



Tropentag, September 20-22, 2017, Bonn

“Future Agriculture:
Socio-ecological transitions and bio-cultural shifts”

New Incursions of Pests and Diseases Present Serious Threats to Plant Health and Sustainable Agricultural Production in Sub- Saharan Africa

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Abstract

Pests and pathogens pose a significant threat to food production accounting globally for almost 20% of losses to agricultural production. While plant health threats from pests and diseases are as old as agriculture itself, a new dynamics has become evident by the enormous numbers of novel pathogenic organisms that are introduced often far from their original distribution into new areas, to spread and establish causing serious disturbances and imbalances in the management of crops. This dynamics is driven by a the sharp increase of global traffic including the exchange of materials across continents, a division of agricultural production and the intensification of agriculture per se. The changing climate presents additional stresses to crop cultivation from warming and unpredictable weather patterns with strong effects on the development of pest and pathogen populations, their dispersal and impact on both crops and environment. Plant health is compromised by all these negative effects which taken individually are difficult to quantify. However, as is evident from the recent outbreaks in particular in Africa; the devastating epidemics of bacterial wilt disease in banana, the spread of maize lethal yellowing virus disease, the range expansion and human assisted spread of cassava brown streak virus disease and the continent wide invasion of the fall armyworm *Spodoptera frugiperda*; most the biggest threats to agricultural production is from the incursion of NEW pests and diseases rather than from changes in pest & pathogen populations. Prediction and assessment of risks from emerging and re-emerging pests and pathogens is keeping research very busy while much less is done to support (resource-poor) farmers in taking the necessary preparatory steps to reduce impact.

Keywords: Biological invasions, climate change, pest risks