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Scientists map out strategy to conserve local cassava varieties in East, Central and Southern Africa to support efforts to fighting deadly cassava diseases

Scientists from Eastern, Central and Southern Africa have stressed on the urgent need to conserve traditional cassava varieties (landraces) being grown by small-holder farmers in the region. This will ensure that their rich genetic material is available to researchers for tackling challenges facing this tuber crop that thrives under challenging climatic conditions, earning the name 'Rambo crop.'

On top of the list of current challenges are the two viral diseases, Cassava Brown Streak Disease (CBSD) and Cassava Mosaic Disease (CMD), which are ravaging the crop in the Great Lakes region and threatening the food security of over 300 million people in sub-Saharan, causing financial losses of millions of dollars.

The scientists drawn from nine countries in the region in a recently concluded meeting in Dar Es Salaam, Tanzania, from 4-6 June 2013, noted that while millions of small-holder farmers in sub-Saharan Africa were still cultivating their local landraces which they have selected over the years and are a rich source of important genes for improving cassava through biotechnology or conventional breeding, very little, of these varieties were conserved in a germplasm repository. Furthermore, a lot of them are disappearing due to pests and diseases.

"We are in danger of losing very valuable genetic material and indigenous knowledge that the farmers have collected over the years at a time when we cannot afford it due to the disease pressure facing cassava and in particularly CBSD," says Claude Fauquet, Director of the Global Cassava Partnership for 21st Century (GCP21) and one of the convenors of the meeting that was hosted by the International Institute of Tropical Agriculture (IITA), Tanzania.

During the meeting, the scientists agreed on the process to collect, evaluate, preserve, identify, and exchange valuable cassava landraces to ensure that breeders have access to a wide variety of disease-free cassava material that is well documented with farmers' information. They also agreed on a unique method of DNA fingerprinting for cassava identification and agro biodiversity evaluation.

"We need genetic diversity and farmers' knowledge to develop varieties that will be accepted and adopted by farmers. However, currently, we do not have such a database. Most of the local landraces exist only in the farmers' fields," she said. "It's therefore important for the cassava

community to come together to collect, evaluate, identify and preserve these valuable germplasm, for the sake of the farmers and for the breeders.”

“Finger-printing of the landraces to get their genetic information would be very important to avoid duplications where we have two seemingly different varieties but genetically they are the same. Or the other way round, two varieties that look different and yet they are the one and the same,” she added.

Christopher Omongo, Coordinator of the regional cassava Centre of Excellence in Uganda said the engine of cassava breeding was germplasm (genetic diversity). So conserving rare germplasm can only add value to these efforts.

“In Uganda, we documented that we lost nearly 500 landraces in the 80’s due to the Cassava Mosaic Disease. With the proposed initiative, such a thing will not happen again,” he said. “We will therefore need a lot of support at the national and international levels from the donor community to realize our goal.

Simon Bigirimana, Head of Cassava Program, ISABU, Burundi, also welcomed the workshop as a move in the right direction in regional cassava breeding efforts. He said he had faced a lot of challenges in the past while trying to conserve farmers’ landraces in his country.

“First we first had two field sites for conserving local landraces. Then one of them burnt down and we lost everything and we now have four sites. Therefore, having a regional conservation effort that includes a regional gene bank will come in very handy,” he said.

Thandie Lupupa, Senior Program officer with the the Southern Africa Development Corporation (SADC) Plant Genetic Resources Centre (SPGRC) noted that while a number of countries in the region had on-going efforts to conserve cassava landraces and varieties, they were greatly hampered by lack of adequate resources and therefore a regional effort would supplements their on-going efforts.

The meeting which was held at the new science building of the eastern Africa hub brought together nearly forty participants drawn from national, regional and international research organizations. The participants were drawn from national research systems of Burundi, Democratic Republic of Congo, Kenya, Madagascar, Malawi, Mozambique, Tanzania Uganda (DRC) and Zambia. Also in attendance were researchers from IITA, Bioversity, CIAT, Global Crop diversity Trust (though video conferencing) and SADC –SPGRC.

At the end of the three day workshop, a steering committee was created to push forward the process including fundraising. If successful, this initiative to collect, evaluate, identify and share cassava landraces will be extended to other parts of the continent and world.

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Founded in 2003, the Global Cassava Partnership for the 21st Century (GCP21) is a not-for-

profit international alliance of 45 organizations and coordinated by Claude Fauquet and Joe Tohme of the International Center for Tropical Agriculture (CIAT). It aims to fill gaps in cassava research and development in order to unlock the potential of cassava for improving food security and also increasing incomes of poor farmers through work to develop industrial products from cassava. GCP21 is providing updated information regarding the crop, the scientists working on cassava and cassava R&D projects in the world.

The International Institute of Tropical Agriculture (IITA) is a nonprofit research-for-development organization that works with partners in Africa and beyond to tackle hunger and poverty by reducing producer and consumer risks, enhancing crop quality and productivity, and generating wealth from agriculture. IITA is a member of the CGIAR Consortium. www.iita.org

The International Center for Tropical Agriculture (CIAT) a member of the CGIAR Consortium develops technologies, tools, and new knowledge that better enable farmers, especially smallholders, to make agriculture eco-efficient-that is, competitive and profitable as well as sustainable and resilient. Eco-efficient agriculture reduces hunger and poverty, improves human nutrition, and offers solutions to environmental degradation and climate change in the tropics. With headquarters near Cali, Colombia, CIAT conducts research for development in tropical regions of Latin America, Africa, and Asia. www.ciat.cgiar.org

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Additional Institutions attending the Cassava Landrace Meeting of the Global Cassava Partnership for the 21st Century and IITA, Dar es Salaam, Tanzania: Agricultural Research Institute, Tanzania; Agriculture Research Institute, Zambia; Eduardo Mondlane University, Mozambique; FOFIFA, Madagascar; Institut des Sciences Agricoles du Burundi, Burundi; Institut National d'Elevage et de Recherche Agricole, DRC; Kenyan Agricultural Research Institute, Kenya; Malawi Plant Genetic Resources Centre, Malawi; Mutanda Research Station, Zambia; National Agricultural Research Institute, Mozambique; National Agricultural Research Organization, Uganda; Rwanda Agriculture Board, Rwanda; Southern Africa Development Corporation, Plant Genetic Resources Centre, Zambia; University of Madagascar, Madagascar; Bill and Melinda Gates Foundation, USA; Bioversity International, Italy; CIAT, Colombia; FAO Tanzania, Tanzania; Global Trust Fund, Germany.

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