Assessing input and output from swidden agriculture in a resource-poor setting: Comparing recalled information with farmers' logbook

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Background

Swidden agriculture continues to be a major reason for biodiversity losses, especially in low income countries as many people around the forest rely on these farming practices for their subsistence.

Providing an accurate estimate of the local costs of shifting away from these livelihoods is difficult but it is vital for assessing the level of compensation which needs to be provided for local people. So, we





developed a detailed monitoring survey to see whether recall surveys can collect accurate data

Study site : Farmers around Zahamena NP

We carried out intensive data collection with smallholder farmers living around Zahamena National Park located in the eastern part of Madagascar.

Methods : Recall survey and Farmers' logbook

We interviewed 40 farmers with an in-depth recall survey using a questionnaire and a sub-set of 18 households kept logbooks (a mixture of daily and weekly logs).

In both methods, we collected detailed information about the livelihoods of households living at the forest edge and discuss inputs and outputs in their farming system including field measurement with GPS.

We focused our data collection on one agriculture season (2014-2015). For this analysis, we compared estimates from the two surveys of: a) labour intensity of swidden agriculture and b) rice yield kg/ha.

Result : Farmers' logbook vs recall survey

a) Input to Swidden agriculture : Man-days spent per ha of







field

A Mann Whitney U test found no significant difference between the two methods in estimates of man-days spent per ha of swidden field.

W = 510, p-value = 0.22, p-value> 0.05 (no significant difference)



Figure 1: Estimates of Man-days per ha from farmers' logbook and recall survey



b) Output to Swidden agriculture : Rice yield per ha field

A Student's t test found no significant difference between the two methods in the quantity of rice produced per ha (which is the main crop in swidden agriculture in Madagascar).

t = 0.59, df = 43.29, p-value = 0.56 (no significant difference)



Conclusion

Detailed monitoring throughout the agricultural calendar is costly, especially as conservationists may be interested in agricultural livelihoods in remote and hard to reach areas. Our results suggest that one-off recall surveys using well-designed in-depth questionnaires can be a suitable method for collecting even quite complex agricultural input and output data.

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