

The Role of Non-Native Plant Species in Enhancing Food Security in Sub-Saharan Africa

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Abstract : Intensification of agricultural food production in sub-Saharan Africa is of paramount importance as a means of increasing the food security of communities that are already experiencing a range of environmental and socio-economic stresses. However, achieving this aim faces several challenges including ongoing climate change, increased resistance of diseases and pests, extreme environmental degradation partly due to biological invasions, land tenure and management practices, socio-economic developments of rural populations, and national population growth. In particular, non-native plant species tend to display greater adaptation capacity to environmental stress than native species that form important food resource base for human beings, thus suggesting a potential for usage to shift accordingly. Based on review of the historical benefits of non-native plant species in food production in sub-Saharan Africa, we propose that use of non-invasive, non-native plant species and/or the genetic modification of native species might be viable options for future agricultural sustainability in this region. Coupled with strategic foresight planning (e.g. use of biological control agents that suppress plant species' invasions), the consumptive use of already-introduced non-native species might help in containment and control of possible negative environmental impacts of non-native species on native species, ecosystems and biodiversity, and soil fertility and hydrology. Use of non-native species in food production should be accompanied by low cost agroecology practices (e.g. conservation agriculture and agrobiodiversity) that may promote the gradual recovery of natural capital, ecosystem services, and promote conservation of the natural environment as well as enhance food security.

Keywords : food security, invasive species, agroecology, agrobiodiversity, socio-economic stresses

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