

## OPINIONS

### Food crop diversity is key to sustainability

M. P. Jones

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#### **Thousands of traditional crop species could help break dependence on a few global food crops, and offer valuable environmental services, says *Monty Jones***

Only 150 crop species are grown commercially on a global scale, with wheat and maize alone providing over half of the world's protein and calorie needs. Another 7,000 species play crucial roles in poor people's livelihoods but are otherwise underutilised.

These underutilised species have important traditional uses for food, fibre, fodder, vegetable oil and medicines. But they also have unexploited commercial potential and, if used more widely, could provide important environmental services.

They could be developed to improve food security, alleviate poverty, improve nutrition, raise incomes, and sustain critical and fragile ecosystems.

Growing them commercially could make a vital contribution to halting and indeed reversing the loss of biodiversity in farming systems — which will be the inevitable result of continued reliance on a narrow portfolio of crops.

#### **Irreplaceable resources**

A variety of factors work against maintaining agricultural biodiversity. But among the most important is a lack of knowledge and awareness of agricultural diversity's intrinsic value to society, and its potential for development. Sustainable agricultural systems depend on a diversity of species to withstand attacks — from present and future diseases, pests, climate and other environmental changes — as well as unpredictable social, economic and market demands.

This lack of awareness means inadequate attention and insufficient investment has been given to conserving biodiversity by actually using it. And this is contributing to the loss of irreplaceable genetic resources that are endemic to Africa. The seriousness of this situation has spurred the Forum for Agricultural Research in Africa (FARA, an umbrella organisation for organisations engaged in agricultural research and development in Africa) to support Bioversity International's Agricultural Biodiversity Initiative for Africa.

The initiative aims to conserve and sustainably use agricultural biodiversity by galvanising countries and institutions to work together on the problem and give it greater importance. This will be pursued in the preparations for the Conference of Parties to the Convention on Biological Diversity in Bonn, Germany, in May 2008.

Future food and environmental security must not be sacrificed for short-term financial gains. Protecting against this requires a concerted and holistic approach. For example, gene banks need to be responsive to both the farming and the scientific communities. They also need support from policies that attract scientists to work on underutilised crops and encourage farmers to commercialise them.



Oryza glaberrima and oryza sativa are examples of the benefits of making better use of non-commercial crops  
Flickr/ilmungo

## Reviving a rice cultivar

The revival of the African rice cultivar *Oryza glaberrima* is a good example of the potential benefits to be derived from making better use of non-commercial crops.

In the 1990s, researchers at WARDA (the African rice centre) began to screen their holdings of African rice cultivars. They had discovered that *O. glaberrima* had a number of agronomic properties that are valued by farmers who have limited access to agricultural inputs. Yet *O. glaberrima* was underutilised and endangered. This influenced the decision to hybridise *O. glaberrima* with Asian rice *O. sativa*. The aim was to capture the high yields of *O. sativa* but reduce unwanted characteristics like lodging and shattering while gaining the high stress-resistance of African *glaberrima*. The successful hybrids were released as NERICA (new rices for Africa) types.

Today, the NERICAs are being widely adopted by Africa's rice farmers. They are opening new opportunities for sustainable agricultural development, especially in rainfed environments.

## Heeding calls to action

Rwandan President Paul Kagame signalled another potentially crucial shift in approach when he called for conservation to be seen not only as a government responsibility, but also as a business opportunity for both mainstream enterprises and small business.

Speaking at the First International Research Conference on Biodiversity Conservation and Sustainable Natural Resource Management in Kigali in 2007, he also made it clear that the only sustainable way of guaranteeing the success of a biodiversity agenda — and indeed of conserving any natural resources — is to ensure that policy actions lead to socioeconomic transformation and improved livelihoods.

FARA is following up President Kagame's comments. The organisation is making biodiversity conservation central to its efforts to help achieve the Millennium Development Goals of eliminating hunger and poverty by using natural resources sustainably.

Africa is fortunate to have a wealth of underutilised species. They can help achieve these goals. But it will not happen by chance. FARA is committed to raising awareness and improving understanding of what needs to be done to use and conserve Africa's diverse crop species.

*M. P. Jones is executive director of the Forum for Agricultural Research in Africa, Ghana.*

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## COMMENTS

**kashinath karnic** ( India )

28 April 2008

Dr Jones' opinion on untapped biodiversity in food crops is timely. When many corporates around the world are indulged in destroying biodiversity by propogating genetically modified crops for their own selfish ends, Jones calls on tapping the potential of under-utilized but economically important crops for benefit of mankind needs top priority in present day agriculture research

**Nagib Nassar** ( Brazil )

29 April 2008

The case of reviving the african rice cultivar *Orysa gaberrima* is a good example on the the potential benefits to be derived from making better use of non-commercial crops.

Another example forgotten by the author is the Iraqi cultivar *Triticum durum* which is potential in the same way. However it is threatened by extinction by replacing it by modified genetically wheat. This is what the recent law issued by American occupation determines

**Hannah Jaenicke** ( ICUC | Sri Lanka )

13 May 2008

I'd like to second both Dr Jones and Dr Kashinath Karnic in their plea for tapping the potential of underutilized and traditional crops as resources for future needs, especially to fight hunger and malnutrition and to provide options to increase poor people's resilience against change. There is an electronic discussion forum currently discussing related issues at <http://www.dgroups.org/groups/cta/Underutilisedplants2008/index.cfm>.

**Joy Wilhide** ( OurFriendlyEarth.com | United States of America )

21 May 2008

Monoagriculture has weakened the world-wide food network. Growing corn for ethanol, stripping rain forests to plant crops for export, importing and exporting rather than developing local agriculture to sustain local communities all contribute to the crisis we see today around the world. The growing demand for goods in highly populated developing countries is also putting a strain on the world economy as multinational corporations rob the countries that they mine and farm to feed the most financially rewarding markets. Sustainability has to be the way of the future for the health of the world population.

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<http://www.scidev.net/en/opinions/food-crop-diversity-is-key-to-sustainability.html>

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