1 Draft ready and circulated by February 2006; 1.2 Workshops completed by June 2006; 1.3 Revised strategy available by September 2006; 1.4 ICUC actively engaged in at least IPGRI's Neglected and Underutilised Species Project and AVRDC's Global Horticultural Initiative by June 2006. 1.5 SAB meets at least once before September 2006.	

Activities	Inputs – physical and financial (in GBP)	Milestones	
2.1 Comparative study on market access in Sri Lanka, India (and Nepal?) following recent processing and marketing study; 2.2 Development of decision support system for small-scale entrepreneurs using case studies from ICUC and non-ICUC projects.		2.1 Study completed and published as ICUC Research Report by September 2006; 2.2 Decision support system and related publications available by March 2007.	
3.1 Series of studies to verify claims on the value of underutilised species as risk buffer for the rural poor.		3.1 At least 4 studies completed and published as ICUC Research Reports in November 2006, February 2007, May 2007, June 2007.	
4.1 Website developed and maintained; 4.2 Information circular developed; 4.3 Electronic discussion forum established; 4.4 Active communication with partners maintained.		4.1 Website developed by December 2005; 4.2 Information circular established by March 2006; 4.3 Electronic discussion forum operational by June 2006; 4.4 Continuous information exchange with ICUC available through ICUC website and interactive communication by email, phone and in person.	





## **ANNEX**

### **List of acronyms**

ACUC	Asian Centre for Underutilised Crops based in Sri Lanka (a regional centre of ICUC)
AVRDC	The World Vegetable Centre, Taipeh, Taiwan (formerly the Asian Vegetable Research and Development Centre)
BMZ	German Federal Ministry of Economic Cooperation
CBO	Community-based organisation
CGIAR	Consultative Group on International Agricultural Research
CIAT	Centre for Tropical Agricultural Research, Cali, Colombia
DFID	United Kingdom Department for International Development
GFU	Global Facilitation Unit for Underutilized Species of the Global Fund for Agricultural Research (GFAR), based within IPGRI, Rome
GTZ	German Association for Technical Cooperation
ICARDA	International Center for Agricultural Research in the Dry Areas, Aleppo, Syria
IFAD	International Fund for Agricultural Development, Rome, Italy
IPGRI	International Plant Genetic Resources Institute, Rome, Italy
IWMI	International Water Management Institute, Colombo, Sri Lanka
KIT	Royal Institute of the Tropics, Amsterdam, The Netherlands
NGO	Non-governmental organisation
SAB	Scientific Advisory Board
SEANUC	Southern and East African Network for Underutilised Crops (a regional initiative by ICUC)
SLDA	Sri Lanka Department of Agriculture
UTFANET	Underutilised Tropical Fruits in Asia Network (a regional initiative by ICUC)
UTVAPNET	Underutilised Traditional Vegetables in Asia and the Pacific Network (a regional initiative by ICUC)