



The International Centre for
Underutilised Crops

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Dear colleagues,

Today's issue carries a number of interesting articles I have received over the past two weeks. I hope you find them as thought stimulating as I did. We also have two surveys that I'd like to draw your attention to: a survey by UK's DFID for the development of their 2008-2012 research priorities, and one by the CGIAR on global public goods. Both are good opportunities to flag the contributions by underutilised crops and diversified agricultural systems.

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With best wishes,
Hannah

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1. Funding & Job opportunities

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1.1 IDRC Doctoral Fellowships

See: http://www.idrc.ca/en/ev-23374-201-1-DO_TOPIC.html

Applications will be accepted for research at the doctoral level in areas corresponding to IDRC's research priorities. IDRC's research activities focus on four program areas:

- Social and Economic Policy
- Environment and Natural Resource Management
- Information and Communication Technologies (ICTs) for Development
- Innovation, Policy and Science

Eligibility

Applicants must meet the following conditions for eligibility:

- Hold Canadian citizenship or permanent residency status in Canada, or hold a citizenship of a developing country;
- Be registered at a Canadian university;
- Research proposal is for a doctoral thesis and has been approved by the thesis supervisor;
- Proposed field research will take place in a developing country;
- Provide evidence of affiliation with an institution or organization in the region in which the research will take place;
- Have completed course work and passed comprehensive examinations by the time of award tenure.

Value

The award will cover justifiable field research expenses to a maximum of CA \$20,000 per year. Candidates may apply for a renewal of funding for a second year of field work if the nature of the research requires a second season of data collection. Renewals are an exception and are provided for those disciplines that may need to deal with the uncertainties of growing seasons and climatic characteristics that affect data collection.

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1.2 DAAD: Studies and Research in Sustainability - Study and Research Scholarships 2008

Application deadline: 15 November 2007

With financial support provided by the Federal Ministry of Education and Research (BMBF), the German Academic Exchange Service (DAAD) offers a special programme on "Studies and Research in Sustainability" that gives particularly qualified graduates, doctoral students and postdocs from selected countries as well as German doctoral students and postdocs the opportunity to study and research in Germany or abroad.

Objectives

In offering the scholarship programme, the DAAD and BMBF aim to make a specific contribution to strengthening international cooperation in education and research, above all with a view to promoting sustainable development in the field of environmental and climate protection. Besides supporting cultural and professional exchange, the programme particularly provides support to integrate knowledge and to transfer the latest findings produced by sustainability research on selected key funding areas of the BMBF (see annex). The study and research stays aim to give the scholarship holders opportunities for getting to know and to use research sites and their specific infrastructures (e.g. pilot plants, laboratories, test plants) and networks. At the same time, scholarship holders are encouraged and enabled to initiate international research projects and strategic cooperation in research and industry. To develop international cooperation and implementation strategies, close cooperation with companies and partners from fields of practice (multipliers and disseminators, NGOs) is supported by financing internships.

Core Topic Area: Biogenic Resources and Value Chains

The individual study and research projects pursued by the scholarship holders will concentrate on the following topics:

- Sustainable use of biogenic resources and value chains, including environmentally-friendly product and system innovation in farming and food products and in forestry and forest products;
- Sustainable land use systems (farming, agroforestry systems, forests);
- Integrated water resources management in rural areas

Countries

Applications are open to graduates, doctoral students and postdocs from Brazil, Russia, India, China, South Africa and Mongolia, and to doctoral students and postdocs from Germany.

For more information and application documents, visit

<http://www.daad.de/deutschland/foerderung/ausschreibungen/07443.en.html>

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1.3 CIFOR – several vacancies

Director of Financial Services and Administration.

The Director will serve as the Chief Financial Officer, oversee the finance and administrative teams, and contribute to Center-level initiatives emerging from CIFOR's new strategy.

Director of Forests and Governance Programme.

The Director will lead research on how society can make more informed and democratic decisions that support sustainable forests and livelihoods. The multidisciplinary programme currently includes research on collaborative forest management, decentralization, finance, and law enforcement. The programme will also contribute to Center-level initiatives emerging from CIFOR's new strategy, including the CIFOR Climate Change and Forests Initiative.

Senior Scientists – Climate Change (three positions, one for each research programme: Forests and Governance, Forests and Livelihoods, and Environmental Services and Sustainable Use of Forests). The Scientists will contribute to CIFOR's Climate Change and Forests Initiative.

Senior Scientist – Forests and Livelihoods.

The Scientist will contribute to research on one or more of the topics covered in the programme: livelihood outcomes of forest conservation and management; forests and human well-being; forests and health; forest industry and local livelihoods; deforestation and local livelihoods.

All of these positions will be based at CIFOR's headquarters in Bogor, Indonesia. Successful candidates will contribute to exciting new initiatives currently under development as part of CIFOR's new strategy. We are looking for individuals who share our passion for enhancing the role of forests in human well-being and environmental conservation, and our commitment to professionalism, innovation, impact, and collaboration. We value diversity, and are especially interested in candidates from developing countries and women.

For further details on the positions and instructions regarding how to apply, and to learn more about CIFOR, please visit our website at <http://www.cifor.cgiar.org>.

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2. Workshops & Training Courses
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3. Publications & Information
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3.1 Help formulate priorities for DFID research 2008-2013

The UK Department for International Development (DFID) is seeking your views to help it develop a new research strategy for the period 2008-2013.

In the coming period, DFID's budget for research will double, mobilizing an additional £650 million to fund new research programs.

These extra resources need to be spent well - which is where YOUR knowledge is needed.

To guide its strategic planning, DFID has identified 12 questions where it needs your help and expert contributions.

The questions relate to four priority research themes as well as how the new strategy can enhance the quality, relevance, and use of the research DFID supports.

For the following questions, please share what you think are the key issues that need to be addressed through research, the trends that are most likely to affect this topic in the future, as well as any key questions for aid effectiveness.

You can contribute by sending an email to r4dconsult@dgroups.org [please give a concrete subject line to help in analyzing the contributions]

You can also visit a special web site (<http://r4dconsult.wordpress.com/>) and answer the question(s) that interest you:

1. How should DFID support work on sustainable agriculture and develop its work on economic opportunities and growth?
2. How can DFID support research on "killer diseases" and healthcare and develop its work on building the capabilities of individuals and families for a better life?
3. How can DFID support research into the impact of climate change on poverty and environmental change more broadly?
4. How can DFID support research into good governance , including social and policy design areas?
5. What other emerging global trends should DFID research address?
6. How can DFID improve the way research responds to user demand?
7. How can DFID best support cutting-edge science that benefits poor people?
8. How can DFID best help developing countries increase their research capacity?
9. How can we make sure that people in developing countries can access and use research?
10. How should DFID position its research in the future?
11. How far should DFID take a more regional approach to some research questions?
12. How should DFID work with other funders of development research?

More information on the consultation and DFID funded research can be found at: <http://r4dconsult.wordpress.com> and <http://www.research4development.info/>

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3.2 Online consultation: CGIAR and Global Public Goods

The CGIAR needs your thoughts on how the knowledge and information it produces - and looks after - can be made more accessible.

From 12 September until 3 October, the CGIAR will hold an online discussion on its draft strategy "Global Public Goods (GPGs): From Data and Information to Food." The discussion will focus on priority areas of the strategy, users and their needs, and on obstacles and methodologies. The aim is to make it easier for CGIAR staff, partners and potential partners to access, use and add value to the research and outputs of the CGIAR.

To contribute to the discussion, you need to register on the e-agriculture.org platform (<http://www.e-agriculture.org/18.html>). The various contributions and discussions are open to visit. Participants in the e-agriculture week in Rome can follow these discussions in person on 28th September.

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3.3 Increased carbon dioxide levels could make grasslands 'unusable'

From ATSAF News 14 Sept 2007

Increasing atmospheric carbon dioxide levels could change the nature of grasslands and decrease their usefulness as grazing pastures, say researchers. The study was published in the journal Proceedings of the National Academy of Sciences this week (27 August).

If carbon dioxide levels in the atmosphere continue to rise, important grazing areas in parts of Africa, Kazakhstan, Mexico, Mongolia, and southern and South East Asia could be under threat, according to lead author Jack Morgan, a plant physiologist from the US Department of Agriculture's Agricultural Research Service.

Morgan and colleagues constructed six clear chambers on semi-arid grasslands - used for grazing livestock - in Colorado, United States. The grasslands have a similar climate and plant communities to many grasslands in the developing world. Half of the chambers contained carbon dioxide at today's levels, while the other half were fed levels double that of today. Over the course of five years, the researchers found that the plant community in the chambers with elevated carbon dioxide levels changed dramatically. Woody shrubs - in particular, a shrub called fringed sage or *Artemisia frigida* - thrived.

Morgan told SciDev.Net that the shrub comprised less than one per cent of vegetation at the beginning of the study, but became ten per cent of the plant cover by the end. The main reason why these woody shrubs out-compete grasses in conditions of high carbon dioxide, says Morgan, is because their method of photosynthesis is better suited to high levels of the gas. The major concern, he says, is that woody shrubs like fringed sage are unpalatable to most domestic livestock, so domination by these types of plants would render land poor for grazing.

Guy Midgley, chief specialist scientist at the South African National Biodiversity Institute told SciDev.Net that there is already evidence of shrub encroachment in many grasslands of the world. He said that it is still not clear whether carbon dioxide is the main driver of this change.

But nevertheless, Morgan's experiment "suggests that we really need to take carbon dioxide more seriously". Midgley said that in parts of South Africa high levels of bush encroachment may make cattle ranching impossible without expensive mechanical intervention. Both Midgley and Morgan agree that a possible way to lessen the transformation of grasslands is to use controlled burning, which kills shrubs but not grasses, and to prevent overgrazing, which weakens grasses and allows woody plants to move in.

Reference: Proceedings of the National Academy of Sciences doi:10.1073/pnas.0703427104 (2007).

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3.4 Seed sense

(From: Tevita Kete)

Source: Society Guardian <http://society.guardian.co.uk/societyguardian/story/0,,2128333,00.html>

Hundreds of vegetable varieties have been lost from UK soils and are now illegal to grow. But the conservation battle goes on. Judy Steele is growing a row of peas called Carruther's Purple Podded in her Warwickshire garden. She would not find this variety in her local garden centre or in any seed merchant's catalogue. In fact, it is illegal to buy seeds of this old variety. But Steele is not a criminal or a botanical terrorist. She describes herself as "a foster-mother for orphaned pea varieties," and is one of 300 seed guardians for Garden Organic.

Garden Organic - formally known as the Henry Doubleday Research Association, based at Ryton, near Coventry - has developed an extensive seed library of 800 traditional vegetable varieties grown in Britain and which are now outlawed by European legislation.

"During Victorian times, seeds were available from local growers, and gardeners knew who to complain to if they didn't grow, but gradually seed companies got bigger and more remote," says Sandra Slack, head of Garden Organic's seed library. "Plant breeders' rights began in the 1920s. To protect customers and to standardise the seed business across borders, the EU intervened in the 1970s, making sure that seed varieties were properly tested. Unfortunately, testing is expensive and those varieties not tested were dropped. If a variety has been dropped from the approved common catalogue, then its seeds cannot be bought or sold."

Extinction

These days, it is easier to grow cannabis than Carruther's Purple Podded peas or Auntie Madge's tomato or Mr Stiff's bunching onion. Worried that these old varieties would vanish unless they were in circulation, Garden Organic set up what it calls the Heritage Seed Library to rescue our vegetable treasures from extinction. To stay within the law, a scheme was established whereby gardeners pay to become members of the seed library, and each year they are given a selection of six of the hundreds of varieties to grow.

This is not just a smart wrinkle to get around EU rules. There are important cultural and scientific reasons for growing old kinds of vegetables. Many varieties that find their way into the library are part of a very personal history, as well as contributing to local cultural identity and distinctiveness. The pea called Carlin came from a family that had inherited it 100 years ago, when a great grandfather received seeds as a wedding present. This variety dates back at least to Elizabethan times and is still eaten - doused in beer and mint - in parts of the north of England on the Sunday before Palm Sunday - known regionally as Carlin Sunday. One version of the Carlin legend has it that a shipload of these peas arrived in Newcastle upon Tyne when it was besieged in 1644 and saved many from starvation.

Seeds carry these stories through the generations, and also across continents. Few beans can be as poignant as the Cherokee Trail of Tears. In the winter of 1838-39, Cherokee people in the US were forced to march from their lands in Georgia, over the Smoky Mountains in appalling conditions, to be confined in a reservation 1,000 miles away; 4,000 died on the way. The shiny black bean the Cherokee took with them is an important heirloom seed for the American organisation Seed Savers Exchange, based in Iowa, but it has also been grown in Britain for a long time and is in HDRA's seed library.

In the last 100 years, 90% of UK vegetable varieties have been lost from our soils. The same thing has happened in the rest of the world. This loss has been globalisation's gain. Only three corporations now control a quarter of the world's seed markets, and many of the seeds available in catalogues are legally protected hybrids that cannot be saved, or won't come "true" if they are.

In developing countries, saving food plant seed - a traditional practice for which farmers and growers have been criminalised - is tied to the politics of globalisation through issues such as food sovereignty and intellectual property rights: whoever controls seeds controls a people's ability to feed themselves. In Europe and America, vegetable seed conservation is more about the custodianship of genetic and cultural heritage.

Heritage, in the sense of preserving the past, can become a selection of what we like about history and freezing it in time, even though the world that created it has long gone. So it is with seeds. To conserve the world's food seeds for the future, the Global Crop Diversity Trust has built the "doomsday vault", the first global seed bank, housed in a frozen bunker buried under the island of Spitzbergen, near the North Pole. It is intended to protect 3m seed samples from nuclear war, asteroid strike and climate change. Seeds are more than a metaphor for our hopes for the future, and getting them growing - and contributing to biological diversity - can have more value than locking them up in a vault - especially when faced with climate change.

"Seed conservation is important, but if we keep growing these old varieties - many of which have adapted to very local conditions - we will understand more about their adaptability to changes in climate, pests and diseases," Slack says. "For example, peas prefer cooler conditions, and if you're growing them in the north of England and the climate is warming, you might find that varieties such as Glorious Devon or Kent Blue will do better in the future than Lancashire Lad. We are losing older and tougher varieties before we understand their adaptation to climate change.

Cancer treatment

"Also, we don't know about the properties of all the varieties. For example, colour pigments have been discovered that combat illnesses: the red in tomatoes helps prevent hardening of the arteries, greens are used in cancer treatment. We have to make these connections and keep seeds available."

Keeping these old varieties growing is what Steele's row of Carruther's Purple Podded is all about. She will not eat the peas but will collect them to be stored in the seed library, as will the other seed guardian volunteers growing their peas, beans, kale, lettuce, tomatoes, turnips and radishes, so that they can be distributed to a growing number of gardeners.

"I do it for the fun of learning about these old varieties and about how to be self-sufficient," Steele says. "The biodiversity aspect is very important. The Irish potato famine happened because there was no genetic diversity in the crop, so when disease struck, there was no resistance. In Peru, farmers mix lots of potato varieties in the same field as insurance against disease. Also, having heritage seeds in living form enables the plants to evolve in new conditions. In 20 to 30 years' time, there will be a different climate and we need varieties that can cope with that."

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3.5 The False Promise of Biofuels

(From: Tevita Kete)

Source: The International Forum on Globalization and the Institute for Policy Studies. Preface of the document: THE BURGEONING REALITY OF GLOBAL CLIMATE CHANGE

The burgeoning reality of global climate change, rooted in a century of over-consumption of fossil fuels, is merging with another crisis with the same basic root cause—the looming depletion of inexpensive oil and gas supplies ("peak oil"). Combined, they bring the world to an unprecedented and profoundly dangerous moment that threatens global environmental and social crises on an epic scale. These crises

potentially include a breakdown of the most basic operating structures of our society, even industrialism itself, at least at its present scale. Long distance transportation, industrial food systems, complex urban and suburban systems, and many commodities basic to our present way of life—autos, plastics, chemicals, pesticides, refrigeration, et al.—are all rooted in the basic assumption of ever-increasing inexpensive energy supplies. (See Manifesto on Global Economic Transitions, published by IFG). One would think that such threatening circumstances would bring clear and effective movement from the leaders of national governments, acting on behalf of present and future generations.

So far, however, with a few exceptions, the response of most governments has been inadequate to address the scale of the problem. This is particularly the case in the U.S., where government, politicians, and most corporations are still hoping to somehow convert the climate and peak oil crises into a new business opportunity. We are seeing a lot of scurrying and signifying, as each sector, government, business, and that odd new third sector—presidential candidates—are engaged in a mad rush to identify magic bullets to “solve” the “energy problem” while pushing corporate growth and unabated consumerism. By avoiding reality, they make the problems worse, and real solutions more difficult to achieve. Solutions so far include, for example, desperate grabs for the last remnants of oil and gas supplies, thus the war in Iraq. And now all eyes are focused on the Canadian tar sands, which can be mined only at stupendous cost and environmental harms. Next may be the Arctic. At least those are the goals of what we might call the fossil fuel “dead-enders,” many of whom still doubt climate problems exist at all. The more rational and increasingly popular opinion is that the ultimate answer will not come by extending the existence of the destructive fossil fuel economy, but purposely ending it before it does further harms, and then switching as quickly as possible to renewable alternative energies.

But the question is which renewables? They are not all equal either in potential performance or potential harms, though none are likely to have the grim downsides of fossil fuels, or nuclear energy. But, there is a strong case that no combination of renewables will be sufficient to sustain the industrial system at its present bloated, wasteful scale. Ultimately, the answer must involve renewables plus significant efforts toward all-out conservation, efficiency, reduced consumption and “powering down” of energy use. It is crucial that these latter elements always be included in discussions of sustainable futures. All of this comes at a quadrennial moment in the U.S. political context, when presidential sweepstakes take center stage. All proposals are processed and evaluated more in terms of their political saleability, and their potential for fund raising, rather than whether or not they will actually contribute to a lasting solution.

So we now have the spectacle of governments, businesses, and presidential candidates vying to be the bravest leader in bringing forth renewable energy solutions, breaking with foreign oil dependency, and somehow also keeping our economy growing at an exponential rate. They are desperate to seem as if they have the best answer to the crisis of global warming, and for the environment. Regrettably, that desperation has seriously muddied the waters. Proposals and decisions are heading at us at very high speed, but without much serious evaluation, analysis and thought. In fact, wrong decisions are being made very rapidly because of the pressures and opportunities involved for all parties. And we are left in grave danger of replacing one set of harms with another set.

There is some good news. A new process and set of evaluative tools is now gaining favor among scientists, which they are calling “Life Cycle Analysis.” This basically means that new technologies, and specifically energy technologies, are evaluated in a far more comprehensive way, including all inputs and materials used at every stage of their extraction through mining, assembly, transport and performance from “dust to dust.” Their full ecological footprints from the ground-up, from birth to death. This process has the potential to dissuade us from making glib assumptions about which energy alternative actually contributes more, and harms less, than the others. So far, Life Cycle Analysis is not sufficiently in use, and so we may not yet be making much progress in our overall quest for the right technologies and energy systems that will lead to ecological sustainability in a world where what is really needed is a new paradigm, a new set of standards to be achieved, and the appropriate technological and lifestyle choices. The basic goal must be to move toward creating an economy that operates first of all in the interests of ecological sustainability, within the ecological limits of the planet, and which includes social and economic equity, without which no long term solution is possible. The lives of our children and the planet literally depend on our doing the right thing, not the most propitious thing.

It is in that spirit that the report which follows was conceived and created among the key players in the International Forum on Globalization’s Alternative Energy Working Group. It is the first of a series of

reports we will be producing over the next year, that will present fuller details and analysis on some of the hidden problems that may come with certain choices, compare renewables among each other, and compare them to the current fossil-fuel economy.

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3.6 Biodiversity: a "Rock-Paper-Scissors" Game Played at Multiple Scales

(from Luigi Guarino)

See:

http://www.scitizen.com/screens/blogPage/viewBlog/sw_viewBlog.php?idTheme=22&idContribution=1076)

Biological diversity is being lost at unprecedented rates around the world, both in the number of different species and the genetic variety within a species. Do these processes happen independently, or can loss of diversity at one level result in losses at the other? In a study recently published in the journal *Science*, my collaborator and I describe a "rock-paper-scissors" competitive game played among different plant species and different genetic variants of a single species. In this system, losing genetic diversity within a species would lead to the extinction of the other species, and in turn, extinction of one species would lead to the loss of genetic diversity in the remaining one.

For many years, ecologists have puzzled over a central question: How can many different competing species coexist in the same area at the same time? For example, since all plants require the same basic resources, one would expect plant communities to be dominated by the one species that is best at capturing these resources. Population geneticists have a similar central question; how can many different versions of a particular gene coexist in a single population? If one version of the gene increases an individual's ability to survive and reproduce more than the others, then this version is expected to spread through the population due to natural selection, eliminating all other variants. Scientists have developed many theories to explain how either species or genetic diversity can be maintained, but such theories tend to focus on one or the other type of diversity in isolation.

In our study, we asked how diversity at the genetic level might help maintain diversity at the species level, and vice versa. Working with the annual plant black mustard (*Brassica nigra*), we asked whether genetically based variation in a chemical trait of black mustard might determine whether it could coexist with three competitor species. At the same time, we wanted to know if the presence of multiple competitor species (species diversity) could help maintain genetic diversity in the chemical trait.

Black mustard produces a chemical called sinigrin, or allyl-glucosinolate, which is toxic to other plants and to microorganisms in the soil that many plants need in order to grow well. We used artificial selection to create genetic variants of black mustard that produced either high or low levels of this chemical. We then used these varieties to create experimental communities, which consisted of all high sinigrin black mustard, all low sinigrin black mustard, or a mix of three other plant species. Finally, we planted one individual of each type (a high sinigrin black mustard, a low sinigrin black mustard, or a different plant species) into each type of community. This approach allowed us to determine if each type (genotype or species) could invade at least one community. Like in a game of "rock-paper-scissors", if each type can beat at least one other type, then all of the types are likely to persist in the community.

We found that the two varieties of black mustard and the other plant species indeed displayed a "rock-paper-scissors" cycle of competition. High sinigrin black mustard could invade diverse communities of other species, but lost out in competition with low sinigrin black mustard variants. Low sinigrin genetic variants of black mustard on the other hand, could invade communities of high sinigrin black mustard variants, but were out-competed by other plant species. Thus no one type could win in all cases, and so each type could be maintained in the larger community. However, if any one genetic variant or species were removed from the system, the cycle would break down, and the community would become dominated by a single species. This is the first study of its kind to show that diversity within a species is necessary to maintain diversity among species, and at the same time, that diversity among species is necessary to maintain diversity within a species.

As we strive to protect the remaining biological diversity, our efforts must be guided by knowledge of the processes that maintain diversity under natural conditions. Our study suggests that we should not focus on one particular aspect of biodiversity in isolation. Preventing the erosion of genetic diversity within species may require maintaining a diversity of species in a community. At the same time, we may need

to focus on protecting high levels of genetic diversity within species in order to maintain diverse communities of species.

Reference: Lankau, R.A. and S.Y. Strauss, Science 317, 1561-1563 (14 September 2007)

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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

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- 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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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.

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Stephen Mailu. I am a research scientist working for the Kenya Agricultural Research Institute and my interest with underutilised species (specifically taro) in Kenya stems from the possibility of not only expanding taro cultivation but in a way try to look at taro as a means of slowing the draining of wetlands

for the growing of crops such as maize etc which by their nature are not suited for wetlands. This is in addition to the nutritional benefits that taro has.

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P.Srinivas. I am working on diseases of a group of under utilized crops (rice-bean, adzuki-bean, grain amaranth, buck-wheat, horse gram etc.) in College of Forestry and Hill agriculture, RANICHARUI, in Uttrakhand state of INDIA. I am associated with Dr. M.Dutta, Senior plant Breeder, who is the Center-Co-ordinator of the All India Co-ordinated Project on Under utilized Crops in Ranichauri.

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Championing underutilised plant species for food, nutrition and sustainable development