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A Participatory Appraisal of Imperata Management Strategies for Sustainable Land Use in the Sub-Humid Savannah of Nigeria

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Abstract

Increasing spread of *Imperata* in the sub-humid Savannah of Nigeria has had many negative results threatening the sustainability of the natural resource base and livelihood of farmers. A community-based participatory approach (PA) was conducted to identify current and alternative technologies for controlling *Imperata*, which support sustainable land use. The PA involved *Imperata* infestation mapping, livelihood analysis, wealth ranking, crops and constraint prioritisation as well as farmers' evaluation of control methods.

Results of the PA showed that farmers commonly used hand weeding and herbicides as well as fallow and burning. High crop yield, income, type of crop(s) grown, capital, chemical, knapsack and labour availability, knowledge and sustainability criteria were the major determinants for the choice of control technique among different wealth (or resource) categories of farmers. Ensuring household food security and prevailing land ownership rights governed the choice of crops grown as well as investment in land management technologies for sustainable *Imperata* control. Farmers' evaluation of weed management techniques ranked herbicide as the most effective method of controlling *Imperata* particularly in maize, cassava and cowpea rotation cropping systems. The combination of *Mucuna* and hand weeding was second and third was the combination of *Mucuna* and herbicides. Other methods favoured by farmers included the use of improved cassava that shaded the *Imperata*, fallow and burning as an emergency control method. These methods reduce labour requirements, may increase costs but can contribute to higher income, food availability, and land sustainability. These control methods were the most preferred by resource-poor farmers, but are least likely to be adopted. It will be important to increase local awareness about problems associated with bush burning, ensure ready availability of materials, increase farmer knowledge of alternative control options, and increase access to credit. These will enhance improved management of *Imperata*, providing options for all categories of farmer.

Keywords: *Imperata*, participatory approaches, alternative technologies, sustainability criteria, herbicides, *Mucuna*, resource-poor farmers

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