Highlights
CIAT in Africa

Using impact diagrams to evaluate change in agricultural research

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The Highlights series summarises research results and policy implications from the work of CIAT and its partners in Africa

Impact diagramming is an open-ended, participatory method for evaluating change, associated with an intervention. The products are also referred to as impact flow diagrams. As a monitoring and evaluation tool, impact diagrams have the following advantages:

- Depict direct and indirect consequences of new technology; positive and negative impacts; expected effects; direct and indirect impacts; and causal linkages.
- Show farmers' and/or stakeholders' views on change, thereby addressing the problem of the "attribution gap".
- Can be used for monitoring changes periodically over time.
- Can help in identifying unexpected impacts and impact indicators.
- Because the method is open ended, it also allows for unexpected change to be depicted.
- Can be used by groups, households or individuals.
- Easy and fun to use.

Disadvantages of the method include the length of time it takes to draw a diagram and the inability or unwillingness of some farmers (especially women), to draw. Additionally, the method may be less suitable for measuring economic or environmental impacts (which require quantitative information).

Using impact diagrams to assess the impact of new bean varieties

Case 1: The impact of KK22

This diagram was originally drawn by a group of women farmers in western Kenya. It shows that the main positive impacts of this root rot-resistant variety were higher yields (2 kg of seed yields 36-40 kg at harvest) which improved food security and increased the marketed surplus. This outcome, though beneficial to all household members, had different implications for men and women, reflecting the gender division of labour and financial responsibilities. Figure 1 shows that women see two main benefits: they had more food available in the hungry season (before harvest time) and also money to spend on household items and on hiring labour for planting, weeding and harvesting. In addition, lower firewood consumption saved their time. However, this late maturing variety increased the length of the hungry season. Growing this variety also increased women's labour during planting because they had to sow it in separate rows in order to ensure high yields, whilst the traditional method involves sowing maize and bean seed in the same hole.

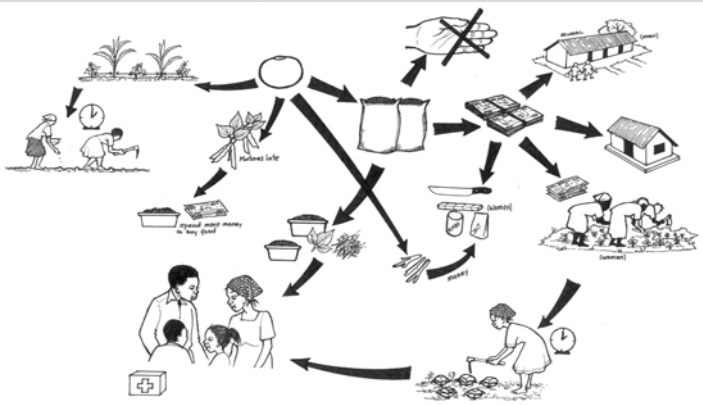

Figure1: Impact of KK 22 bean variety as viewed by the women of Mkumu farmers' group, east Tiriki, Kenya

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Case 2: The impact of K 132 bean variety in Uganda

There was close correspondence between farmers' impact diagrams and the impacts documented by a formal survey. Additionally, the diagram included some non-tangible positive changes (happier families) which were not measured by the survey, as well as negative social behaviour resulting from greater affluence, namely increased drinking, domestic violence, extra-marital affairs and AIDS cases. A few impact areas, such as increased conflict between husbands and wives over earnings from beans and community level impact, were not well captured by either method. In general, the impact diagram provided descriptive data at both household and individual level. Survey data nicely complemented this information with quantitative data on percentage of households affected, gender differences in production and consumption, and seasonal differences in consumption and income.

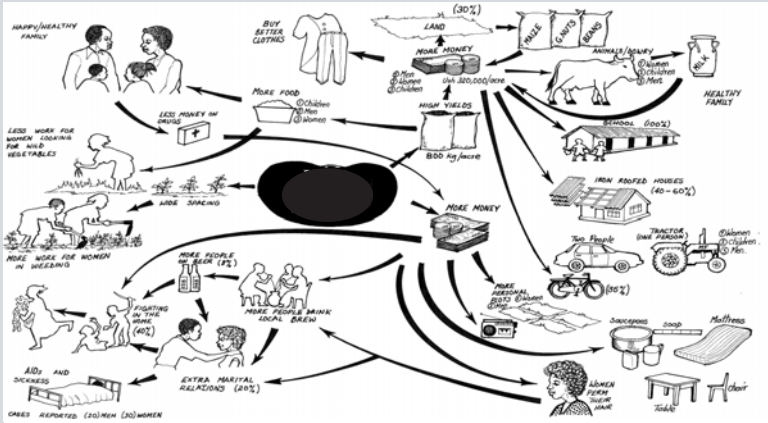

Figure 2: Impact of KK 132 bean variety according to farmers of Nabongo Parish, Uganda

Drawing an impact diagram

Before drawing a diagram, it is important to collect background information to understand the context within which change has occurred. This includes collecting information on the technology or intervention concerned, when it was introduced to the area, and how the intervention is perceived in relation to other changes that occurred at the same time. It is also important to collect quantitative information on the situation before and after the intervention. For example, for a new crop variety, information on yields, how long the harvest lasts and how many times a week the crop is consumed, should be collected.

This method can be applied at individual or focus group levels and a skilled facilitator must be identified.

The steps to be followed when applying impact diagrams are:

1. List or discuss all direct and indirect outcomes of the intervention – both the positive and negative outcomes.
2. Explain the idea of an impact diagram and show a simple example.
3. Start the process by symbolising the intervention/topic (you may use a blackboard, paper, draw on the floor or have prepared pictures or symbols). The intervention/topic should be specific. It is helpful to start with a drawing on a blackboard and redraw the final diagram on paper.
4. Ask what has happened as a consequence of each result. Each consequence is symbolised or written down. Use arrows to show linkages and cause and effect. For some outcomes, it may be important to indicate whether the change is positive or negative if this is not immediately clear to non-participants.
5. Quantitative information can be obtained by asking about amounts or number of people related to each impact. For example, you can get general information on yields of a new variety or the percentage or number of people who experienced a particular outcome.
6. In groups, you can get information about what categories of people or households are most affected by a particular outcome.
7. Diagrams by several individuals or groups can be compiled into a single diagram.

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