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THE SOCIAL DYNAMICS OF ON-FARM ADAPTIVE RESEARCH

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IICA OFFICE IN JAMAICA

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WHAT IS IICA?

The Inter-American Institute for Cooperation on Agriculture (IICA) is the specialized agency for agriculture of the inter-American system. The Institute was founded on October 7, 1942 when the Council of Directors of the Pan American Union Approved the creation of the Inter-American Institute of Agricultural Sciences.

IICA was established as an institution for agricultural research and graduate training in tropical agriculture. In response to changing needs in the hemisphere, the Institute gradually evolved into an agency for technical cooperation and institutional strengthening in the field of agriculture. These changes were officially recognized through the ratification of a new Convention on December 8, 1980. The Institute's purposes under the new Convention are to encourage, facilitate and support cooperation among the 32 Member States, so as to better promote agricultural development and rural well-being.

With its broader and more flexible mandate and a new structure to facilitate direct participation by the Member States in activities of the Inter-American Board of Agriculture and the Executive Committee, the Institute now has a geographic reach that allows it to respond to needs for technical cooperation in all of its Member States.

The 1987-1993 Medium Term Plan, the policy document that sets IICA's priorities, stressed the reactivation of the agricultural sector as the key to economic growth. In support of this policy, the Institute is placing special emphasis on the support and promotion of actions to modernize agricultural technology and strengthen the processes of regional and subregional integration.

In order to attain these goals, the Institute is concentrating its actions on the following five programs:

- **Agricultural Policy Analysis and Planning**
- **Technology Generation and Transfer**
- **Organization and Management for Rural Development**
- **Marketing and Agroindustry**
- **Animal Health and Plant Protection**

These fields of action reflect the needs and priorities established by the Member States and delimit the areas in which IICA concentrates its efforts and technical capacity. They are the focus of IICA's human and financial resource allocations and shape its relationship with other international organizations.

To further reach its objectives of encouraging, promoting and supporting the efforts of the Member States in the area of agricultural and rural development, the Institute renders technical services aimed at strengthening national institutions involved in this sector and serves as a multinational body for cooperation among member countries. IICA also provides direct advisory services and consultancies, implements projects, and acts as a forum and vehicle for the exchange of ideas, experiences and cooperation between the countries, organizations and other entities active in the agricultural arena.

The contributions provided by the Member States and the ties IICA maintains with its twelve Permanent Observer Countries and numerous international organizations provide the Institute with channels to direct its human and financial resources in support of agricultural development throughout the Americas.

The Member States of IICA are: Antigua and Barbuda, Argentina, Barbados, Belize, Bolivia, Brazil, Canada, Chile, Colombia, Costa Rica, Dominica, the Dominican Republic, Ecuador, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago, the United States of America, Uruguay and Venezuela.

The Permanent Observer Countries of IICA are: Arab Republic of Egypt, Austria, Belgium, Federal Republic of Germany, Romania, Hungary, the Federation of Russia, France, Israel, Italy, Japan, Netherlands, Poland, Portugal, Republic of Korea and Spain.



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THE SOCIAL DYNAMICS OF ON-FARM ADAPTIVE RESEARCH

L. Van Crowder¹ & William J. Fielding²,

(Adapted from J. A. Ashby, *Evaluating Technology with Farmers: A Handbook*, CIAT, Colombia, 1990)

This paper gives some guidelines as to how to conduct interviews with farmers in order to create an atmosphere in which the researcher and farmer can work for each other's benefit. This requirement is essential in the cases of on farm-research or the collection of information.

The farmer is the one who finally decides whether or not a new technology is useful:

In on-farm adaptive research (OFAR) the active participation of farmers is key to developing technology that is relevant to *their* farming systems. It is important to remember that farmers need research only to the extent that it generates methods they can use. This means that their perspectives (or evaluations) have to be included in developing appropriate technologies. Without farmers' perspectives, researchers and extension agents will not be informed about the acceptability of proposed innovations to farmers.

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Farmers' evaluations tell us:

- * Which features of a technology they consider important.
- * How they rank alternative technologies in order of preference.
- * Why they prefer one technology over another.
- * Whether they are likely to adopt a new technology.

Successful OFAR programs:

The success of any OFAR program in generating technology for farmers depends on good collaboration with them. Obtaining useful information from farmers means that a high quality relationship of trust and confidence between researchers and farmers must be created and maintained.

Social perceptions: When farmers are talking with researchers or extension agents they are aware of being in a social situation that is different from their interactions with other farmers. The researcher will often be perceived by farmers as a "social superior" - more educated, using scientific terms, dressing in smart clothes, etc. These differences can put farmers on guard about what they say or do.

Farmers may see researchers and extension agents as having access to knowledge, techniques and inputs that can be valuable resources to farmers. While this can help to motivate farmers to collaborate in OFAR, it can also create a reserve, and farmers, fearing that researchers may cut off collaboration, may be cautious in expressing their own feelings. For example, concerns they may have about a proposed technology.

In such a context, farmers may defer to the researcher's opinion that a new technology is better than the farmers', and express agreement even though they do not really believe the new technology is better.

Another type of reserve may exist because the farmer, instead of seeing the researcher as bringing "goods," may be suspicious of his motives, believing that the researcher has hidden objectives.

In both cases, the key is open communication about the objectives of the OFAR and the pros and cons of the proposed technology: The researcher needs to communicate to the farmer that he can criticize or reject the technology being tested; that methods are being tested that may or may not be better than the farmer's own.

Thus, successful OFAR occurs when the farmer frankly expresses opinions about the technology which the researcher and farmer are testing together. This requires a high degree of trust and mutual understanding that is established through their social interaction (face-to-face communication). In the following section some techniques that can help researchers communicate successfully with farmers are discussed.

Farmers as colleagues:

In OFAR, the type of relationship that researchers should strive for with farmers is one in which farmers are treated as colleagues. This means that researchers and farmers are partners in the research and continuously collaborate in all activities. It also means that researchers must be prepared to learn from farmers in order to guide the applied and adaptive research.

As discussed above, the researcher is likely to encounter certain social perceptions or expectations held by farmers, as illustrated in Table 1. These expectations are possible sources of bias which are likely to discourage farmers from expressing frank opinions. Instead, the researcher must strive to establish the expectations summarized in Table 2. This can best be accomplished by putting the farmer in a teaching role. If the researcher portrays himself as knowing all the answers the farmer may either become uncommunicative or wonder why the researcher is bothering to see the farmer. *Remember, on the farmer's field, the farmer is the expert.*

Also, the farmer should be treated with the same courtesy given any research colleague. For example, common courtesy requires notifying the farmer prior to a visit, if possible. If you do arrive unannounced, and the farmer is busy, be prepared to return later at his convenience.

TABLE 1. Conventional expectations of farmer-researcher relations.

Definition of researcher's role	Definitions of farmer's role
Researcher is the expert	Farmer is the layman
Researcher is a social superior	Farmer is a social inferior
Researcher represents modern agriculture	Farmer represents backward, traditional agriculture
Researcher merits deference from farmers	Farmer should show deference to researcher
Researcher asks questions	Farmer gives answers
Researcher makes decisions	Farmer complies with researcher's decisions
Researcher controls strategic resources, may harm farmer, i.e. act counter to farmer's interests	Farmer lacks control, is powerless to influence researcher's behavior, is dependent on the researcher's goodwill
Researcher is supposed to teach and convince the farmer that new technology is better than existing practices	Farmer is supposed to learn from received wisdom of researcher

TABLE 2. Key expectations for successful farmer evaluations.

- Researchers and farmers are experts in their own different fields of knowledge and experience.
- Both types of knowledge merit mutual respect.
- The farmer's agricultural practices, and whole way of life, are respected and esteemed by the researcher.
- The farmer needs to understand the technology that is being tested, and therefore has the right to ask questions; he is entitled to explanations and justification of the research.
- The researcher is motivated to learn from the farmer who will, therefore, teach as well as learn.
- The farmer will be responsible for decisions that can make or break the success of the research

I. Aspects of the first visit

Clarifying expectations: If farmers do not know or understand the OFAR objectives, their evaluation of technologies will be superficial and misleading. To prevent this the following information must be provided to farmers to enable them to communicate equally with you and provide the right atmosphere for the interview:

- . **Your name.**
- . **Your professional role (a simple job description).**
- . **Your institutional affiliation (explain what the organization is called and what are its main activities).**
- . **Reasons why researchers want to work on farms.**
- . **Reasons why researchers need to talk with farmers.**
- . **An explanation of what an experiment is, what is done, and for what purposes.**
- . **An explanation of the role farmers will play in the research.**
- . **Reasons why the farmer's role is important (how research will succeed or fail depending on whether farmers take part).**
- . **An explanation of what farmers can hope to gain (and cannot expect to gain) from taking part.**
- . **An explanation of what researchers cannot do (provide electrification, build schools, etc.).**
- . **An explanation of your special interests and expertise (related to specific crops, disease, etc.), and of the type of information in which you are interested.**
- . **An interest in the farmer's activities, technical problems and to see some of the fields.**

Figure 1 summarizes these topics in a flow chart. In the opening stage, or "warm-up," the key expectations presented in Table 2 are defined by the researcher's presentation of himself. In the second stage, the researcher develops the general purpose of the contacts being made with farmers and the expectations the researcher brings to the OFAR, shared responsibilities, etc. If possible perform stage two while having a tour of the farm. It will be less formal and the farmer will feel more comfortable. The researcher will be learning from the farmer while the farmer learns about the purpose of the visit. In the closure, the researcher tells the farmer what he can hope to gain, inviting the farmer's questions, and mutual commitments and future action. Be willing to help the farmer at the end of the meeting. The farmer has spent his time giving you information, clearly it is unfair for you to merely drive off at the end of the interview. Be prepared to give him some advice. He may see you as an expert, and a potential source of information. This stage is particularly important if you wish to have the farmer's cooperation in the future. This last stage could be done after the tour of the farm.

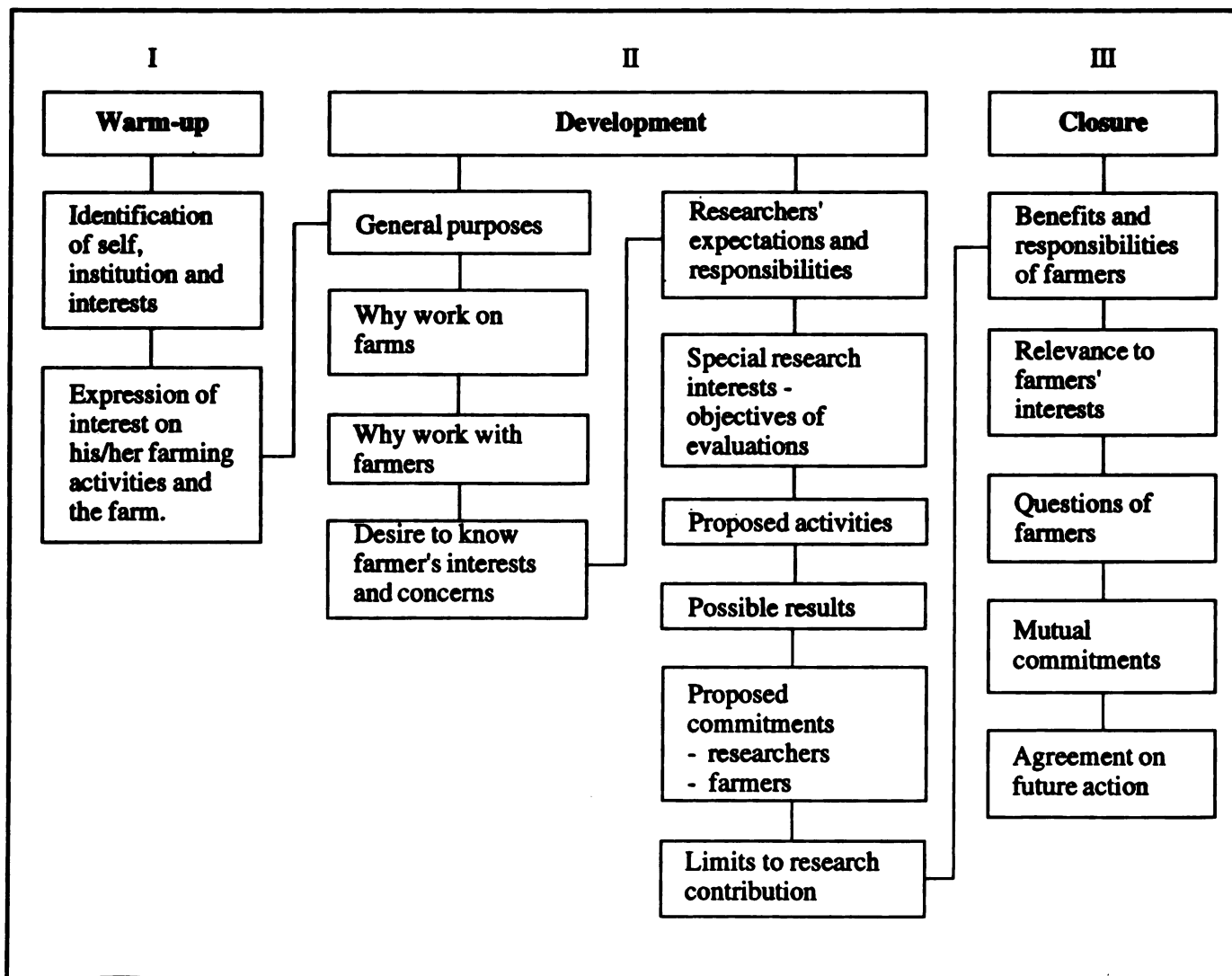


FIGURE 1. A flowchart of a dialogue with farmers for explaining the purpose of farmer evaluations.

Remember, first impressions count. The farmer's initial impression of you begins when he first sees you. If you arrive in a Government plated vehicle what will he think? If you wear dress shoes and greet the farmer in a superior manner what will be his reaction? If you arrive with half a dozen other interviewers what will be his reaction?

II Aspects of all visits.

Skills for communicating with farmers: Knowledge of how to manage the skills of face-to-face communication is invaluable for conducting interviews with farmers in order to obtain their evaluations of proposed technologies. Face-to-face communication skills with farmers can be divided into two types: *Those for listening and those for asking questions.*

How to listen to farmers: If you were to eavesdrop on a conversation between a researcher (R) and a farmer (F), you might hear the following:

- . R agrees with F and interrupts him to give an example of something that supports his point of view.
- . R vigorously shakes his head while F is speaking.
- . R contradicts F.
- . R shows disapproval by facial expression or by moving away from F.
- . R is bored by F, stares into the distance, fiddles with his clothing, picks his fingernails.
- . F shows R how to do something and R gives F advice on how to do it differently.
- . R loses interest in what F is saying and introduces a new, unrelated topic of conversation.
- . R expands on a theme to F and overrides F's attempts to speak.

This interaction between a researcher and farmer is counterproductive. It is important to be receptive to whatever the farmer says, however contrary to received wisdom; it requires listening skills to help the farmer expound his perceptions. A useful exercise is to write down the appropriate signals to make in a face-to-face conversation to express interest in the speaker. These might include:

- . Nodding your head.**
- . Interpolating grunts that express interest ("a-ha" and "umm").**
- . Interpolating "I understand" or "very interesting."**
- . Leaning forward intently.**
- . Making eye contact.**
- . Smiling.**
- . Taking a relaxed body position.**

Important "don'ts" in effective listening are:

- . Don't get impatient or interrupt the farmer.**
- . Don't contradict the farmer.**
- . Don't show disapproval of the farmer's statements, even if you disagree.**
- . Don't express judgements about the correctness or incorrectness of what the farmer says.**
- . Don't give the farmer advice during an evaluation, even if your other professional responsibilities or activities involve giving farmers advice.**
- . Don't convey either verbally or non-verbally that you are bored by what the farmer is saying, even if his comments wander away from topics that are of interest to you.**

How to ask farmers questions: A good technique for asking questions is *probing*. Probing combines being a good listener with asking questions which direct the flow of a farmer's spontaneous comments. It involves rephrasing or repeating in the form of a question something of particular interest that the farmer has said.

For example:

- . **Restate what the farmer has just said (the mirror technique): "So it resists the drought..."**
- . **Repeat a remark that has just been made in the form of a question. By doing this, you invite the farmer to expand on this particular theme: "It resists drought?"**
- . **Go back to and repeat a comment made earlier. This can help to steer the farmer's flow of comments in a direction you think important.**
- . **Ask the farmer to clarify "Could you tell me a bit more about this?"**
- . **Summarize in your own words what you understand the farmer to have said, and ask, "Do I understand correctly?"**
- . **Be prepared to admit uncertainty with the statement "I'm not sure I understand correctly; you seem to be saying the following..." and repeat the farmer's statement.**
- . **Remain silent (the five-second pause), keeping eye contact. This encourages the speaker to keep talking.**

The "key word" probe is a technique for understanding a point of view by repeating a key word from what the farmer said and seeking clarification, as shown in Table 3.

"Open questions" is another interview technique. They give freedom to express opinions without explicitly directing the response; they are different from "leading questions" in which the kind of response that is expected is implied in the question. Consider the following dialogue between a researcher and farmer:

TABLE 3. Key word probes for checking interpretation of what farmers say.

FARMERS' COMMENTS

KEY WORD PROBE

It's difficult to weed.

In what way is it difficult?

The sprawling plant is an advantage.

What makes it an advantage?

The flavor is better.

What is it about the flavor?

This is easier to grow.

How can you tell its easier?

This variety is too tall.

How does its being tall make a difference?

What is "too tall" - what would be tall enough?

TABLE 4. Open questions to stimulate farmers' ideas.

- Can you tell me more about this?
- What would be an example of that?
- What makes you see it this way?
- What are some reasons for that?
- Could you help me to understand this better?
- Have you any other ideas about this?
- How do you feel about that?
- How do you think other farmers would feel about this?
- How would you describe this?

Researcher: This looks very nice, some of these varieties appear to be doing really well, don't you think?

Farmer: Yes, well, these are all good varieties.

Researcher: What about this one, this one is standing up well against the mildew?

Farmer: Yes, this is a healthy variety, very resistant.

Researcher: What about the others, don't you think they are less resistant?

Farmer: Well, I think most have suffered from disease; they look pretty sick to me.

Researcher: Yes, this one in particular has problems, don't you agree?

Farmer: This plant is very bushy, it has a lot of disease.

Researcher: Don't you think some of these varieties are rather late flowering?

Farmer: Some, like this one here, have not formed any pods yet; this is definitely very late.

Researcher: Isn't this one rather stunted, maybe this variety needs more fertilizer...What do you think?

Farmer: Well, we have a lot of problems here with fertilizer; it is very expensive.

This conversation is full of loaded leading questions that convey the researcher's opinions and receive an answer that confirms them. By contrast, open questions stimulate the farmer to express his ideas and opinions, as shown in Table 4.

Researchers carrying out interviews with farmers to obtain their evaluations of OFAR should develop a repertoire of questions such as:

- . What do you think of the trial?**
- . Are there any treatments which you think are especially interesting? Why?**
- . Why do you think this difference (among treatments) has occurred?**
- . What do you think of the appearance of the plants?**
- . How do you think this treatment compares with that?**
- . Have you noticed any difference in the management (weeding/irrigation/fumigation, etc.) requirements?**
- . Why do you think this (referring to an observation made by the farmer) is important?**
- . What sort of yields do you think we are going to obtain?**
- . Do you think there are any problems here we should look into?**
- . Do you see any advantages or disadvantages to this (referring to an observation made by the farmer)?**
- . How do you think this compares with your current practice?**
- . "Would you recommend that we continue to test this, or had we better look forward for a different alternative?"**

There may be some information which the farmer may regard as sensitive and he may believe that the truthful answer might show him in a bad light. In such cases, it is best not to ask the question at all, but to make *observations* that will provide the answer. For example, if one wants to know how the farmer applies pesticides, visit him at a time when he is straying or at least ask to see what equipment he has for spraying chemicals.

In some cases, the farmers may not know the answer to your question and so provide a guess. It may be possible to check these answers by actually counting the number of trees or measuring the area planted. If some of the farmer's answers are going to be "checked", indicate the wish early on to see certain things, so as not to make him look uninformed about his own farm. Some farmers may not accurately know the size of their farm, or the actual distance between parcels. These can be easily estimated and the farmer's figures verified. Another advantage of the researcher verifying answers is that a scientific opinion can be made of the farmer's observation.

The members of the interview team must be chosen carefully. If the extension officer is present, and the farmer has received training from the officer, the farmer may feel that he is being tested on how much he has learnt. Also, if members of the team are not versed in interview techniques, they might indulge in some of the bad practices mentioned above. Training in interviewing is a pre-requisite to good interviewing; just because we talk and hear does not mean we know how to ask questions and listen.

When conducting interviews for a survey, it is best if the questionnaire is used as an "aid memoir" and data recording sheet rather than going through the form question by question. In many survey forms, there are often "questions" that do not need to be asked. The most obvious is "What is the sex of the farmer?"; the more answers which can be observed the easier the interview will be for the farmer.

If sensitive information is being sought, such as earnings, the farmer may be unwilling to answer a direct question. However, one may be able to infer an approximate figure by asking a number of indirect questions. For example, if one obtains information on area planted and production, gross income can be estimated.

Summary of communication skills:

OFAR requires that researchers communicate respect for and lively interest in farmers' ideas. They must create an opportunity for farmers to express honest ideas about proposed technologies, as well as elicit and understand the reasoning behind farmers' evaluations. To achieve valid information about farmers' opinions, researchers conducting interviews with farmers to evaluate technologies need to use skills for managing communication which include:

- **Listening skills**
 - to communicate receptivity and respect.
 - to hear what the farmer is saying with an open mind.

- **Probing**
 - to combine receptive listening with questions which unobtrusively direct the flow of a farmer's comments.
 - to check understanding of the farmer's point of view, and consistency of the farmer's remarks.

- **Open questions**
 - to stimulate free expression of farmers' opinions.
 - to avoid giving clues about the researcher's own opinions, which may bias farmers' responses.

INTERVIEWER TECHNIQUES FOR STIMULATING FARMERS' IDEAS IN OPEN EVALUATIONS.

1. Ask "What do you think of...(this trial, this treatment, this planting system, this variety, etc.)"

Then probe with:

"This is interesting..."

"Could you explain that?"

"Tell me more about it?"

"Can you give me an example?"

"Is that an advantage or a disadvantage for you?"

2. Ask about meaning

Farmer: "This variety makes weeding more difficult".

Interviewer: "What does 'more difficult' mean to you?"
"In what way is it more difficult?"

3. Ask about values and feelings

Farmer: "This way of planting will take more time".

Interviewer: "How do you feel about that?"
"Even if the yield is higher, will you prefer..."

4. Ask about similarities and differences

Interviewer: "Would you group any of these? How do they go together? Why do you put these in one group and those in another?"

5. Ask what difference does it make?

Farmer: "I like this plant because its very bushy and has a lot of leaves."

Interviewer: "Does that make any difference to you? Why is it important to you? Would it ever not be important? When? Why?"

6. Query contradictions

Interviewer: "You said that plant is bushy and that's an advantage - but here you say, this plant is too high because its so bushy: Can you explain this to me?"

Some farmers may feel insecure about certain things. Any question indicating doubt about what he said may upset the farmer and so reduce his cooperation. Voice intonation and phraseology are very important in such queries.

7. Use the "naive" approach

Interviewer: "I've never worked as a farmer here: Why might I want to plant this way? Why not? What would you tell me if you were teaching me about this method?"

8. Design or redesign

"Imagine you could make (or design) your own perfect (plant/fertilizer/plough, etc.). Don't worry about whether its possible or not... just use your imagination and tell me, what would it be like?" "If you could change this in any way you liked, what would you change? What would you leave the same?"

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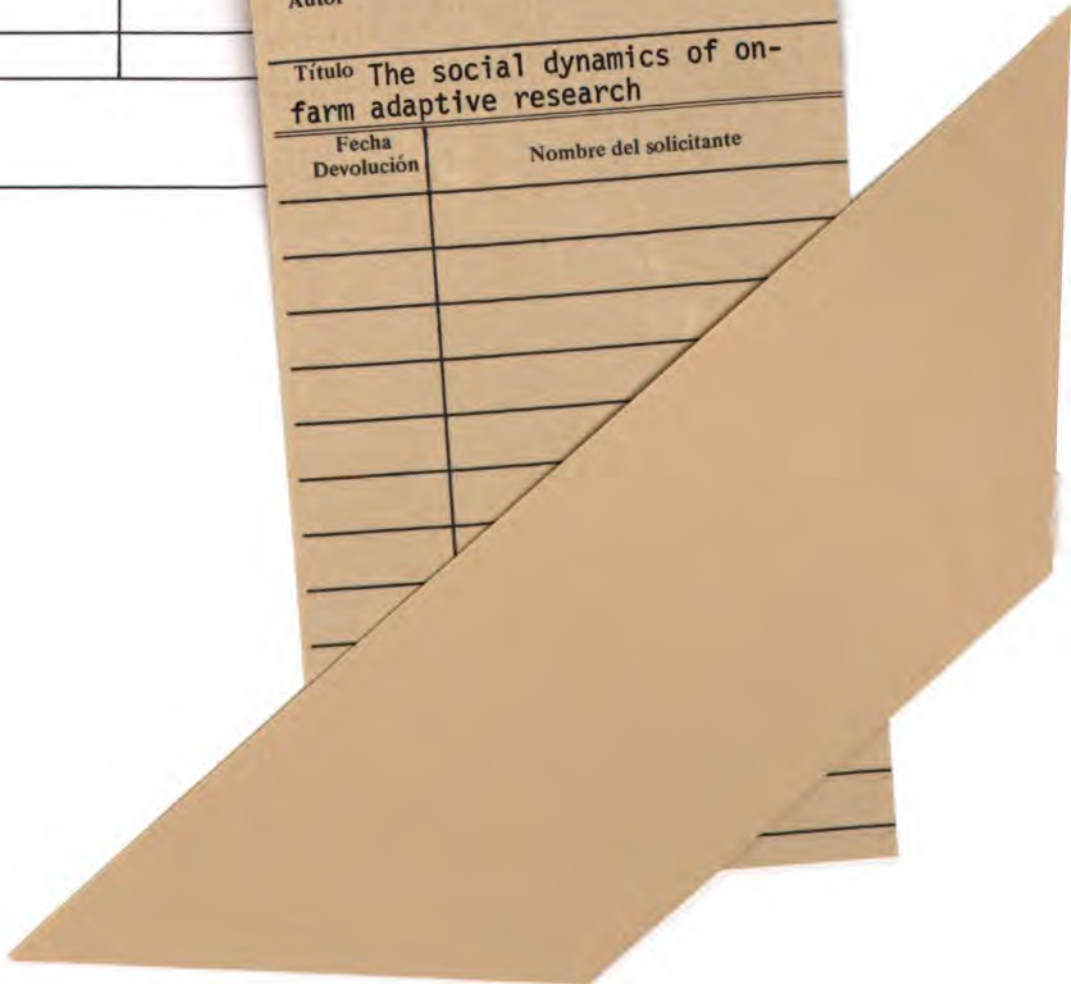
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