



The International Centre for
Underutilised Crops

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Dear colleagues,

The last two weeks were interesting in light of the announcement that the Nobel Peace prize was given to advocates of climate change issues. Several colleagues from the ASB programme are or were members of the IPCC and we congratulate them to the recognition given to their work! The discussion is timely and a reminder that we should increase our efforts to demonstrate with good data the potential of underutilised crops in increasing poor people's resilience to environmental shocks.

We posted a couple of issues on biofuel in the last ICUC-News, and are continuing today with an article posted in ISIS (see 3.2). This one is very interesting as it cautions the current euphoria and suggests the need for more good research. In response to ICUC-News #55, Horst Weyerhaeuser sent a thorough review on opportunities for jatropha production in Southwest China which we have now added to our e-library (see 4.2).

The ICUC-Network is growing, but only few people provide us with information about themselves. If you want to benefit from the diversity amongst the network, please introduce yourself in one or two lines for section 5. Send your entries directly to me (h.jaenicke@cgiar.org) so that I can post them in the next issue of ICUC-News.

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With best wishes,
Hannah

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1. Funding & Job opportunities
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1.1 New carbon finance facilities
[from Vanessa Meadu]

The World Bank announced on October 11 the establishment of two carbon finance facilities. The Forest Carbon Partnership Facility (FCPF) will aim at supporting programs in forest rich countries to target the real drivers of deforestation and develop concrete activities to reach out to poor people who depend on forests to improve their livelihoods. It will also help developing countries build the technical, regulatory, and sustainable forestry capacity to reduce emissions from deforestation and degradation. Twenty countries have already requested an opportunity to participate in FCPF. The fund's target size is US\$200 million.

The second initiative, the Carbon Partnership Facility is expected to be used in areas such as power sector development, energy efficiency, gas flaring, transport, and urban development, including integrated waste management systems.

World Bank Group President, Robert B. Zoellick stated. "Both facilities will pilot ways to ratchet up the fight against climate change by adopting a larger-scale, longer-term approach to greenhouse gas emission reductions. They will also build on the World Bank Group's traditional relationship with developing countries, and the new relationships it has forged over the past decade as a pioneer in carbon finance."

For the full press release please visit

<http://web.worldbank.org/WBSITE/EXTERNAL/NEWS/0,,contentMDK:21506175~pagePK:34370~piPK:34424~theSitePK:4607,00.html>

For more information on Carbon Finance at the World Bank, please visit www.carbonfinance.org

1.2 Deputy Director General for Research at IRRI

[a message from Gerald Bourrier]

My company has been retained by the International Rice Research Institute (IRRI), located in Los Banos, Philippines, to assist with the recruitment of a new Deputy Director General for Research.

This position was advertised in major scientific publications and web sites several months ago. (*A summarized copy of this advertisement can be found below*). However, IRRI Management was not convinced that these ads reached all possible qualified persons who might be attracted to this position, particularly in relation to issues of gender and diversity. Therefore, the competition is being broadened at this time through a series of direct personal contacts to persons familiar with IRRI and its mandate.

The purpose of this message is to enquire whether you might know of suitably qualified female scientists with the desired qualifications whom we could contact to discuss their possible interest in this position. Obviously, such approaches would be made in confidence. If you can be of assistance, or if you require additional information or are interested in submitting an application, please contact me by e-mail at bici@sympatico.ca, or by phone at 1-613-247-7291

Yours truly,
Gerald R. Bourrier, P. Ag.
Principal
Bourrier International Consultants Inc.
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Ottawa, Ontario, K1H 1B6
CANADA

The position:

Reporting to the Director General, the Deputy Director General for Research has full responsibility for leading, planning, executing, managing and monitoring IRRI's global research for development activities through a research management matrix system of programs and disciplines. IRRI works through collaboration with national agricultural research and extension systems.

Candidates should have:

- PhD in agricultural, natural, or social sciences; an outstanding record of research; and strong leadership ability in research planning and management.
- Demonstrated capabilities in understanding and communicating global and regional issues in agriculture and food security with diverse stakeholders.

- Experience in broad partnerships and networking, particularly in the developing countries of Asia, Africa, and Latin America.
- Proven skills in managing human and financial resources as well as in fund-raising.
- Ability to nurture and facilitate teamwork in a multicultural environment.
- Sensitivity to gender and diversity of the Institute and the local cultures of collaborating countries

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2. Workshops & Training Courses

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2.1 International Policy Dialogue Workshop “The promotion of indigenous vegetables in African urban and periurban spaces: Production, consumption, poverty alleviation and policy”

Urban agriculture is widely practiced in many cities of the developing world, providing income, nutrition and often a safety-net function to the poorest sectors of society, and as such is an important, but underexploited vehicle for poverty alleviation. It makes productive use of undeveloped land, but is frequently not considered in urban land use planning and zoning processes and outcomes. Simultaneously, many small-scale farmers and market-gardeners in these cities and the surrounds propagate and make use of species largely overlooked by research and development agencies. The species are collectively termed “indigenous vegetables”, and represent a vital store of biodiversity for local, national and international gene pools. Within the last decade national and international agencies have realised that the neglected species offer significant opportunities for development of new varieties and crops, provided swift action is taken to conserve the local knowledge and genetic strains.

With this realisation has come a flurry of research activity over the last several years, including the European Union funded Coordination Action, *IndigenoVeg – Networking to promote the sustainable production of indigenous vegetables through urban and peri-urban agriculture in Africa* (www.indigenoveg.org). The time is ripe to pull together the research effort to date, distil the policy implications and consider further research requirements for the next decade. This is particularly so on the African continent, where as yet there has been no informed synthesis of current knowledge and its policy implications. Hence the need for this workshop.

The specific purpose will be to:

- Bring together the African research and policy community, with international counterparts, who are interested in urban agriculture and indigenous vegetables.
- Highlight African contributions, research and challenges related to these topics within the context of international programmes and debates.
- Explore the synergies and opportunities between the fields of urban agriculture and indigenous vegetables.
- Distil key policy lessons from the research to date and prepare draft policy briefs for dissemination to international donor, development and aid agencies, governments, NGOs, and the private sector.

Dates

23 – 26 January 2008 (including a one day field trip)

Venue

Rhodes University, Grahamstown, South Africa (www.ru.ac.za)

Format

The workshop comprises three main sessions.

Session 1 (January 23): The opening “state-of-the-art” session will consist of keynote presentations and posters on a range of topics (drawing on previous *IndigenoVeg* events and from researchers outside the *IndigenoVeg* network) to define the current situation of research in the area of overlap between indigenous vegetables and urban agriculture, highlighting the gaps and future research needs.

Session 2 (January 24): During this facilitated session scientists and policy research resource persons will work together to transform scientific ideas and concepts into policy recommendations relating to indigenous vegetable and urban agriculture research.

Session 3 (January 25): This interactive session will enable the working groups to present the policy recommendations developed during session 2 to invited policy makers drawn from the seven African partner countries. The policy makers are especially invited for this session to discuss these recommendations with the group of scientists and policy researchers.

Call for contributions

Display areas for exhibiting posters relating to indigenous vegetable production, marketing and consumption in urban and peri-urban areas will be provided. Interested parties are invited to submit a 350-word poster abstract no later than 15 November, 2007 to m.pasquini@bangor.ac.uk. A limited number of sponsored places may be available and will be allocated on a competitive basis to poster presenters. We especially invite organizations working in indigenous vegetable production, marketing and consumption in urban and peri-urban areas to share their successes and challenges with the participants of the workshop. Besides the "lessons to be learned", we are interested in benchmarking research results directly related to our workshop topic.

Organizing agencies

This conference is being organised by the *IndigenoVeg* Network, which is funded by the EU Sixth Framework programme, under priority FP6-2003-INCO-DEV-2. Partner details may be found on the website www.indigenoveg.org.

Contact details

Further information may be obtained from the workshop host:
Prof. Charlie Shackleton
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or the Network Co-ordinators
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e-mail: e.m.young@bangor.ac.uk or m.pasquini@bangor.ac.uk

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2.2 CSO-CGIAR online dialogue

This is an invitation for you to participate in a facilitated on-line dialogue between October 24 and November 9 as a next step of the CSO-CGIAR engagement process. (See: <http://www.cgiar.org/csos/index.html>)

The suggested main theme will be on the CGIAR Center-CSO Partnership Study commissioned by the CGIAR Science Council "in order to better understand the organization, development and impact of CG-CSO partnerships". The report presents 5 key insights and lessons learned from the analysis of six notionally successful CG-CSO partnerships. The study and its executive summary – still in draft format - is available at:

http://www.dgroups.org/groups/cgiar/cso-cgiar-forum/index.cfmop=dsp_resource_details&resource_id=43663&cat_id=17499

Please note that the authors are solely responsible for the accuracy of information and opinions expressed in the report. The study may still undergo substantial changes to improve the accuracy of the information and breadth and depth of the analysis. We are circulating the report in draft format to capture preliminary reactions, but it has not been endorsed by the Science Council yet. Please note that this document is not final hence not for quotation or citation.

By sharing the preliminary findings we hope to spark off a conversation around your reactions to the key insights of the study, and enrich our common understanding of the challenges and opportunities that we face in our partnerships.

You can participate in English, French, or Spanish. Postings or a summary of the postings in the latter two languages will be translated into English. Over this 2-week period, participants are expected to dedicate not more than 2 hours per week to this event.

We hope that you decide to take part in this on-line discussion. Please notify us to add your address to the list by sending an e-mail to: cso-cgiar@cgiar.org.

Thank you very much,
The CSO-CGIAR Team

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3. Publications & Information

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3.1 ADB Supporting Indonesia's Fight Against Malnutrition Thru \$50M Loan

MANILA, PHILIPPINES - The Asian Development Bank (ADB) is supporting efforts by the Government of Indonesia to reduce malnutrition among poor children and pregnant women to put the country on track to achieving the United Nations' Millennium Development Goals (MDGs). Improved nutrition status of women and children will directly affect the achievement of MDGs related to poverty and hunger, primary education, child mortality, maternal health, and combating HIV/AIDS, malaria and other diseases.

ADB will provide a \$50 million loan to help finance the Nutrition Improvement through Community Empowerment Project, which is estimated to cost \$71.4 million. The balance will be covered by the Government of Indonesia. A technical assistance of \$500,000 will strengthen evidence-based planning and budgeting for nutrition programs at national and local levels.

"It has long been known that malnutrition undermines economic growth and perpetuates poverty. Therefore, the project will support government efforts to reduce and prevent malnutrition in about 1.48 million children under five years and 500,000 pregnant women in about 4,000 poor rural and urban areas," said Barbara Lochmann, Social Sector Specialist of ADB's Southeast Asia Department.

"There is clear evidence that the major damage caused by malnutrition takes place in the womb and during the first two years of life; this damage is irreversible," she said. "It causes lower intelligence and reduced physical capacity, resulting in lower productivity. In addition, urbanization exacerbates the transition to sedentary lifestyles and high-fat diets, especially among the urban poor."

The project will focus on institutional development for nutrition policies, programs and surveillance; improving facility- and community-based nutrition services; strengthening community capacity to carry out nutrition, hygiene and sanitation interventions; promoting food fortification, advocacy for decision-makers and communication; and providing project management support.

This is ADB's first nutrition investment project and the Government's first nutrition project after decentralization in 2001. "The Project is an important investment to support Indonesia in meeting the MDGs and reduce poverty. The returns to investing in nutrition are very high, above those for controlling malaria and water and sanitation" said Ms. Lochmann.

Today 28% children under the age of five years are underweight in Indonesia. This implies that about 5 million children under five years have compromised growth, cognitive and behavioral development. It is now widely recognized that childhood malnutrition will lead to poor school enrollment and achievements and pose a long-term threat to girls' reproductive health and adult productivity.

Several factors influence the declining nutrition status, including the onset of decentralization in 2000, characterized by an overall deterioration of the quality of health services, which includes nutrition programs and surveillance. Nutrition was also affected by the Asian Financial Crisis of 1997, when rapid inflation led to an increase in food prices, reducing access to food and social services by the poor. In addition, there has been inadequate breast-feeding, especially from about 6 months. A lack of access to clean water and sanitation has contributed to diarrhea-related diseases, which has had a detrimental impact on children's nutritional status, and lastly urbanization has exacerbated the transition toward more sedentary lifestyles, and high-fat diets increasingly among the urban poor.

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3.2 Jatropha Biodiesel Fever in India

Jatropha may seem like the most sustainable option among bioenergy crops but has yet to prove its potential. Research on socio-economic and environmental impacts of large-scale cultivation is needed as well as lifecycle analysis on energy and carbon emissions. Dr. Mae-Wan Ho writes in ISIS Press

Release 15/10/07 (a fully referenced version is available to ISIS members, <http://www.isis.org.uk/JatrophaBiodieselIndia.php>)

Perceived advantages of jatropha

Jatropha curcas is a poisonous scrub weed of the euphorbia family originating in Central America. Among its chief selling point as a bioenergy crop is that it grows in marginal, eroded land, and is resistant to drought. So it is not expected to compete for land that could grow food, nor would it require a lot of water, or fertilizers and pesticides, unlike corn, oilseed rape, soybean, sunflower and other food crops diverted into biofuel production [1-3] (Biofuels for Oil Addicts, Biodiesel Boom in Europe? *SiS* 30; Biofuels: Biodevastation, Hunger & False Carbon Credits, *SiS* 33), now generally acknowledged to be unsustainable, as exemplified in a recent *Nature* editorial [4]. *Jatropha* gives much higher oil yields, and trumps the poor energy returns of those other crops, and being inedible, biodiesel made from *jatropha* does not increase the price of edible commodities. *Jatropha* also has advantages over the high-yielding sugarcane and oil palm, as it occupies marginal lands, instead of plantations established by destroying natural grasslands or cutting down forests, resulting in the net release of megatonnes of greenhouse gases into the atmosphere [3, 5] (Biofuels Republic Brazil, *SiS* 33).

Jumping on the jatropha train

The former President of India, Dr. Abdul Kalam, is a strong advocate of *jatropha* biodiesel. In a speech in 2006, he said that out of the 60 million ha of wasteland available in India, over 30 million ha are suitable for *jatropha* cultivation [6].

Recently, the State Bank of India provided a further boost to the cultivation of *jatropha* by signing a Memorandum of Understanding with D1 Mohan to give loans totalling 1.3 billion rupees to local farmers in India, to be paid back with the money that D1 Mohan pays for the harvested *jatropha* seeds.

The Indian Railways have started to use *jatropha* oil blended with diesel to power its diesel engines with great success.

Many Indian states have already jumped onto the *jatropha* train, including Andhra Pradesh, Chhattisgarh, Karnataka, Tamil Nadu, Rajasthan, Maharashtra, and Ahmednagar.

Jatropha has been held up as a reliable source of income for India's poor rural farmers, providing energy self-sufficiency, while reducing fossil fuel consumption and greenhouse gas emissions [7].

Several states have distributed plants free of charge to small farmers, encouraging private investment in *jatropha* plantations and setting up biodiesel processing plants. The Ministry of Rural Development, which is to coordinate the national mission on biofuel when it is approved, estimates that there are already between 500 000 to 600 000 ha of *jatropha* growing across India.

India is not alone. China claims to have 2 million ha of *jatropha* under cultivation, and announced plans to plant an additional 11 million across its southern states by 2010. Burma has plans to plant several million ha, and the Philippines, and several African countries have initiated large-scale plantations of their own. So far there are 200 000 ha of *jatropha* in Malawi and 15 000 ha in Zambia, almost all under a formal lease or agreements with the UK-based company D1-Oils [8].

From uncertain beginnings to the Kardungla pass

There are many uncertainties over the potential of *jatropha* as a biodiesel crop. The plant has never been domesticated. Its yield is not predictable, the conditions for optimum growth is not well defined, and the potential impacts of large-scale cultivation not known [7]. Pushpito Ghosh has been working on the plant for a decade and now directs the Central Salt and Marine Chemicals Research Institute (CSMCRI) in Bhavnagar; he fears that a premature push to cultivate *jatropha* could lead to "very unproductive agriculture".

Some years back, the United Nations Development Programme had funded exploratory plantings of *jatropha* on degraded land. Although the plants managed to grow, the yields of oil seeds were a far cry from the widely publicised figure of 1 300 litres of oil per ha.

Nevertheless, a consortium including the automobile company DaimlerChrysler, the German Investment and Development Company in Cologne, India's Council of Scientific and Industrial Research, and the University of Hohenheim funded Ghosh's team in 2003 to develop the transesterification process needed to turn *jatropha* oil into biodiesel (see [2]).

The jatropha biodiesel Ghosh's team made is indeed of good quality, sufficient to satisfy European standards and outperforming biodiesel from rapeseed, sunflower and soybean.

Ghosh's vision, and part of CSMCRI's mandate, was to make the transesterification process affordable for use in villages; nearly 80 000 of India's 600 000 villages are currently without access to fuel or electricity. DaimlerChrysler, on the other hand, announced it was to take two of its Mercedes C-Class cars on a 6 000 kilometre road-test across India using Ghosh's biodiesel.

Ghosh's team soon produced a transesterification unit capable of producing 250 litres of biodiesel a day, enough for use in villages and small-scale industry. Throughout April and May 2004, DaimlerChrysler's Mercedes ran entirely on jatropha biodiesel from this unit, and in the summer of 2005, the company had several automobile journalists take the cars on a high-altitude test in the Himalayas, including the Khardungla pass at 5 359 metres above sea level, one of the world's highest motor-roads.

Jatropha incentives and investments

The state of Chhattisgarh has the most well-developed jatropha biodiesel programme in the country. It has given away 380 million jatropha seedlings to farmers, enough to cover 150 000 ha, and also provided 80 oil presses to various village governing bodies with guarantees to buy back jatropha seeds at 6.5 rupees (~US\$0.16) a kilogram. Several local micro-refinery businesses have sprung up across the state to provide biodiesel for tractors, irrigation pumps, jeeps and village power generators.

The CSMRI has received an order from the Defence Research and Development Organisation of India's Ministry of Defence for a refinery that would produce 1 000 litres a day, costing 14 million rupees to install. Each litre of biodiesel will have a net production cost of 26 rupees if the seedpods are bought at 6 rupees a kilo and every bit of the seed and seed pod is turned into something valuable after oil is extracted; the seedcake into fertilizer and the seed husk into a high density brick for burning as fuel.

The widespread government support has attracted foreign investments. UK-based D1 Oils, the world's largest commercial cultivator of jatropha, has around 80 000 hectares in Chhattisgarh and in the southern state of Tamil Nadu, with plans for an additional 350 000 ha over the next several years. The state government funds jatropha seeds and D1 Oils guarantees to buy the harvested seeds at the price prescribed by the state.

Uncertain future and missing research

Most of the plantings in India are not sufficiently mature to reach maximum productivity. Ghosh is wary that jatropha is funded and subsidized too much before mass cultivation is fully understood, and is advising farmers to plant jatropha interspersed with their current crops rather than commit themselves fully to planting it as a cash crop. While India's Planning Commission is projecting yields of 1 300 litres per ha, Ghosh estimates a more conservative half of that figure.

D1 Oils Indian operations is focussing on research on yield, and the company is testing a number of jatropha varieties to find which grows best in India's varied climatic regions. But research remains fragmentary and uncoordinated.

Biodiesel entrepreneur Louis Strydom, in trying to establish a jatropha biodiesel plantation and refinery on a massive scale in Kenya finds that while subsistence biofuel production and refining as a supplemental crop by small farmers around the world is a viable economic model, large commercial scale production is quite a different matter [8]. For one thing, the yields and multiple annual harvests of Jatropha have been exaggerated; they can only be achieved under optimum conditions of rainfall, soil quality, and applications of insecticides and fertilizers. Ghosh and others are right in recommending a cautious approach even in jatropha, the theoretically ideal bioenergy crop. Much needed is research on the ecological and socio-economic impacts of large-scale jatropha plantations and a proper lifecycle analysis of the energy and carbon dioxide emissions involved.

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4. ICUC-related information

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4.1 Publications available

We have the following publications available upon request. Please contact Sushilla for more information and an order form (s.rajamanie@cgiar.org) or download it from our website: <http://www.icuc-iwmi.org/Publications/index.htm>.

- Tamarind monograph (Fruits for the Future 1)
- Ber monograph (Fruits for the Future 2)
- Safou monograph (in French) (Fruits for the Future 3)
- Baobab monograph (Fruits for the Future 4)
- Annona monograph (Fruits for the Future 5)
- Zapote monograph (in Spanish) (Fruits for the Future 6)
- Ndjanssang monograph (Fruits for the Future 7)
- Monkey Orange monograph (Fruits for the Future 8)
- Mangoosteen monograph (Fruits for the Future 9)
- Jackfruit monograph (Fruits for the Future 10)
- Tamarind extension manual
- Ber extension manual
- Safou extension manual (French)
- Baobab extension manual
- Annona extension manual
- Zapote extension manual (Spanish)
- Ndjanssang extension manual
- Monkey Orange extension manual
- Mangosteen extension manual
- Jackfruit extension manual

ALL MONOGRAPHS AND MANUALS ARE NOW ALSO AVAILABLE ON CD

- Domestication, production and utilisation of new crops
- Global research on underutilised crops
- Position Paper 1: Underutilised plant species: the role of biotechnology
- Position Paper 2: Underutilised plant species: impacts of promotion on biodiversity
- Research Report 1: Potential for small-scale processing and marketing of tropical fruits in Sri Lanka
- Research Report 2: A value-chain analysis for the Sri Lankan rambutan subsector
- Research Report 3: Analysis of economic characteristics of value chains of three underutilised fruits of India
- Strategic Framework for Underutilized Plants Research and Development

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4.2 New in ICUC's e-library

Go to: <http://www.icuc-iwmi.org/Community/library.htm#Applications>

1. Weyerhaeuser, H; Tenningkeit, T; Yufang, S and Kahl, F. (n.d.) Biofuels in China: An analysis of the opportunities and challenges of *Jatropha curcas* in Southwest China
2. Spielman, D.J., Hartwich, F and von Grebmer, K. (2007) Sharing Science, Building Bridges, and Enhancing Impact. Public-Private Partnerships in the CGIAR. IFPRI Discussion Paper 0070.

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5. ICUC network

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In this section we introduce new and old subscribers to ICUC-News to encourage greater interaction and benefit from the great diversity of readers. If you haven't done so, please send a brief introduction of yourself and your interest in underutilised crops to h.jaenicke@cgiar.org. We will not publish your email or phone contacts and if anyone is interested to establish direct contact, please write an email to me.

Prof. Kunuthur Srinivasa Reddy, Ph.D.(Soil Science), Freelance Consultant on Organic Agriculture, India with a missionary zeal to drive out hunger of all forms of life on earth, to conserve, protect, improve and maintain the quality of natural resources so dear to happy and healthy life.

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Championing underutilised plant species for food, nutrition and sustainable development