



MANAGING CASSAVA VIRUS DISEASES IN AFRICA

THE REGIONAL CASSAVA INITIATIVE

Burundi | Central African Republic | Democratic Republic of Congo | Gabon | Rwanda | Tanzania | Uganda

Cultivated mainly on marginal lands by small-scale farmers, cassava is an inexpensive and essential part of the diet of vulnerable communities across Africa. Millions of people depend on the crop.

Two virus diseases are now threatening the cassava production in East and Central Africa. With funding from the European Union, the Regional Cassava Initiative was rolled out to support smallholders and to prevent further spread of the diseases. Over 100,000 households benefited from the project, strengthening the livelihoods of 500,000 people.

THE ROOT OF THE PROBLEM

Cassava Brown Streak Disease (CBSD) and Cassava Mosaic Disease (CMD) pose an enormous threat to the food security of 135 million people in Central and East Africa. At least half of all plants in Africa are affected by one of these viral diseases.

Both CMD and CBSD are transmitted through the use of infected planting material, while whiteflies – who feed on the sap of young cassava leaves – are vectors of the viruses. CMD misshapes the cassava leaves and hampers the growth of the plant, leading to lower

root yields. At least 30% (or 45 million tons) of Africa's cassava crop is estimated to be lost to CMD annually.

The negative impact is even more severe when cassava plants are infected by CBSD. The virus attacks the roots, making it often difficult for farmers to detect the disease before it is too late. Without adequate response mechanisms, CBSD may cause **root production losses of up to 100 percent**. In extensive parts of the Great Lakes region the disease has been responsible for total crop failure.

CMD has been detected across the whole continent, but is particularly aggressive in East and Central Africa. However, thanks to concerted efforts by a number of stakeholders in the region, survey evidence suggests that although CMD is still highly prevalent the spread rate appears to be gradually reducing. CBSD, on the other hand, is **rapidly spreading**. While initially only appearing in the coastal lowlands of Eastern Africa, outbreaks have now been identified as far as Gabon and Angola, despite control efforts.

Strict quarantine procedures during international exchange of cassava germplasm¹ and the use of resistant/tolerant varieties and virus-free planting material are key for the control of both CMD and CBSD in Africa.

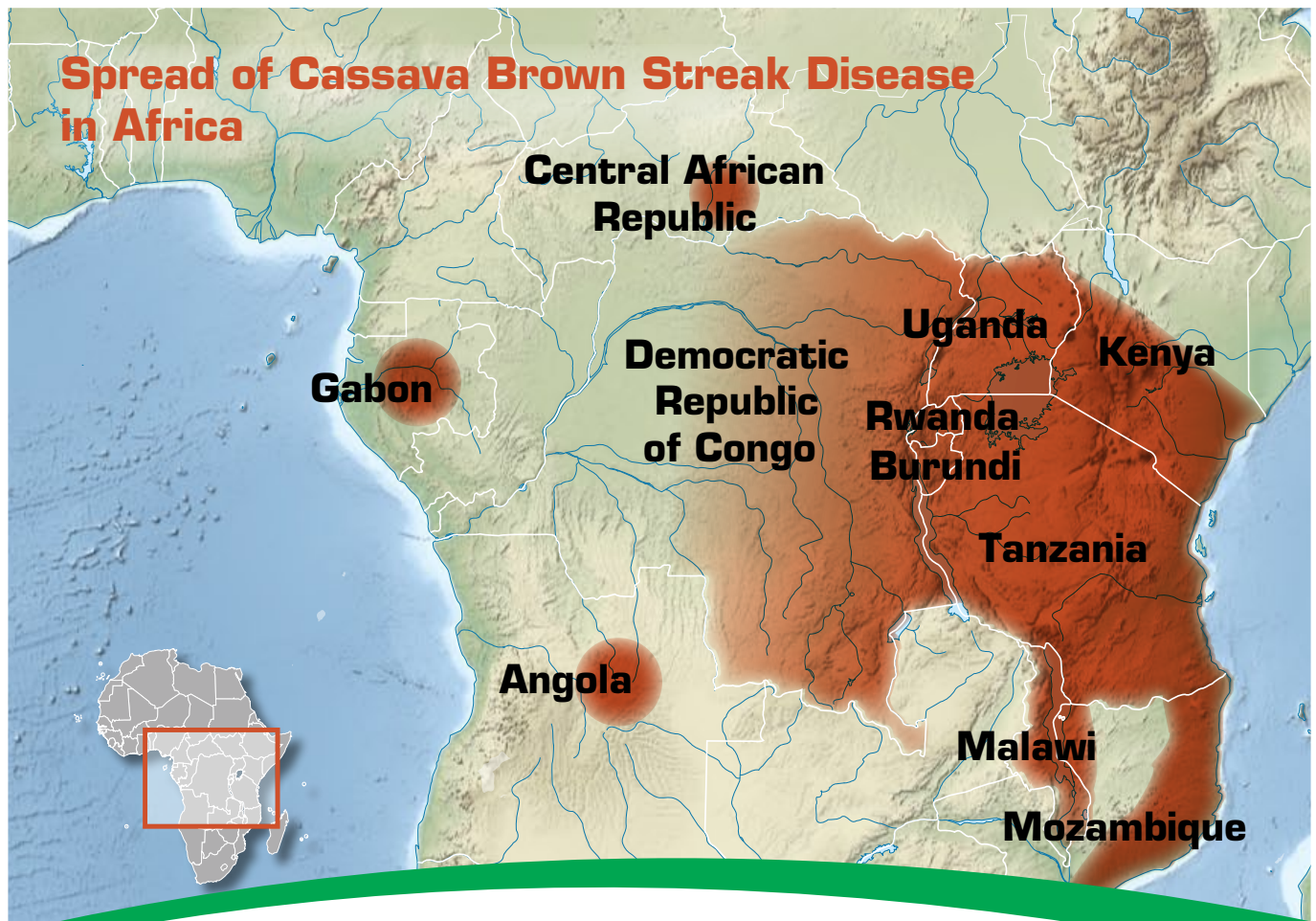
¹ Germplasm is living tissue from which new plants can be grown - often seed collections



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Subregional Emergency Office
for Eastern and Central Africa



PLANTING THE SEEDS

A robust regional effort was required to meet the needs of local farmers and halt the diseases' spread across Africa and the rest of the world. In 2009 the European Union launched the Regional Cassava Initiative, a four-year-project that helped vulnerable communities and actors in the value chain in Burundi, Rwanda, Tanzania, Uganda, Democratic Republic of Congo, Central African Republic and Gabon cope with CMD and CBSD. Coordinated by the Food and Agriculture Organization of the United Nations (FAO), the programme was rolled out by different partners including NGOs, community based organisations, research institutes and governmental agencies.

The project was designed to deliver three major results:

1. New cassava varieties developed and distributed

Agricultural research institutes initiated or completed their germplasm collection and set up multiplication plots of improved cassava planting materials. Disease-resistant and tolerant varieties of cassava were made widely available to vulnerable communities in the region. Farmers were sensitized and engaged through farmer groups, where they were trained on multiplication techniques, disease identification and nurseries maintenance.

"When our crops started to die, we were hungry. Our children had learning problems," remembers Hemeri Mikidadi, small-scale farmer in Hoyoyo, Tanzania. "We were trained on good agricultural practices. Now we leave enough space between our plants, we know when our cassava is affected by diseases and we take the right measures. My cassava is good and strong! We have enough to eat and our children are doing well at school."

2. Improved access to disease surveillance information

The Regional Cassava Initiative improved the accessibility of disease surveillance information, allowing government authorities, donors and other decision makers to implement rapid and accurate response actions when the diseases appear. Stakeholder capacity was enhanced to better

Cassava is a staple food for more than **700 MILLION PEOPLE**, mostly in Africa.

Cassava is the third most

IMPORTANT SOURCE OF CALORIES

in the tropics, after rice and maize.

detect the diseases and to appraise the rates and direction of their spread. Comprehensive cassava-related disease surveys were set up to further collect data, and staff from agricultural ministries and research institutes was trained.

"In our laboratory we are testing for CBSD's presence in cassava samples. Through FAO the information is distributed to other stakeholders in Burundi who further assess the situation," explains Simon Bigirimana, cassava coordinator at the National Research Institute of Burundi (ISABU). "We have started collaborating with other parties to continue the work."

3. National cassava bodies established

One of the main challenges in the region was the lack of coordination between stakeholders. National Cassava Steering Committees now bring together various players in the field – from ministries of agriculture to cassava traders. The committees serve as coordination networks, ensuring information is shared between all partners and across borders. The movement of cassava planting materials is also regulated through the committees to enhance control disease spread.

"National and regional cassava committees have been set up. While more needs to be done to institutionalize these committees, they have started influencing national policies and national strategies are being developed," impact consultant John Stenhouse concludes.



UNLOCKING CASSAVA'S POTENTIAL

Cassava in sub-Saharan Africa is grown mainly by small-scale farmers. Until recently the crop was disregarded by both African consumers, who label it as poor man's food, and scientists. Far less research and development has been devoted to cassava than to other major crops like rice or maize. But the tide is turning.

For millions of Africans, cassava offers a rich source of **dietary energy**, especially for carbohydrates. Often it is the cheapest source of calories available. The roots contain vitamin C, thiamine, riboflavin and niacin. In some countries, cassava leaves are also consumed.

Cassava is reliable. Farmers can expect reasonable harvests even under dire conditions as the plant is one of the least sensitive crops to climate change. Cassava is highly tolerant to both poor (including acid) soils and high temperatures, surviving droughts by reducing its leaf production until the next rains. Breeding can even further improve its **resistance to extreme weather patterns**.

Another factor that favours increased cassava production is the crop's **industrial potential** as derivatives like paper, glue, syrup, flour, ethanol and other manufactured goods open new opportunities for farmers. After maize, cassava is the biggest source of starch globally. Value addition to the crop would generate new income streams for farmers and create employment opportunities, lifting them out of poverty. Cassava derivatives could also replace food and raw material imports.



Roots affected by Cassava Brown Streak Disease



TURNING THE LEAF

Tackling cassava diseases is one of the most effective ways to support the wellbeing of rural livelihoods in Africa. Through partnerships like the Regional Cassava Initiative scientific knowledge around the diseases has been collected and improved management developed. The cassava issue has now been placed on national, regional and international agendas. The success of the project has prompted different partners to step

in or increase their involvement, focusing on further multiplication of planting materials, development of clean seed systems or refinement of quality standards.

But certain challenges remain to be tackled. The majority of the National Cassava Steering Committees, who will continue spearheading national cassava efforts, require further technical and financial support. The new outbreak of Brown Streak Disease has complicated the impact of the Regional Cassava Initiative. Where CBSD is found, quality control becomes more difficult and requires a greater degree of expertise to identify diseased plants. Further strengthening of virus and pest surveillance and expanded training are required to ensure that the positive results of the Regional Cassava Initiative are maintained.

Addressing the threats cassava smallholders face in East and Central Africa will not only increase the resilience of the most vulnerable farmers, it will support the transformation of cassava into a new driver of development for the continent.

DRC TAKING THE LEAD

After the positive results of the Regional Cassava Initiative, the Democratic Republic of Congo approved to fund a joint FAO-IITA project to extend project initiatives in six provinces. The government is committed to invest EUR 3 million to set up virology labs, develop seed certification standards and train both staff and farmers.

PROJECT OVERVIEW

Funding partner:

European Union

Project date:

November 2009 till October 2013

Total project budget:

EUR 4 761 000

Contact:

Deborah Duveskog – Deborah.Duveskog@fao.org

Coordinating partner:

FAO Subregional Office for Eastern and Central Africa

Main implementing partners: Ministère de l'Agriculture et de l'Elevage, Floresta and ISABU (Burundi) | Ministère du Développement Rural; Université Bangui and Relais Parent-Enfant (CAR) | Inspection Provinciale Sud Kivu, INERA-IITA and the Ministry of Agriculture (DRC) | Centre d'Introduction, d'Adaption et de Multiplication du Matériel Végétal; L'Institut de Recherches Agronomiques et Forestières and the Ministry of Agriculture (Gabon) | Rwanda Agriculture Board and RAB Research Institute (Rwanda) | Ministry of Agriculture, Food Security and Cooperatives; Agricultura Seed Agency; Agricultural Research Institute Kibaha and LGA Mkuranga (Tanzania) | Ministry of Agriculture, Animal Industry and Fisheries; NARO/ NaCCRI, Association for Strengthening Agricultural Research in Eastern and Central Africa (Uganda)



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