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**Farmers' perceptions of *Imperata cylindrica* and *Chromolaena
odorata* fallows in the North West, South West and Littoral
provinces of Cameroon**

**M. Sc. Thesis
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6 Summary

Most agricultural systems in the humid tropics of Africa are based upon the shifting cultivation slash and burn proto-system. In this system, productivity and sustainability depend primarily upon the relative rate of soil 'quality' decline during the cropping phase, soil quality regeneration during the fallow phase and time allocation to the latter. A fallow is the successional vegetation which follows a cropping phase and may be dominated by trees, shrubs or grasses, depending upon the climax vegetation type, management history and successional stage. Fallows have been shortened due to increased population density and increased demand for arable land. It is often assumed that shorter fallow periods are less effective in restoring soil fertility and suppression of aggressive weed species such as *Imperata cylindrica* and *Chromolaena odorata*. Many projects concerned with rehabilitating land infested with imperata and chromolaena have overlooked the views of the local people (especially the small-scale farmers) and, as a consequence, adoption of feasible rehabilitation technologies has been low.

This study aimed at: (1) understanding how local people view and value imperata and chromolaena fallows, (2) finding out preferred ways of controlling imperata and chromolaena in cropped fields, and (3) comparing soil properties, plant species diversity and earthworm numbers in imperata versus chromolaena dominated fallows and the natural savannahs (as control, where available); to assess and compare the fertility status of these fallows with farmers' responses.

The work was done in the NW, SW and Littoral provinces of Cameroon, specifically in Wum, Muea and Mouanguel respectively. A questionnaire was used and some biophysical studies were also conducted in the three provinces; vegetation, soil and earthworm sampling was done. Excel software was used for data entry, processing and analysis.

The results indicate that small-scale farmers do not attach specific values to either imperata or imperata fallows. However, the farmers prefer chromolaena fallows to imperata fallows. Farmers reported that the continuous cultivation on imperata dominated farmlands for four years was sufficient to suppress imperata below economic threshold. Farmers also pointed out that any measure employed to effectively control chromolaena should involve uprooting of chromolaena stumps. Farmers could not effectively control these weeds because of the high labour input and costs of control (direct payment for labour and the costs of chemicals). This was also the case for other weeds. As such, farmers considered imperata and

chromolaena like any other weed that required proper attention. Fallow lengths were important for soil fertility regeneration and suppression of weeds (e.g. imperata) but the main reason for fallowing was for fertility and not for weed suppression. High weed density in the farms and declining soil fertility was due to unsustainable farming practices. Thus, it is important for control measures geared towards specific weeds to take into account the farming practices. Measures should consider the general improvement of the farming practices.

Results from the biophysical analyses indicated that chromolaena fallows are more efficient in soil fertility restoration than imperata fallows. This explained why farmers preferred chromolaena to imperata.