Knowledge, Attitude and Practice Survey to Assess Training Impact

Training is one of the primary means to develop the capacity of poor people to participate and fully benefit from mainstream economic development. IFAD places great emphasis on capacity development and training, which are fundamental to the success of development interventions, from agriculture and infrastructure to rural finance and gender equality. Training and capacity-development activities represent an important component in IFAD-supported activities. In some cases, up to 30% of project resources are dedicated to training and capacity-development activities. Therefore, assessing the efficacy of training programmes and the extent to which the information and skills gained from them are applied to and integrated into trainees' practices is an essential part of a project monitoring and evaluation (M&E) effort.

Some IFAD-funded projects in Bangladesh have been using a simple and efficient tool called the Knowledge, Attitude and Practice (KAP) survey. The KAP survey is a simple survey technique used to assess whether

trainees have understood and retained the key points of the training (knowledge), whether they have implemented the training (practice) and if they have not done so, the reasons why not (attitude).

KAP has proven to be a valuable tool for early assessment of training programmes and IFAD is encouraging its inclusion in the M&E programmes of all new and ongoing Bangladesh-based projects.

The KAP survey investigates

Knowledge:	Does the trainee know what to do (i.e., does s/he remember the key points of the training?)
Attitude:	Does the trainee think the technology is suitable for her/him (and if not, why not)?
Practice:	Is the trainee actually going to implement the new technology?

Why use KAP?

The KAP survey has several immediate advantages. It is particularly easy to use where technologies are disseminated through organised training events like training sessions, demonstrations and field days. The questionnaire is short and sample size is small, so KAP data can be processed quickly and easily using a computer, calculator or hand tabulation. KAP serves a double function:

1. In the case of positive findings (understanding and adoption of activity), it provides the earliest evidence of probable future project benefits and it is reasonable to presume that longer term outcomes and impacts such as increased income, more secure livelihoods, etc. will follow in due course.

2. In the case of negative findings, KAP provides an early warning that there are problems, either with the technology or with the training methods.

A KAP field experience

In December 2007, in Trishal Upazilla, Mymensingh District of rural Bangladesh, a KAP survey was conducted following a training for a new income-generating activity (IGA) on commercial radish production. A total of 108 women received training in commercial radish production (training was exclusively targeted to women's groups) through short sessions during regular women's group meetings. A sample of 36 women who had attended the training event was randomly selected to complete the KAP survey. The survey was conducted just as radish production season was beginning, following the recommendations in the KAP guidelines (see Annex "How to Carry Out a KAP" for a simplified overview of the guidelines).

In practice, the KAP survey is often structured as a P-K-A. The first survey questions investigate whether the trainee is planning to practice the recommended activity. If not, the survey explores the possible reasons for that: Is it because s/he doesn't know how to do it? If s/he does know how but still doesn't intend to practice, does the trainee have a negative attitude toward the activity?

Following this format, a 3-page questionnaire was designed, then pre-tested and revised before being administered to the sample group. The first survey question asked about whether the trainee actually implemented the IGA:

Adoption of income-generating activity

C1. Have you planted, or do you plan to plant, radish **for sale** in this Rabi season? YES / NO

C2. What is your reason for not planting radish **for sale**? (use separate sheet if more space is needed)

_____

C3. Have you planted, or do you plan to plant, radish **for home consumption only,** in this Rabi season? YES / NO

Taken from the KAP questionnaire used for the Commercial Radish IGA

Answers to the first set of survey questions showed that nearly 40% of the trainees did NOT implement the IGA. Only 61% had planted radish for sale while 39% either did not plant at all or planted for home consumption only. The training programme had only moderate success. Naturally, project staff wanted to understand the reasons behind the trainees' decision to either adopt the new activity or not.

An IGA training programme sets out to give its trainees the essential technical knowledge required to implement the activity. Therefore, the KAP is designed around 5-6 key technical points of the practice on which participants were trained. As was the case with the commercial radish IGA, successful transfer of knowledge does not necessarily ensure successful implementation of the activity because trainees may not actually put into practice the training they have received, even though they understand what is recommended. Where a trainee's knowledge and practice are not in agreement, it is necessary to assess the reason for the discrepancy. In some cases, this may be due to a negative attitude towards the concerned practice(s).

The KAP for the commercial radish IGA includes questions on 10 key technical points: soil type, variety, planting time, seed rate, planting method, fertilizer, irrigation, thinning, pest control and time of harvest (for leaf and root). For each technical point, three questions were asked— one to check for knowledge, a second to confirm what practice was used and a third to probe for the reasons a particular practice was or was not used, revealing the attitude toward the activity. For example, in the commercial radish IGA KAP, the first technical point about soil type included the following questions:

D1a.	**What is your idea of the best soil type for radish?**	**(Checking for KNOWLEDGE)**
D1b.	**What soil type have you actually used to plant radish?**	**(Confirming PRACTICE)**
D1c.	**If you did not use the best soil type, why not?**	**(Probing for ATTITUDE)**

Taken from the KAP questionnaire used for the Commercial Radish IGA

Findings on knowledge and practice

Overall, the level of technical knowledge among participants was found to be good (Table 1); it was rated poor with reference to only two key points (seed rate and root harvesting time). However, not all of these can be credited to the training programme. Many of the technical approaches to both traditional and commercial radish cultivation are essentially the same; these include soil type, planting time, fertiliser, irrigation, thinning and time of leaf harvest. A farmer entering commercial radish production would not do too badly if she/he simply used traditional practices in these areas.

Nevertheless, there was also good knowledge of some points that are essential for the commercial radish IGA, in particular variety and planting method. Even for these points, however, it is not clear that this training was the source of information, since it is known that farmers draw extensively on advice from seed sellers. It is important for a KAP to be designed to capture information about farmers' existing technical knowledge in order to determine if and what kind of training is required to introduce the new activity. It may be the case that farmers already possess enough knowledge to implement the new activity without additional training. Clarification of this point would require adding survey questions on sources of knowledge.

Table 1. Summary of technical knowledge and practice.

Technical Point	Level of knowledge	Level of practice
Soil type	Good	Good
Variety	Good	Poor
Planting time	Good	Good
Seed rate	Poor	Poor
Planting method	Good	Poor
Fertiliser	Good	Good
Irrigation	Good	Poor*
Thinning	Good	Good
Pest control	Good	Poor*
Time of leaf harvest	Good	Good
Time of root harvest	Poor	Poor

Note: *Mainly because the practices concerned had not been required up to the time of the survey.

Trainees' actual practice, however, was much poorer than their knowledge level, with serious gaps on variety, seed rate, planting method and time of harvest. The combined impact is that practically none of the trainees (even of those who carried out radish production for sale) actually adopted the IGA as trained. This was partially due to the unusual conditions in the early part of the 2007-08 radish cultivation season; some trainees attempted to plant improved varieties but were forced back into local varieties by loss of their initial plantings in the heavy rains of October 2007. The KAP results showed that trainees had an overall good command of the knowledge required to engage in commercial radish production, making it unlikely that this was an obstacle. So, what happened?

Additional reasons for non-adoption of the commercial radish IGA

The survey results indicated various reasons given by trainees for not implementing the commercial radish activity. A quarter of the trainees were prevented from implementing this because of factors beyond their control (family or personal illness).

On the other hand, 'lack of land' is a factor that trainees probably could have predicted before they took the training; it possibly indicates the need for better participant selection. The case where training was not implemented because the trainee's husband was not available is illustrative of a wider problem with gender-targeted training, which is further discussed below.

Table 2. Reasons for not implementing commercial Radish IGA

Trainee response	%*
Illness	25.0
No land	25.0
Husband too busy with off-farm work	12.5
Plans to plant in future	12.5
No reason given	25.0
	100.0

*Note: *% of all reasons actually recorded.*

Survey results also inferred that the probable reasons for non-adoption of the commercial radish IGA could be organised into three categories. The first is strongly related to attitudes toward the practice, the second with the training delivery and materials and the third is an inability to implement due to factors beyond the trainees' control.

Uncertainty about the benefit of the new activity *(attitude toward the practice)*

Probably the most important factor influencing the non-adoption of the IGA is that radish production using traditional technology is already well-established in the area. Trainees were not given any definite guidance on the extent to which the IGA is superior to the traditional technology. This may be partly due to weaknesses in training delivery (discussed below). However, it also seems there was no financial or farming system analysis of the IGA vis-à-vis traditional technology *before* the training programme was launched. Moving from the traditional system to the IGA requires additional expense (higher cost of hybrid seeds) and more labour (because of need for line planting) and entails sacrificing income from sales of radish leaf as a vegetable and loss of opportunities for intercropping and succession cropping. It is possible that farmers made their own appraisal of the relative costs and benefits and concluded, in the absence of project information to the contrary, that the traditional system offered greater rewards.

Inadequate training materials and delivery

One possible explanation is that the training did not adequately convey to the trainees the superiority of the IGA over the traditional technology. The 'training' was delivered in the form of group discussions during the general meetings of women's project groups and without distribution of handouts or other visual aids. In retrospect, this may not have been the most effective method of transmitting technical information, especially

where detailed knowledge of quantities is required (e.g., for fertiliser). Offering longer training sessions focused solely on the IGA would likely be more effective and improve trainees' understanding of the benefits associated with the improved technology.

Reasons beyond personal control

It is also possible that many trainees understood the advantages of the commercial radish IGA technology but were unable to implement it due to reasons beyond their control. There is definite evidence for this:

- Some trainees were hindered by the unusual weather conditions in October 2007. These trainees might adopt the IGA in the following year, but they may also be deterred by the risk involved. Hybrid radish seed is relatively expensive, and this investment is lost if the crop is destroyed by adverse weather. Other trainees reported that personal or family illness prevented them from carrying out the activity.
- More important is that, in the social conditions of the project area, most women trainees depend on male relatives to carry out the actual cultivation. The views of trained women are therefore likely to be overruled or disregarded by men who were not part of the training event. Perhaps, a majority of trainees effectively had no control over the field operations for radish cultivation. This is a common situation in female-targeted IGA training in Bangladesh (it was a major factor among female aquaculture trainees in the Fourth Fisheries Project).

How are KAP results used?

Recommendations to improve the commercial radish project

One of the outcomes of the commercial radish KAP survey was a set of recommendations for important project improvements that could increase the chances of future adoption of the commercial radish IGA:

1. Based on the conclusion that uncertainty about the commercial radish IGA was probably the most important factor in its non-adoption, a technical and financial analysis of traditional radish production vis-à-vis the commercial radish IGA should be carried out. The results, if favourable, should be emphasised in the training programme and disseminated through input dealers and other information sources used by farmers.
2. Significant changes to the design and content of the training programme should be made:

- Training sessions should be longer, separated from general meetings, and be more structured with a well-designed training module approved by project authorities;
- Training should be delivered earlier in the year when there is still time to influence farmers' decisions about the choice of technology;
- Training sessions should be made dual-sex (women group members should be accompanied by the male relative who will do the cultivation, provide money for seed and fertiliser, etc.);
- Simple graphic hand-outs should be provided showing the key points of commercial radish technology (especially for quantified recommendations such as fertiliser rates);

- Consideration should be given to the use of demonstration plots on farmers' land with field-day training at key stages of the radish cropping cycle.

Lessons from other KAP survey experiences

To date, IFAD projects have carried out eight KAP surveys in Bangladesh. On the whole, the surveys have highlighted a number of weaknesses in training—such as selection of training topics and delivery of training—but they have also provided evidence of successful knowledge transfer and at least some adoption as a result of training.

In some cases, the results of the KAP survey translated into specific changes based on the lessons learned. For example:

- Improved flip charts with better visual aids were introduced into a beef fattening training course after it was discovered that knowledge was low party because of poor training quality.
- Training of the husbands of women's group members is now strongly recommended after the commercial radish KAP showed that most of the field work was done by men and that the trained women had little influence on the adoption of the IGA.
- Practical, hands-on training on vegetable production was included in the Homestead Vegetable Gardening project to give trainees some experience that could motivate them to adopt practice.
- Project design has also increasingly used "value chain" approaches to ensure availability of inputs alongside knowledge from training programmes.

These examples show the potential that a KAP survey has for continual project improvement, increasing the chances that specific poverty reduction measures might be adopted at the village level.

A general approach to identifying and introducing IGAs

An unanticipated benefit of the KAP results was the ability to draw larger lessons from this one project experience. The finding that most farmers probably viewed the proposed IGA as being less beneficial than their current practice has significant implications for the identification and introduction of IGAs in general.

The first lesson is that a thorough analysis should be made before any IGA technology is selected for inclusion in a village-level training programme. Such an analysis should examine

- farmers' traditional technical practice in any existing related technology (including gender roles in operating the concerned technologies);
- the relative costs and benefits of the traditional practices vis-à-vis the proposed IGA; and
- farmers' levels of technical knowledge and their sources of technical information.

The proposed IGA should be included in the programme only if the results of the analysis are positive. Even then, the conditions under which adoption of the IGA is superior to traditional practices should be clearly communicated. Inclusion of IGAs on a 'wish-list' basis should be avoided.

Second, all potential IGAs should be screened for their relevance to achieving the overall goals of the project, vis-à-vis the cost and time required to develop technical packages that are clearly superior to existing livelihood opportunities. There is no point in sponsoring IGA training, which cannot make a significant contribution to poverty reduction or which theoretically promotes gender equity but is actually dependent on men's decisions and control over implementation and benefits. Project management should carefully consider whether small gains in income, livelihood security or gender equity justify the allocation of project resources, especially when alternative IGAs are available.

Conclusion

It is often assumed that the sharing of knowledge in the form of training programmes will translate into behaviour changes, which is ultimately what development interventions aim at. It is good practice to test such assumptions to understand under what conditions they hold and under what conditions they don't. Instruments such as the KAP survey permit users, in a relatively fast and inexpensive way, to gain a better understanding of the impact of training on the integration and adoption of new knowledge and practices. Analysis of KAP survey results facilitates an important process of reflection and learning that is crucial in development practice and key to increase project impact.

References

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Acronyms and abbreviations

IFAD	International Fund for Agricultural Development
IGA	income-generating activity
KAP	knowledge, attitude and practice
NGO	nongovernment organisation

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Annex: How to carry out a KAP

1. Select the technology

This should be guided by the importance of the various technologies for overall impact of the subproject.

2. Define the study coverage

This could be the whole project or one zone, or one district within a zone or all the districts covered by one NGO. Each subdivision is called a *domain of study.* If separate results are required (e.g., separate results by zone) there will be one domain of study for each subdivision required, and *each domain of study must be sampled separately.*

3. Select the sample

Make a list (technically called a sample frame) of the trainees who have received training on a specific technology by compiling the attendance lists from training events. *The KAP survey success depends on accurate maintenance of the training event attendance registers* (including such information as group name/number, trainee's name, father's/husband's name, and village) to permit tracing individual trainees, even after several months have elapsed). Then, select a sample according to the instructions in the KAP guidelines. The sample *must be randomly selected* and *no section of the group must be excluded* from the possibility of being selected.

4. Design and test the questionnaire

Survey designers and training providers should work together to single out the key points of each technology that are essential for successful implementation. The knowledge section of the questionnaire should then be structured according to the list of key points. A maximum of five or six key points is recommended in order to keep the questionnaire short and simple. The questionnaire should be pre-tested by conducting interviews with a small number of trainees and any necessary modifications should be made.

5. Train the data collection team

The training should consist of a short classroom session—maximum one day, including practice interviews by the data collection personnel on each other. Immediately follow the training with one or two days of practice interviews with trainees who have actually received training on the selected technology.

6. Set up the analysis and reporting systems

When the questionnaire has been finalised, the data analysis system should be prepared based on the questionnaire structure. At this stage, it is also helpful to prepare an outline of the eventual report, including blank tables for each category of results (e.g., % trainees deciding to implement the technology, % who know each of the key points of the technology, etc.). This can be done in parallel with training the data collection personnel. KAP can be analysed by computer, using a spreadsheet programme (Excel or a similar program), or by pencil-and-paper methods with a hand calculator.

7. Collect the data

This should take place just before the time the trainees would start implementing the selected technology. Especially for crop technologies, it is important not to be too late in starting data collection because farmers will be busy with the actual planting and they may be unwilling or unavailable for interview. It is expected that, for a typical KAP study, 1-2 weeks will be required to complete data collection.

8. Analyse the data

After all the interviews have been completed, the filled-in questionnaires should be returned to the subproject management unit for analysis. Results from the Practice and Knowledge sections of the questionnaire should be presented as percentages. The Attitude section of the questionnaire will contain various responses about why the trainees do not want to implement the technology. These should be grouped according to type of reason (e.g., shortage of labour, low price, excessive risk) and a percentage should then be calculated for the trainees giving each type of reason. Data analysis should take about 1 week.

9. Report the results

Present results in a short report (usually 4-5 pages). Design a table that includes each question and percentages of positive/negative responses for each one. Comment briefly on each result. Reporting should be completed within 2 weeks after completing the analysis.

10. Carry out a results survey

The value of the KAP findings will be increased if they are matched with actual results achieved by the trainees. For this purpose, the KAP sample trainees can be re-visited after they have completed one production cycle (e.g., after harvest for crop technologies, after sale of the first batch for fish-drying, etc.) to obtain information about actual production levels, prices received and any problems they encountered in implementing the technology. This information can be used to improve the technology and training methods for the following training cycle.