



Evaluating technology options

Introduction

Careful analysis ensures that recommendations address problems that are important to the farmers and their farming system. Such analysis avoids irrelevant recommendations which may be of interest but which are not really significant in the farming system.

Class objectives:

1. Analyze why recommendations fail
2. Develop criteria for prioritizing problems
3. Develop criteria for identifying “good” technology, and
4. Use the criteria to identify viable intervention(s) for their agricultural system.

Exercise

Part 1. Analyzing why recommendations fail

Ask for examples of technologies that have failed.
Make a list on the board.
Brainstorm as a group “Why technologies fail?”.
Make a list on the board.
(Use any case studies available.)

Part 2. Identifying the problem (Use Reference 1 below)

1. In small groups, identify factors to be considered in identifying priority problems
2. After 10-15 minutes, share with the group and make a single list for the group
3. Are some factors more important than others? If so, indicate which factors.

Part 3. Evaluating technical options (use Reference 2 below)

1. In small groups, make a list of what constitutes “good” technology interventions.
2. After 10-15 minutes, share with the group and make a single list for the group
3. Are some factors more important than others? If so, indicate which factors.

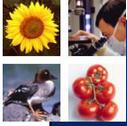
Part 4. Putting it together – identifying interventions (Use Reference 3 below)

1. Identify your crop of interest and make a list of crop production factors and approximate costs (See example table below)
2. Use the criteria developed in part 1 to identify which production or postharvest factors are priority problems,
3. Identify what you think are possible solutions and use the criteria developed in part 2 to identify which interventions should be considered important
4. As a group discuss and agree on high need interventions with high probabilities of success to be included in your extension program
Present as: Problem | Cause | Option | Why chosen?

Developed by Mark Bell, Shadi Atallah and Erin Hardie April 20, 2007

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Reference 1. Criteria for helping prioritize farmers' problems

- Percent area affected
- Percent of farmers affected
- Frequency of occurrence (each season, every third season?)
- Type and extent of problem (e.g., crop damage, cost – see attached sheet), labor required, yield loss)
- Affect on environment
- Is there a feasible solution⁺
- Other

You can use a score of 1 to 5, total the score and rank problems (1. Very low; 2. Low; 3. Medium; 4. Fairly high; 5. Very high),

Reference 2. Criteria for helping select interventions.

Note: The type of problem determines the possible actions.

- Political or institutional problems may just require work with institutions,
- Agronomic problems may
 - have known solutions that can be extended directly
 - have known solutions that need to be validated
 - have no known solutions and therefore require research

Evaluating technology options

Factor	Score
• Extent and type of benefit (labor, profit, yield?). (Use economic analysis below)	High score for high benefit
• Risk (more less, same?)	High score for low risk
• Availability of inputs	High score for availability
• Labor need	High score for less labor
• Ease of understanding extension message?	High score for ease of understanding
• Ease of adoption - Fit with farming system	High score for fit with system
• Marketability of any extra production?	High score for market availability for extra production at good price
• Effect on environment	High score for low impact on environment
• Other	

As above, a score of 1 to 5 can be given for each factor, scores totaled and problems ranked.

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Trainer exercise

Reference 3. crop production factors and cost analysis

What is the technical intervention you want to introduce in what crop?

- New technology _____
- Crop _____

Create a calendar of production and post-production factors for your crop and the typical costs associated (See example table below).

Factor	Current technology	
	Cost	Percent of total cost
Prepare land		
Level land		
Choose variety		
Plant crop		
Add nutrients (inorganic or organic)		
Irrigate		
Control pests		
• Insects		
• Diseases		
• Weeds		
• Other (e.g., rodents)		
Pruning		
Postharvest		
Harvest		
Store		
Process		
Transport		
Credit		
Other		

You don't have to be exact. The idea is to get approximate figures to be able to compare between factors.

Discuss – Check to see if any major costs have been missed in the table?

Now compare the cost of the new technology and see how production costs change.

Analyze returns

- Expected yield =
- Expected price =
- Are there quality premiums?
- What is the expected impact of your new technology? Lower risk? More yield? Higher price? Lower costs?

Analyze the costs and returns and how the new technology will help

1. Opportunities to reduce costs, and/or
2. Opportunities to increase yields, and/or
3. Opportunities to increase price

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