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Discrepancies in understanding historical land use changes in Uganda

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• Introduction

One of the many strengths of participatory learning is its emphasis of the importance of rural people's knowledge and perceptions. When quantitative, objective data contradict qualitative, subjective knowledge, we are presented with an opportunity: first, to use the discrepancy to learn more about project participants, and second, to learn more about the participatory process itself.

This discussion presents a case where a development narrative commonly recounted in southwestern Uganda was found to counter objective, quantitative information. The question is not which is more valid, the objective data or subjective viewpoints, but how this conflict can be used to improve our understanding of the people who perpetuate the narrative and the participatory process through which it was elicited.

I worked for CARE-Uganda from 1993-1996 and assisted in developing a participatory community development project. The process typically proceeded from community sensitisation to problem identification, problem analysis, action planning, activities and periodic evaluation. PRA revealed a widespread narrative among project participants that overpopulation was forcing households onto smaller and smaller pieces of land. This compelled people to farm their land continuously without fallowing, resulting in soil fertility declines to the point that some crops, such as millet and peas, were no longer grown.

This basic account of overpopulation leading to soil fertility decline through continuous cultivation was reported in some form in every community in which we worked. This narrative has been accepted as 'conventional wisdom' by researchers and NGOs working in the region, possibly because of its compatibility with global level assumptions regarding the relationship between population growth and environmental degradation.

In late 1995, we were funded by the Rockefeller Foundation to conduct a quantitative, longitudinal study on environmental changes in the area. We had been fortunate to gain access to a detailed land use survey conducted in 1945 by a colonial agricultural officer. This database included information from 14 transects conducted around Kabale District, recording land use practices along the 32 miles the study covered. The report included sufficient detail of the locations of the 14 transects that we were able to repeat the survey in exactly the same areas precisely 51 years later.

We felt that this study provided a unique opportunity to calibrate the participatory methods we used to understand local perceptions of environmental change with quantitative, longitudinal data. This would allow us a better understanding of how well subjective community knowledge tallied with objective sources of information.

We conducted six RRAs¹ in the areas crossed by the 1945 transects to gather the perceptions of local people as to the environmental changes which had occurred in their region over the last 51 years. We arranged for small groups of elderly men and women (the *wazee*) who had lived in the area all of their lives to meet with us.

We utilised a number of rapid appraisal techniques to probe for changes in environmental and agricultural characteristics of the region, including semi-structured interviews, historical timelines and transect diagrams. This last technique involved diagramming a hillside as it would have looked in the early 1940s, using local plant material to indicate where crops had been planted during a typical second season of that time period. After the diagram was complete, we used it as the basis from which to discuss changes in land use which had occurred over the past half century. To gather the *wazee's* perceptions of the transformations of land use in the district, we asked questions such as, “*Do you still grow peas today? How has the amount of land covered by millet changed from the 1940s to today? Do you plant maize with other crops more frequently today or in the past?*”

• Results

The results from these RRAs were essentially identical to those from the more extensive PRA carried out in neighbouring areas. The information relating to changing land use is summarised in Table 1. The recurrent narrative about the lack of fallow land due to overpopulation was recounted in all communities.

One month after the RRAs were conducted, we repeated the 1945 land use survey during the same month as it was originally conducted and utilizing the same transects (for a detailed methodology see Lindblade *et al.* 1996). Information on current land use was collected

and we estimated the length which fields had been left to rest, using a system compatible with that of the original investigator.

¹ I am distinguishing the PRA as used by CARE to facilitate community development action planning from the extractive RRA, which we conducted for the purposes of comparing information from participatory methods with transect data as part of the study on land use changes.

Table 1. Summary of RRA: perceived changes in land use over the past 51 years, Kabale District, Uganda 1996¹

Land use	Community					
	1	2	3	4	5	6
Bananas		+	+	+	+	+
Beans		+	+	+	+	+
Fallow land	-	-	-	-	-	-
Grazing land	-	-	+/-	-	-	-
Irish potatoes			+	+		
Maize		+	-	+	-	+
Millet		-		-	-	-
Peas		-	+	-	-	-
Sorghum		+/-	+	+	+/-	+
Sweet potatoes		+	+	+	+	+
Tomatoes/cabbages			+		+	+
Trees	+	+	+	+	+	-

¹ A '+' signifies a perceived increase over the last 50 years in the total land area under the particular land use. A '-' signifies a decrease in the same period. A '+/-' indicates a difference of opinion within the group. Blank spaces in Community 1 are due to changes in methodology which were not implemented until after the first community had been completed. Lack of response for certain crops in other communities is likely because they did not grow the crop in 1945.

A comparison of the summarised results from the community RRAs and the transect survey are presented in Table 2. There was a fair amount of agreement on most of the individual crops. But we were very surprised to find that the quantitative data conflicted with the regional narrative describing the effect of overpopulation on continuous cultivation of the soil. Instead of fallow land decreasing as a proportion of the land surface area, as reported during the RRA and by project participants, it had actually increased from 19.4 percent in 1945 to 31.6 percent in 1996. The average resting period had also increased from an average of nine months in 1945 to over 14 months in 1996.

Table 2. Comparison of RRA findings and objective data relating to changing land use, Kabale District, Uganda 1996¹

Land use	Community consensus	Transect survey
Bananas	+	+
Beans	+	+
Area of fallow land	None	+
Fallow land resting period	-	+
Grazing land	None	-
Irish potatoes	+	+
Maize	+/-	+
Millet	None	None
Peas	None	+/-
Sorghum	+	-
Sweet potatoes	+	+
Tomatoes/cabbages	+	+
Trees	+	+

¹ I have used NONE to indicate where communities insisted that not only had there been a decrease in the amount of land in a particular land use category, but that it no longer existed at all.

• Discussion

Our immediate concern was to try and understand how this discrepancy could have arisen. We discussed these surprising results with community members and local experts to try and understand why fallow was perceived to have disappeared when our study found it to be more common now than in the past. I would like to discuss a few hypotheses we have developed which may help to explain this discrepancy.

Historical events and propaganda have shaped perceptions

The British colonial agricultural officers who started working in the area in the late 1930s were concerned with what they perceived to be an overpopulation problem in the area. They feared it would cause severe environmental degradation. To encourage people to follow the agricultural measures they recommended, the colonialists mounted an intense campaign of education and propaganda. This included: agricultural courses (which emphasised the problems of soil erosion caused by over-cultivation), and a touring group which showed films and gave displays about agricultural improvement and methods of soil conservation.

All of these efforts emphasised the role which local people were playing in degrading their environment. Such messages are still being spread today through government departments, schools and NGOs. This pervasive view is likely to greatly affect perceptions of past conditions. The power of suggestion is certainly a strong one, and may partially explain why the participatory methods elicited concerns about population growth and over-cultivation.

Have we understood farmers when they say there is no more fallow land?

It is quite possible that an outsider's concept of fallow is very different from that of local people. For example, farmers might call resting land 'fallow' only if it has been left to rest for longer than one season. It is also possible that land which has been abandoned because it is no longer productive will not be

called 'fallow' at all. We investigated the different local words for fallow and how they are applied to various kinds of resting land to ensure that we were not missing some subtle difference in meaning.

Our results suggest that fallow was simply considered to be agricultural land without any current crops. However, I believe that there may be a difference between what I will call 'surplus' and 'necessary' fallowing. The first type was more common years ago when land was plentiful and was left to rest because it was in excess. The latter type of fallowing has become necessary as household land holdings decrease and frequent cultivation threatens soil productivity.

It is possible that when people are asked about fallow they are referring to the surplus fallowing, which is not common except among wealthy farmers. Therefore, while farmers are still fallowing, most of them are doing so out of necessity. If this is the case, then the problem lies in our misunderstanding of what farmers mean when they say there is no more fallow.

In a similar vein, many farmers stated that peas were no longer planted because the soil has become infertile. This is clearly not the case because peas covered more than 19 percent of cultivated land in 1996. However, peas were never intercropped in 1945, whereas now they are almost always found in fields in which other crops are growing. While peas may no longer be planted alone, they are still an important crop and part of a rotation with beans, maize and sorghum. When it is reported that peas are no longer grown, it may be that farmers are referring to the historical situation when peas were planted on their own rather than intercropped. This is an important distinction which was not recognized during the participatory research process.

Are people telling us what they think we want to hear?

Despite the participatory focus of community development efforts, a power differential exists between development workers and community members and this must impact on the process. First, communities are well aware that NGOs and government agencies intervene

only if the situation in an area is poor and getting worse. In fact, by structuring our community development planning exercises towards community 'problems', we are already setting the agenda for our interactions. Communities in this climate are unlikely to express optimism or contentment with the *status quo*. In fact, they are much more likely to develop a litany of problems for fear that they will risk losing the attention of development organisations.

Second, communities are well aware of the objectives of most organisations. They know that CARE is very active in the area of environmental conservation, agricultural interventions and family planning. In this case, they are likely to emphasize the importance of these issues as fundamental causes of community problems over other causes which might actually be more pertinent.

• Conclusion

It is rare to find an opportunity to compare community knowledge and perceptions elaborated in participatory appraisal processes with longitudinal, objective data. In the few cases where this has been possible, we have learned a great deal both about the local system and the difficulties inherent in participatory methodologies.

This example demonstrates that a discriminating attitude must be displayed towards information gathered from communities using participatory methods. In many cases a critical attitude must also be displayed towards objective data. However, as recognition of the magnitude and complexity of local knowledge has grown, there has been a tendency to accept it at face value and to explore its depths without comparing its reality to another.

Because of the possibility that the perceptions of local people do not match the understanding of development workers, information should be triangulated with other data sources wherever possible. Triangulation of data sources is a key, but often forgotten, element of participatory methods. The purpose of triangulation is not to determine whether local knowledge and perceptions are more or less accurate than other sources of data. Instead the

aim is to reconcile these different realities. And in the process, gain insight into the participatory process, highlight misunderstandings and identify external forces, which may influence the discourse or interactions between participants. Without triangulation of data from various sources, it is very possible that community development programs will be built on invalid fundamental assumptions and shallow understanding, potentially leading to a lack of interest or commitment on the part of local people.

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