Alliance to Control the Escalating Threat of Banana Bunchy Top Disease in Africa

Banana bunchy top disease (BBTD) caused by the *Banana bunchy top virus* (BBTV) is a major threat to the food and income security of millions of people. The disease renders banana plants unproductive, eventually killing them. The disease spreads into new fields along with infected planting material and also through an insect, banana aphid (*Pentalonia nigronervosa*), which is widespread in all the banana and plantain-producing areas.

The spread of bunchy top into new areas can initially remain undetected, complicating timely eradication work and prevention of new outbreaks. Once the disease is present in a region, it is extremely difficult to eradicate. No durable sources of resistance have yet been identified. The disease has been recorded in 35 countries of Africa, Asia, Australia, and the South Pacific Islands, including Hawaii (USA), but not in the Americas.

Over 50% of the global banana (and plantain) is produced in Africa, where it is one of the key staple crops supporting the livelihoods of an estimated 100 million people most of whom live in sub-Saharan Africa (SSA). Bunchy top was first reported from Africa in 1901; however, extensive spread into new production areas was observed during the last two decades.

The disease has very recently invaded Bénin and Nigeria in West Africa in addition to limited spread within the Kivu provinces (Democratic Republic of Congo, DRC), neighbor to the largest banana-producing country in Africa—Uganda. Currently, BBTD occurrence has been confirmed in 14 countries in Africa, namely Angola, Bénin, Burundi, Cameroon, Central African Republic, Congo Republic, DRC, Egypt, Equatorial Guinea, Gabon, Malawi, Nigeria, Rwanda, and Zambia.

Laboratory techniques for virus detection and establishment of virus-free planting material are not widely available in SSA. Ongoing efforts by a range of national and international partners are fragmented and inadequate in halting the expansion of the BBTD pandemic and in rehabilitating banana production in BBTD-endemic areas.

Global experts under the umbrella of the CGIAR Research Program on Roots, Tubers and Banana (RTB) came together in February 2013 in Arusha, Tanzania, in an alliance to develop a cohesive medium and long-term strategy for an impact-oriented initiative to control BBTD in SSA. This initiative is led by the IITA, Bioversity International, together with FAO, and NARS in Bénin, Burundi, Cameroon, Congo Brazzaville, DRC, Ghana, Malawi and Nigeria. Several other research partners from Australia, Asia, Europe, India, Kenya, Pakistan, New Zealand, and USA are also contributing to the alliance strengths to fight BBTD in Africa.

This partnership platform is being built on an initial framework proposed in Arusha 2009 - known as Arusha Banana disease framework - by IITA, Bioversity, and FAO in a workshop attended by representatives from several SSA countries in Arusha, Tanzania, funded by USAID and EU.

The Alliance aims to conduct and coordinate R4D efforts to:

- Understand disease epidemiology and ecology for a better understanding of factors that drive the field spread and develop appropriate management packages to delay the spread and manage the disease in endemic areas.

- Develop and distribute sensitive diagnostic tools, and develop capacity for disease recognition and knowledge of control options.
- Augment host resistance to the virus and explore biocontrol options to manage aphid vector.
- Establish location-specific clean banana production and distribution systems, and train farmers and entrepreneurs in producing clean planting material.
- Train African scientists to continue surveillance on the extent of disease incidence to update the spatial distribution map of BBTV spread in SSA.

The Alliance will also exert efforts to mobilize the resources necessary for a sustained and long-term initiative to achieve this mission.