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Participatory budgets: a farm management type tool to assist farmers in their decision-making

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• The challenge

This paper describes a method developed and used in the field through on-going work at the University of Reading. The aim of the research is to develop 'farm management type' methods which could be used by small-holder farmers, by combining conventional farm management tools with participatory methods. The method described has been used over a period of 18 months with over 250 farmers in rural Zimbabwe.

Farm management tools try to assist farmers in their decision making, particularly with regard to the allocation of resources. However, conventional tools, such as budgeting, have proved to be of little use to small-holder farmers in developing countries. The main reasons for this are that current tools:

- are too complex for use by illiterate or poorly-educated farmers;
- do not take account of non-cash resources e.g. labour or non-profit based objectives;
- often do not take account of time, e.g. the variation of resources within a season; and,
- require the use of materials which are often unavailable.

The challenge therefore was to develop tools which are simple and usable, include non-cash resources, take account of time and use local materials.

Using a traditional board game

The 'mancala' board game is played throughout most of Africa, with rules differing slightly between areas (see Figures 1 and 2). It is essentially a mathematical game and is played by literate and illiterate farmers with incredible speed and skill, demonstrating their mathematical ability. Thus, it has been used for ranking and scoring (see Barker 1979).

Farmers' abilities to rank, score, diagram and analyse have been amply demonstrated by many practitioners of PRA. Thus, a combination of the techniques of ranking and scoring and the mathematical concepts of the 'mancala' game, seemed to have potential for use in 'participatory farm management'. Below, we describe the game and give an example from Zimbabwe of how participatory budgets have been used to assist farmer decision-making.

• Participatory budgets

Requirements: Rows of holes in a board or on the ground or a grid. Beans, seeds or anything which can act as counters.

Outline: Different resources and/or activities are indicated by different types of beans, seeds or symbols (Figure 1). Quantities of resources are indicated by the number of beans, usually with a specific value attached to each bean. Time is represented by each hole or column being a month or other period of time. Different resources, such as labour, cash, food stocks, and how their quantities vary over time can therefore be represented on the board (similar to a seasonal calendar).
A budget for a particular enterprise can be made showing the different activities which will be undertaken and the labour, cash and other resources used and received from the

Source: PLA Notes (1998), Issue 33, pp.59–63, IIED London

enterprise each month. The income and expenditure which the farmer is likely to receive during the time of the enterprise can be estimated, and the net cash flow for each time period can be calculated. This enables the farmer to know when he/she will require more money. An estimate of the overall profit can also be worked out. Budgets can be made either for a specific enterprise incorporating all resources, or for a specific resource used on the farm.

What if.....?

Once a budget has been made, the effect of different events can be assessed, such as the effect of goats invading a vegetable garden, or an increase in the price of an input, or poor rains. The different scenarios can be suggested by the farmers, who can then work out the effects on cash, labour, and other resources. This helps in assessing the risk involved in initiating an enterprise; e.g. 'What will I lose if this happens?' This is particularly relevant for working out the effect on loan repayments for a range of possible outcomes.

- **Comparing ground-nuts and sunflower**

This exercise was carried out at the request of farmers in Buhera District, Zimbabwe, who wanted to compare the two main cash crops grown in their area, sunflower and groundnuts. This example illustrates one of the potential uses of participatory budgets and how they can be combined with existing PRA techniques to assist farmers in their decision-making.

Procedure

Initial discussion focused on why farmers grow these two different crops and what factors are taken into consideration when deciding which crop to grow. A scoring exercise was carried out to examine the relative importance of these decision-making factors (see Table 1). In this way, non-resource factors, such as ease of marketing and seed availability that could not be considered in the budget, were taken into account. This procedure is not always necessary before the construction of a participatory budget, but it can help in the decision-making process.

After the farmers described the field in which they were considering growing the crop, the group divided into two smaller groups of 4 farmers each. Group A drew up a budget for Sunflower and group B a budget for Groundnuts for the field described. The two budgets were then combined on a single grid (see Table 2).

Figure 1. Diagram showing the 'mancala' board game

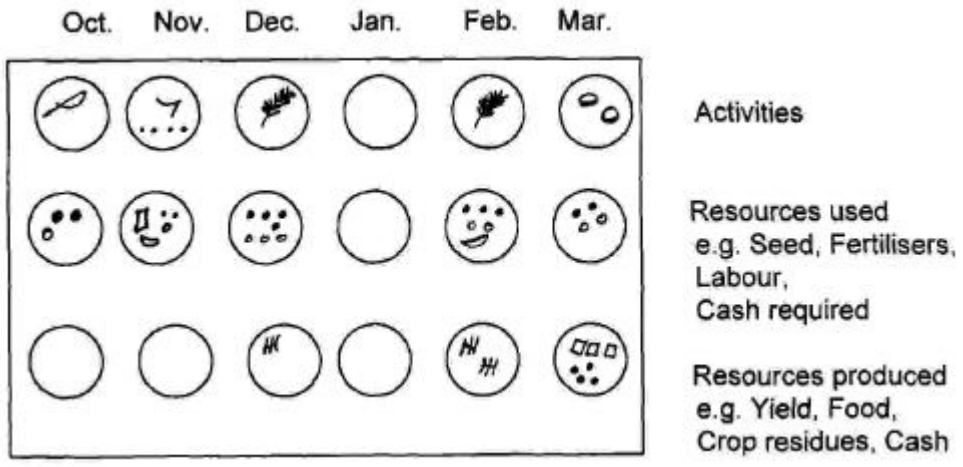

Table 1. Scoring of decision-making factors indicating the level of the problem or criteria for each particular crop.

Source: PLA Notes (1998), Issue 33, pp.59–63, IIED London

Criteria	Groundnut	Sunflower	Importance of criteria and comments
Yield	9	2	1 (i.e. most important)
Seed availability	3	8	2
N-fixation (manure)	8	1	2 (important because if rotate with maize, get good maize crop)
Price/income	6	1	3
Process into oil	2	7	4
Process into butter	10	1	5 (Sunflower can't be made into butter)
Use for feeds	1	1	6
Drought resistance	2	10	7 (considered unimportant because is outside farmers' control)

The higher the score, the smaller the problem, the lower the score the worse the problem. Farmers also ranked the importance of each of the criteria in their decision making; e.g. yield: groundnut (9) yields much better than sunflower (2)

Table 2. Budget for comparison of Groundnut and Sunflower crops. Kutsungirira Group, Vidco 3, Ward 12, Buhera District, Zimbabwe.

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
SF	Winter plough	Seed preparation (1 bucket)	Planting	Thinning early weeding	Ridging up of crop			Harvesting cutting heads	Threshing winnowing	Buy empty bags	Transport to market	Clear lands
GN	Planting	Weeding	Weeding	Ridging up of crop		Check ripening	Uprooting	Drying, picking, winnowing	Bagging and transport	Ploughing – for next season		Preparation of seed, 3 baskets
SF	Labour 9inds) 2 (days) 3	23	33	52	22	0	0	5+1 (hired) 5	84	11	11	86
GN	33	56	54	23	0	21	55	56	0	23	0	81
SF	Cash spent							$30		(cost of bags excluded as farmers keep them)	Transport $140	
GN		$60					$30	$30	$240			
SF	Income (outputs)									(poultry feed)	$1400	
GN									3 scotch carts hay for fodder	$4000 (5 bags kept for consumption)		
SF	Cash profit										1400-170=$ 1230	
GN										4000-360=$ 3640		

SF = Sunflower; GN = Groundnuts; $ = Zimbabwe dollars.

Source: PLA Notes (1998), Issue 33, pp.59–63, IIED London

• Findings

Through construction of the participatory budget, the farmers were able to express which crops they would opt for in the next growing season and why. It was found that farmers with little family labour and no money to hire labour prefer sunflower because groundnuts require more labour than sunflower. Better off farmers, or those who have more family labour, often grow groundnuts as it is a more profitable crop and there are more uses for it. However, those who grow groundnuts will often also grow sunflower as an insurance policy in case there is a drought; groundnuts are much more susceptible to drought than sunflower.

The process of constructing the budget assisted communication between the facilitator and farmers, and between the farmers themselves. The budget illustrated clearly the resources required and profitability of the different crops. Although farmers possessed all the knowledge presented on the budget, expressing it in this form clarified and summarised the differences for them and, together with the scoring exercise, made a powerful tool to help farmers make a decision between the two crops. All the farmers were enthusiastic about the exercise and keen to repeat it for different enterprises.

Uses of participatory budgets

Participatory budgets have a variety of potential uses in both research and extension. As is demonstrated in this paper, they can be used by extensionists to assist farmers in their decision-making. They can also be used at several stages of the research process; in initial needs assessment, in screening and evaluating technologies with reference to their resource implications for farmers with different levels of resources, and in the monitoring and evaluation of technologies during on-farm trials. Investigation with farmers into the resource implications of new technologies, including potential profit and resources required, should help to promote the adoption of more appropriate technologies.

Figure 2. Enjoying participatory farm management [Photo - Peter Dorward]

Source: PLA Notes (1998), Issue 33, pp.59–63, IIED London

Below, we list some of the specific uses of 'participatory budgets':

- Exploring the suitability of a new enterprise or technology by analysing its demand for resources at different times of the year and comparing this with other demands on those resources.
- Comparing a new enterprise or technology with an existing practice.
- Examining the likely effects of making changes to an existing enterprise; e.g. replacing artificial fertiliser with manure.
- Investigating the effects of timing of activities; e.g. to determine the best timing for broiler production activities to exploit the Christmas market.
- Exploring risks and the effects of factors outside the farmers control, by the examination of 'What if..?' scenarios.
- Determining the size of a loan required and the realistic timing of repayment.

• Benefits and impact

Our experience of using these tools in the field has been positive. Farmers have picked up the methods quickly, adapted them to fit their situations and enjoyed using them to investigate a number of different enterprises and scenarios. After working with the extension workers initially, farmers began to use the methods by themselves, investigating different uses and possibilities.

The flexibility of the basic concepts was highlighted by farmers and extension workers in the variety of ways the budgets were used. In-depth discussion during the process resulted in a sharing of ideas and experiences.

Extension workers gained insights into what resources farmers feel are important when considering alternative and existing enterprises and technologies. Participatory budgets also helped extension workers to identify what information farmers required from them, and made them think about the feasibility and implications of the technologies that they were encouraging farmers to adopt.

Central to the successful use of participatory budgets is acknowledging that the *farmer* is the decision-maker. The role of the extension worker or outsider is to facilitate, for example, to help the farmer explore the implications of trying something new or of making a change to their farming system. Participatory budgets should not be used to attempt to convince the farmer to make a particular change. They do not give a definitive answer, but rather help to explore a range of possibilities.

Participatory budgets, should be 'empowering' rather than 'extractive', increasing the farmers' capacity to plan and analyse. However, a large amount of information is generated during the use of the methods. This can be helpful to outsiders in increasing their understanding of the farmers' situation.

From this initial work we feel that 'participatory budgets' can be a useful tool, primarily by empowering farmers through assisting them in their decision-making. However, as with all participatory methods, it is essential that they are used with the right attitude, with the farmer at the centre of using and developing the method.

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A limited number of draft 'Participatory Farm Management' manuals are available from: Mr.P.T. Dorward (address as above).

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Source: PLA Notes (1998), Issue 33, pp.59–63, IIED London