

Manual on the use of participatory approaches in agriculture studies

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Foreword

We learn significantly when we engage people in the community. It is only in asking focused and well-thought-through questions that we are able to know what our stakeholders would like to convey for us to serve them better. From the conversations with our stakeholders, we come up with policies or new research for development directions.

We can, however, only be able to do that when we do our best to make our processes participatory and emancipatory. Participation is a big word. Many attempt to do their community engagements in a participatory manner, but these attempts have not always been successful, resulting in initiatives that purport to be participatory.

In this manual, we introduce some of the commonly used data elicitation techniques that help in facilitating community engagements, especially in data collection. The manual is written from the practitioners' perspectives with careful reflection as to how they adapted each method to suit the purposes of their respective people engagements. Our intended audience for this manual are students, researchers, and members of the academe who would like to do social research in the agriculture sector in the Philippines.

We hope that through this manual, we would be able to give and capture the voice of the people whom we would like to engage. We, at DA-PhilRice, thank our contributors from the Central Luzon State University; Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development; Pontifical Catholic University of Peru; The University of Queensland; and the Consultative Group on International Agricultural Research Program on Climate Change, Agriculture, and Food Security for unselfishly sharing their practices with us in using the participatory approaches presented in this manual.

JOHN C. DE LEON
Executive Director

Preface

We oftentimes read “participation” and “need to participate” in many project documents and research papers in our work. There is recognition that people must participate in the process, especially during the data collection phase of our research for development (R4D) initiatives, these be for baseline, monitoring and evaluation, or empirical research studies. Yet, we know of focus group discussions where people were asked to participate but only one person dominated the whole discussion. We know of consultations where the information collected is chiefly from the elites in the villages and other similar situations—and we write about those reports saying that participation indeed ensued.

How do we really enhance participation of our stakeholders in the process? How do we get their voices to inform our processes and our data, especially for researchers? In this manual, we aim to introduce you to some of the methods we may use in collecting people’s voices to inform our R4D initiatives.

Each method is described paying attention to the materials needed, how-to’s, potential issues, tips in processing the information collected, and an actual example in which this method was employed. Contributors are from the academe and community development practitioners from the Philippines, Vietnam, Bangladesh, Canada, and Australia. Their contributions show how these methods have also been found useful in other contexts aside from PH. While you will also read descriptions of these methods in books and other publications, the entries in this manual are written for and by practitioners themselves. Hence, they are practice-based with inputs told as to how they materialized in practice.

It is hoped that through this manual, researchers who want to do work in the agriculture sector in PH may be able to achieve greater stakeholder involvement in their R4D efforts.

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Acknowledgment

I wish to thank my co-authors for agreeing to share their experiences in this manual. They just sent their respective contributions after just two or three email exchanges—pretty easy to put everything together!

While targeting the Filipino audience, the reader is given a global perspective of some sort as regards the applications of these participatory methods, drawn from global practice of the manual authors.

The experiences shared in this manual, particularly mine, were drawn from various research engagements. Hence, I thank the funding agencies and partners in my previous and current projects—the Consultative Group on International Agricultural Research Program on Climate Change, Agriculture and Food Security; Department of Education, in particular its Technical-Vocational Unit; The University of Queensland’s Research Training Program; Australia Awards; and my home agency, PhilRice.

I also thank my research participants for sharing their experiences with me, for helping me see the advantages and disadvantages in using the approaches that I present in this manual. They are instrumental in helping me reflect on my practice, especially in being conscious in giving voice to the stakeholders whom I want to engage.

Lastly, I thank God Almighty for allowing me to do all those studies from which I learned to practice and adapt the participatory approaches. Using these tools has helped me deepen and sharpen my social awareness.

Jaime A. Manalo IV
Science City of Muñoz, Nueva Ecija
December 2022



1 Resource-mapping

By Jaime A. Manalo IV



For researchers who are new to their research sites, there is always that urge to know more about the place in an instant. Resource-mapping allows this to happen. The community members can introduce the researcher to their locality with emphasis on its basic resources, as it is called “resource mapping”. This method enables the researcher to gain plenty of insights in an hour or two of drawing and processing exercises.



Materials needed

- Manila paper
- Markers
- Crayons or any coloring materials
- Scotch tape
- Digital recorder



How-to

1. Explain the purpose of the study or the intervention to the participants from the community. Orient them about the study, their rights, and that you will record the conversations.
2. Brief them about what resource-mapping is.
3. It is ideal if you have fewer than 10 participants. Assuming you have 10, divide them into two groups.
4. Give each group a set of the materials enumerated above.
5. Ask them to draw their community with emphasis on the resources that they have with respect to the initiative that you are working on. For example, if your project is about knowing how rice farmers adapt to drought, you may give this instruction: Please draw your community highlighting the places and practices that help you adapt to drought. For example, you may put the banks from where you loan money.
6. In giving examples, try not to give too many of them because you might dampen the creativity of your participants.
7. As they start their drawing exercise, roam around to check that they are on the right track.
8. If they are off-track, mediate by explaining what they should do. You should, however, play it by ear if they find your presence annoying. If that is the case, keep your explanation as short as possible.
9. It is also important and at some point symbolic that you give each of the participants a marker. In participatory development discourse, it's called "handing over the marker", which shows that you are giving them the power to participate.
10. During the drawing exercise, record the conversations because these are a good source of data.
11. As they draw, check that everyone is participating. If you see one who is not, engage the person and ensure that s/he participates.
12. The actual drawing exercise may last 20-25 minutes.



H. DELA ROSA



Tips during the process

The drawing exercise and the conversations that took place are already a good source of data. It is, however, during the processing when you collect the bulk of data. Hence, it is important that you do this really well. Below are some tips:

1. Ensure that all participants are finished with their outputs.
2. Make sure the recorder is on, and that you have a spare unit in case the memory runs out.
3. Ask someone to present, and encourage the rest to chime in.
4. Play it by ear: if there is good camaraderie within the group, you may ask the non-presenters to just politely chime in whenever they like. The importance of this is it avoids missing an important point as opposed to waiting for the presentation to end. It also ensures that the discussion is free-flowing.
5. As they talk about important points from their output, make sure that you ask the questions you have on your list that relate to this exercise. Alert: you should have some guide questions prepared that you will use to steer the whole discussion. A good advice to keep, however, is to ensure that you use this sparingly as long as the discussion is within the objectives that you set for the exercise. Try not to meddle too much.

6. As with any Focus Group Discussion, the chance is high that one or two or three will likely dominate the discussion. Use your facilitation techniques, such as doing a round-robin of responses [asking all participants to give a response]; moving your eye contact to other participants; politely asking the domineering discussant to stop; directing a question to someone.
7. Given that this is a resource-mapping exercise, take advantage of the presence of the more senior participants, especially if they don't talk much. They have a sense of history about the place that will enhance the data for your project.
8. Close nicely by summarizing the major points collected. Say something like, "that's it for this exercise, let's move on to the next".



Potential issues

1. Participants don't want to draw. If this is the case, try to encourage them, explain the purpose. If you are unsuccessful, proceed with the focus groups.
2. Some are not taking part. Ask what is wrong. Convince them to draw and emphasize that the exercise is not about coming up with a good drawing. This is important as usually they doubt their drawing skills (or lack of).
3. Certain participants are monopolizing the exercise. Check if others feel that they are not given the chance to participate, or is it the case when they are just figuring out what they will put. Usually, others are polite to their co-participants once they start to give their inputs. It is an extreme case that one does not allow others to draw. If that happens, you just have to stop the exercise.



Actual field example

This is one of my favorite participatory methods because I really learn a lot about my research site in a short span of time. I have used this method a number of times. During my PhD days in 2018, I used this in investigating how farmers in Anao, Tarlac and Libmanan, Camarines Sur adapt to drought. There, I asked my farmer-participants to draw their community with emphasis on the resources that they have to effectively cope with drought. The outputs were so impressive. Just by looking at the drawings, i.e., prior to the processing, I was already very happy with the wealth of data that I was seeing. There I saw rural banks where they take out loans; vast grasslands in Anao where they pasture their farm animals that they sell whenever there is drought; the creeks that serve as their source of water; and others. It was very rich, insights-wise.

Recently, my teammates and I used this method in understanding our research site in Tanza, Cavite. It was very insightful given that all of us were not from Cavite. During the exercise, the farmers were such a joy to watch. They were literally checking and cross-checking each other with regard to the position of the ricefields and the popular landmarks in their place. The drawing exercise also proved to be a good venue for debate among farmers in terms of which one point to blow up in their drawing, and which ones to remain in the background. There I saw how subdivisions just mushroomed in the area and how rapidly industrialization was taking place. From there, it proved easy to facilitate the discussion. The drawings revealed how the rice areas had shrunk over time. I also noticed that with the resource map in front of the farmers, they were so emphatic during the discussion.



2 Participatory weed identification

By Jaime A. Manalo IV



Weeds are among the major pests of rice. If left unabated, weeds can cause up to 30% yield loss. Hence, it is important that the weed issue be addressed. Central to addressing this problem is ensuring that they are properly identified. Participatory weed identification is a way to do it with farmers.



Materials needed

- Photos of weeds
- Chips made of art paper or any sturdy material
- Long table
- Pen and paper



How-to

1. Arrange the photos on a long table. Put them in such a way that they are given equal visibility. Maintain some distance in between photos.
2. Put the chips at the center of the table.
3. Ask the farmers to gather around the table and move in circular rotation.
4. As the farmers look at the photos, they have to put chips on top of the photo of the weed that they see on field.
5. To highlight the prevalence of certain weeds, you may have additional rules, say: 1 chip for those that you just see but not really a big problem in your area; 2 chips for those that are quite an issue in your area; 3 chips for the major weeds in your area that are causing a headache among you.
6. Once done, a member of the research team will tally the number of chips that are on top of each of the photos.
7. Use the results to serve as a takeoff point for discussion. For example: “It appears that *Cyperus rotundus* is the most common weed species in your area. Is this true? What do you do to manage it?”



D. DONAYRE



Tips during the process

1. Once the participants are done putting chips on the photos of the weeds that they see in their rice fields, ask them to sit while the members of the research team tally the results.
2. Present the results to the farmers and start the discussion.
3. It is good to start with the top three weeds that have the highest score.
4. Depending on your research objectives, you may have to ask why are those weeds prevalent, and what are the options that farmers do to manage them.
5. Use your ready list of questions in steering the discussion, but try not to depend too much on it. Let the discussion flow as freely as possible. Your aim is to ensure that a fluid storytelling happens among the participants.
6. Use your facilitation skills in carrying on the rest of the discussion.





Potential issues

1. Participants may not be very careful in putting chips on top of the photos, which may have some bearing on the tally. This can be addressed by roaming around the venue as the farmers put chips. Members of the research team may also want to do some random checks such as asking farmers if they really mean to put 2 chips or just 1, and so forth.
2. They may imitate others in terms of the number of chips that they put on top of the photos. This is not a very common issue. Should it happen, random checks will help solve it.
3. Farmers may fail to observe physical distancing. It is important that you remind farmers about physical distancing especially at the time of pandemic.



Actual field example

I was asked by a team of weed experts at DA-PhilRice to facilitate a focus group discussion on their project on managing weeds. I was very excited because it was an opportunity for transdisciplinary encounter, and to show what participatory methods can do. The data collection happened in two sites in Nueva Ecija. In one site, about 10 farmers turned up. The activity happened spontaneously and I can picture how farmers excitedly put chips on top of the photos of the most prevalent weeds in their area. When our research assistant did the tally, we came up with the top three most prevalent weeds in the barangay, which served as a takeoff point for the discussion. As an observer, I found it very empowering because all participants were given a voice in the process because they were all given the chance to identify and put their chips on the weeds that they know. My colleagues from our Crop Protection Division were also very satisfied because it gave them knowledge on the prevalence of weed species under investigation. From weeds identification, the questions proceeded to the management options that farmers employ. The result of the focus group activity was used to chart the interventions that the experts would implement in the barangay.

3 Matrix ranking

By Jaime A. Manalo IV



If the interest is to know the main issues that should be dealt with or anything that has something to do with prioritization, matrix ranking is one good method to use. The output is able to give a snapshot of the issues in question, and serve as a takeoff point for discussion among the focus group participants.



Materials needed

- Manila paper
- Markers (one each for every participant)
- Scotch tape
- Digital recorder



How-to

1. Orient the participants about the purpose of the project and of the exercise. This is also the part where you tell them about their rights as a participant in the project, and that you will be recording the whole activity.
2. Before you start, you should have a Manila paper with a ready table on it—just two columns. Column 1 are the issues to be ranked, and column 2 is the rank.

3. Give each of the participants a marker.
4. Ask them to put a mark on the issues that they think are important to be addressed. They will do it one by one. It is like voting for something.
5. Once they are done, a research team member will then do the tally. The outputs are the top issues pertaining to the issue in question.
6. Use the results to spark the group discussion.



T. JUGANAS



Tips during the process

1. Have a look at the outputs and ensure to spot the highlights of the table.
2. Start the questions from the highlights (highest, lowest) of the table.
3. This is the part where you would like to be ready with the questions that you have prepared, but try to use them sparingly. Let the discussion take care of itself as long as it is within the objectives that you set for this exercise.
4. Use your facilitation skills to carry on the whole discussion.



T. JUGANAS



Potential issues

1. Participants don't want to rank. This is not very common. Usually they are very polite to facilitators especially if the task is very simple as putting a mark on one of the options. If this happens, it is fine, just look for one who is willing. You, however, may want to ask why this is the case. One of the reasons would be the farmers don't want to raise something that might not sit well with your guide, who may come from the local government unit or someone associated with the issue in question. Hence to avoid this, it is a must to instruct your guide to not intervene with the process. Or, better yet, for him/her to not be on the site where the exercise will be conducted. To do this, you may have one of the research team members to keep your guide company.
2. Participants do not understand your categories of issues to be ranked. This is where you have to overcommunicate clarity. This usually happens when we assume that our work is already easy to be understood. For example, when we have used the same material in one site, we assume that participants in other sites would easily pick it up. We need to check and re-check because of the inherent differences in our sites and participants. Language, for instance, is usually the source of misunderstanding.



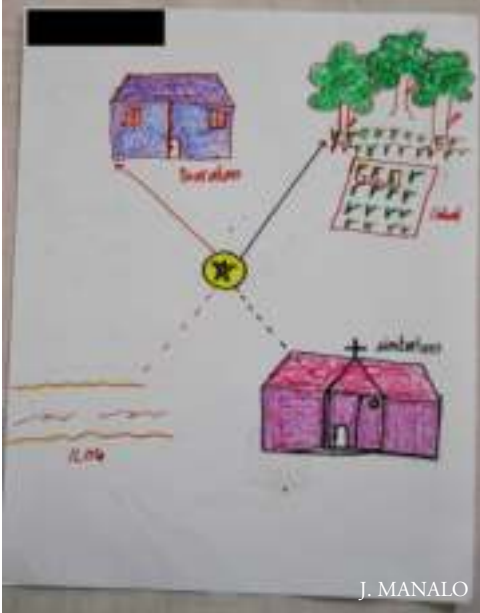
Actual field example

Some colleagues at DA-PhilRice invited me to facilitate a focus group discussion for their project in relation to integrated crop management. The output would be used to design the interventions that would be offered to the farmers. Thankfully, we have the PalayCheck System in the Philippines, which is a series of standards (Key Checks) that when followed will help the farmer achieve high yield. Each Key Check corresponds to an important operation in rice cultivation such as land preparation, and water and pest management.

What we did was to create a two-column table. On the first column were the areas of crop management and the second column was the rank of these issues. Hence, I asked the farmers to put a mark on which area of rice production do they usually have issues. It was a very productive exercise because from there it became very easy to ask follow up questions pertaining to the design of the intervention that our technical experts at DA-PhilRice would like to pursue in collaboration with the farmers.

4 Social mobility maps

By Jaime A. Manalo IV



Knowing the movement of people and usual congregation areas is an important input in any communication endeavor. In particular, this information is useful in positioning campaign materials for an advocacy. Hence, this is an important factor in strategic communication.



Materials needed

- Coupon bond
- Manila paper
- Crayons or any coloring material
- Markers
- Masking/scotch tape
- Digital recorder



How-to

1. This activity can be done either individually (use bond paper) or in groups (use Manila paper), depending on your research objective. For the purposes of this manual, let's talk about doing it in groups.
2. It is advantageous if you would have fewer than 10 people in a group to maximize discussion and to ensure participation of each member.
3. At first, participants would find the task trivial so it would be best to show an example. Give instructions like using the house as your point of reference: where do you usually go? Draw the usual congregation (grouping together) areas around the house and connect these places using thick or thin lines depending on how frequently you visit these places. If too frequent, then use thick lines; otherwise use thin lines.
4. Make sure that each participant has his/her own marker. Put the coloring materials in a place where they have equal access to.
5. When they start to draw, there will be raw discussions among them; hence, it would be best to record the conversations as these are good sources of data.
6. During the drawing exercise, there will be plenty of careless debates among participants; thus, it would be best to capture those. One of them is the fact that they usually go to different places. Just take note of these issues that may crop up and probe on them during the processing session.
7. Roam around to ensure that everyone is contributing to the output.



Tips during the process

1. Ensure that you are able to record the discussions.
2. Given the nature of the task, it is likely that people go to different places as opposed to having a unified answer. If you do this in a group, this is likely the case.
3. A way to proceed is to let someone report about the output and invite others to chime in. Let the discussion flow as fluidly as possible. No-holds-barred.
4. It is during the processing when you ask the questions on your list. It is advisable, however, that you use them sparingly to ensure that the discussions flow as they please. Only use the questions when the discussion seems going away from the objective you set for the exercise.
5. Ensure to probe each place that they draw. For example, they draw a shopping mall, ask: what do you usually do there? What are the stuff that you buy? How long do you usually stay there? Who do you usually go with? Ask about the same set of questions for each of the places that they draw.
6. This is usually a fun exercise so you may want to ensure that you maintain the fun. You can create a “*Marites*” atmosphere, so to speak.





Potential issues

1. Some participants, especially those who may not have been able to input well during the drawing session, may feel that they are not a part of the exercise. It is easy to spot them because they either are so quiet or they may be so noisy to the point of getting mad that their inputs are not well-represented in the output. If they are too quiet, ask them directly so they are given the chance to speak. Otherwise, you may have to do some damage control, but the bottomline should be to let that person speak as well so his/her inputs will be counted.
2. Some may feel that you are asking highly personal questions. A way to deal with this is to explain right from the start that this is the nature of the exercise so they will not be surprised when you start shooting “invasive” questions. You may also tell them that they have the option not to answer the questions, and withdraw from participating in the exercise.
3. If done individually, some may feel inferior of their drawing skills. This has happened several times in my practice. A way to deal with it is to tell them right from the start that the exercise is not about coming up with the most beautiful drawings. The aesthetics is secondary to content. Also, it would be good if you show various examples of different qualities so they may draw inspiration or consolation from them.





Actual field example

I used this method during my master's thesis at The University of Queensland. I was then doing a research that relates to young people's use of information and communications technologies. The age range of my research participants was 13-18 years old. We did this social mobility-mapping. It was fun. Given their age, the outputs were so colorful. My supervisor then even said that my research participants were artists! I learned a lot about the whereabouts of young people, such as what they do in computer shops (clue: there were even some astonishing revelations). The processing session was also fun. There was so much laughter as they listened to each other's stories (we did it individually). I used the outputs of the mapping to design a youth-engagement-in-agriculture initiative that would later be known as the Infomediary Campaign.

5a Photovoice

By Jaime A. Manalo IV



If you are keen on knowing how participants would like to represent issues in their community, photovoice is one method that you can use. It is a method that banks on creativity in storytelling.



Materials needed

- Camera (either a stand-alone camera or a phone camera)
- Computer/laptop
- Projector (optional)



How-to

1. Explain to the participants what would you like to find or the overall aim of the activity. For example, the aim of this activity is to know what issues surround rice cultivation in your area. Or, the aim of this activity is to know your overall views on agriculture.
2. Once the main objectives are known, ask them to bring out their respective cameras. If they do not have one, provide for them.
3. There are several ways of doing it depending on the objective. If your interest is community-wide, then send them out to take photos for a certain period of time like an hour or two. If you only have very specific cases to investigate, a 15 to 20-minute photo-taking session should be good.

4. Once they are done taking photos, ask them to load their photos in a computer, which you will provide. If they took so many photos, ask them to select at most 10 best photos that they think most respond to the objective set forth in the study.
5. By the way, you may also do this in groups.
6. After taking the photos that they think will help them respond to the objective, ask them to share the story behind those photos, that is, why did they shoot those photos in the first place.
7. Ideally, if you decide to do this individually, the number of participants must not exceed 10 for a lively exchange of ideas.



Tips during the process

1. Once the photos have been selected, ask the participants to present their photos to the group. Ask them to share stories that relate to the objective when they show the photos.
2. Ask the audience to listen intently and engage the presenter accordingly. The good thing about this method is that it invites enough trigger points for them to crosscheck each other, which is excellent insofar as data validation is concerned.

3. Be very quick in ensuring that the conversation that ensues among the presenter and the other participants answers the objectives that you set forth for this exercise. You may also join in by asking several questions that would help the presenter share more stories.
4. Wrap up the whole session by highlighting the key points raised during the storytelling session.



Potential issues

1. The participants are intimidated by the camera. A way to handle this is to have a short training first to explain to them how the camera works. Show them how easily one can capture an image using it.
2. They do not have a camera. Lend them one! Hence, it is for this reason that you cannot have too many participants. You may ask them to use a stand-alone camera or your phone camera. If the latter, do some simple demonstration on how things work. Remind them as well that they themselves should take the photos as one of the strengths of this method is seeing the issue from the perspective of the research participants; hence, their photo composition matters.

3. They took just a few photos. This may or may not be an issue as it is the processing that matters. If they could already tell stories using the photos that they have, then that should be fine.
4. They took too many photos. This is not too much of an issue although this means that you will have to spend more time facilitating the selection of the photos that they will present. It is also for this reason that there is a need to thoroughly explain to them that only several photos will be used during the processing session. From the point of view of data collection, however, this is more of an opportunity than an issue.



Actual field example

During my master's thesis, I used photovoice as one of my data collection methods. My research then explored how young people can be mobilized for agricultural endeavors. I used photovoice to investigate the views of young people in relation to their life aspirations. The purpose of which was to know their inclination or non-inclination toward living a life in the rural areas. If I remember right, I had 8-10 participants. I asked the high school students-research participants to take photos of something that would represent their aspirations in the future. I did that for 20-30 minutes. I lent them a point-and-shoot camera. After the time allocated for the photo-taking session, I asked them to load the photos they took to my laptop. They selected their 'best' photos or the ones that they felt they would be most comfortable to share in the group. The students shared their stories and the data was so rich! Some of the photos were bizarre at first that I did not comment when I first saw them. When they narrated the stories behind those photos, I was deeply impressed. An example was a plastic flower, which the student equated to love of family. Plastic represented the 'love that never dies' that ran deep in their family. Hence, because of the love, she wanted to do well in life to ensure that they could make both ends meet, which they envisioned to achieve through a life that depended or not on agriculture.

5b

Photovoice

By Marife R. De Torres



Photovoice technique is a participatory action research method that employs photographs that are taken and selected by the participants which they, later on, reflect upon through a group discussion. According to Palibroda, Krieg, Murdock, & Havelock (2009), it is a means for marginalized individuals to deepen their understanding of a community issue or concern. The Photovoice process has three main goals: (1) record and reflect one's community's strengths and concerns, (2) promote critical dialogue and knowledge about personal and community issues through large and small, and large group discussions of the captured photographs, and (3) possibly reach policy-makers (Wang, 1999).



Materials needed

- Camera (or any phone with camera features)
- Manila paper
- Markers
- Scotch tape



How-to

1. Explain the purpose of the study or the intervention to the participants. Orient them about the study and their rights. Seek their consent on your purpose to record the conversations.
2. Inform them about what Photovoice technique is and how it is used.
3. Group them depending on the general objective of your study. For example, you may group them according to their profile (e.g. mothers, fathers, children, etc.).
4. Give each group a set of the materials enumerated above. If no available camera, mobile phones with camera features can be an alternative.
5. Orient the participants on how to use the camera.
6. Provide them with a core question that will be chiefly answered through the use of a camera. Ask them to take pictures of what will best represent their answer to the core question. It can be a reflection of their perspective, views, or feelings in relation to the core question.
7. Once pictures have been taken, the facilitators will print the pictures and ask the participants to post them on the Manila paper. A group discussion follows to allow them to explain the representations of their pictures. Discussion focuses on why the photographs were chosen and what makes them meaningful. The discussion is recorded.
8. The actual exercise may vary depending on the core question and the number of participants. The first part of the activity, i.e. orientation and taking of pictures, may be done for a half day. Then the discussion follows.





Tips during the process

1. Before taking photos, ask participants to reflect first on the core question. Provide time for this activity.
2. If you will provide a camera for their use, orient them not only on how to use it but also how to take care of it. The Do's and Don'ts in using it should be clearly discussed with them.
3. Ensure that all are given adequate time and opportunity to choose the image that will best represent their idea. You may advise them to take several photos and later on decide which one “paints” their insights.
4. During the group discussion, make sure that all will be able to participate and interpret the photos that they have selected. Visual images provide a platform for a more intense and engaging reflection.
5. Make sure the recorder is on, and that you have a spare unit in case the memory runs out. Record and transcribe the discussions for the thematic analysis.
6. Synthesize the results from the activity. You may also ask the participants to share their experience in using Photovoice technique.





Potential issues

1. There are tendencies that out of excitement or curiosity in using a camera, the participants may take a series of photos that do not necessarily reflect their views or are out of context.
2. Clearly discuss during the orientation that the photos that they will take should be a representation of their answer to the core question. You may provide specific examples to guide them.
3. During the briefing, it should also be emphasized that photo quality is not important as long as the message that they would like to capture has been successfully documented.
4. In most instances, participants are reluctant to share their thoughts. It is the role of the researcher to ask follow-up questions to lead them on to expressing their insights and be comfortable in sharing them. There is always a story behind each photograph. As a researcher, you should facilitate the unfolding of that story.
5. Some are talkative and may tend to comment and provide their own interpretation of the pictures selected by other participants. Remind them from the beginning of the group discussion that all of them will be given the opportunity to discuss, hence, they should not interrupt others when it is not yet their turn.
6. Ethical approval or consent should be sought before taking pictures particularly of people or places.



Actual field example

In one of my major requirements during my Master's degree, our classmate Derek U. Alviola introduced to us this participatory method of monitoring and evaluating a program. We used this technique in Gawad Kalinga's (GK) program GK Enchanted Farm. GK is one of the biggest non-profit organizations in the Philippines that aim to improve the lives of marginalized Filipinos through innovative and sustainable mechanisms. Its GK Enchanted Farm is home to more than 70 families who were provided with livelihood opportunities such as organic farming and an array of social enterprises (e.g. ornamental plants production, food and health beverage processing, stuff toy and bag-manufacturing and furniture-designing, among many others).

Our study was the first assessment of the project. To capture and document the range of changes experienced and considered significant by the target beneficiaries after being involved in the said program, our team utilized Photovoice technique. We initially targeted representations from the different stakeholder groups (i.e., fathers, mothers, youth and children), but due to time constraints and the availability of participants, the research team managed to gather stories only from fathers, mothers, and a combined group of youth and children.

During the orientation, we discussed the core questions that will serve as their guide in taking photos. Each participant was asked to take at least three pictures that they thought were reflective of their experiences in the Farm. To guide them, a photo consent form and a photo story collection guide were distributed whereby they initially provided explanations to their chosen photographs. Each group was provided with a camera and an activity coordinator to guide them in the individual photo shoots. The camera was left to each stakeholder group for one whole morning to give them ample time in taking pictures and recording their answers in the story collection form. The next day, the stakeholder groups were separately convened for the discussion of their photos.

Among fathers, most of the photos taken included their work in the field, particularly their farm plots to represent provision of economic livelihood opportunities as one of the most significant changes that they have experienced in the GK Farm. Among mothers, the most prominent photo was a representation of “values formation” as reflected by photos of mothers doing their farm roles such as weeding, watering the plants, and tending to the farm animals while also looking after their children. Similar constructs were revealed from the photos taken by children-participants such as photos of them helping with household and farm chores.

This technique elicits a more stimulating discussion of the experiences of the participants through visual images. By allowing them to choose what would best represent their experience gives them more freedom to articulate their views. As stories unfold behind every photo taken, the technique helps capture lived experiences and deeper understanding of their conditions – i.e. what they value most.

Photos were taken by:

Maria Rowena Alcantara
Ulderico Alviola
Katrina Arianne Ebor
Camille Joy Eales
Zara Mae Estareja
Marife De Torres
Khounkham Douangphachone
Mohammad Kamrul Hassan
Minji Na

5c Photovoice

By Daniel Cruz



Photovoice is a visual participatory method that facilitates a process whereby participants capture, share, and analyze their own ways of perceiving, understanding, and transforming their environment through photography (Sutton-Brown, 2014). This method is particularly useful in bringing marginalized voices to the fore, as it creates a safe space for all participants to have equal opportunity to share their views and knowledges, breaking the constraints put forth by power imbalances existing within communities, as well as imbalances of power among community members, professionals, government officials, and policy-makers (Wang & Burris, 1997; Wang, 1999).

In this method, the photographs are used as “problematizing” tools that enable participants to analyze their own situations, deconstruct problems, ask questions, and come up with solutions, both individually and collectively, through self-reflection and dialogue (Freire, 1974, 1993; Ledwith, 2016).

Through Photovoice, community members can communicate their perceptions, knowledges, problems, and solutions to policy-makers, government officials, and experts using a vertical model of communication (Sutton-Brown, 2014; Wang & Burris, 1997). Through this method, community members can also communicate horizontally with fellow communities in a process to reflect on common problems, share local knowledges and share solutions (Sutton-Brown, 2014; Wang, 1999). Photovoice also enables community members

to analyze their environment, knowledges, issues, and possible solutions at a “hyper-local” or internal level, with their fellow community members, peers, and relatives (Quarry & Ramirez, 2009; Budig et al. 2018). In this process, photographs are used as the vehicle to develop the “critical consciousness” of the participants, which can then increase their power in decision-making and action for social and environmental change (Ledwith, 2016). Other benefits include increased social connections, strengthened skills, and social recognition (Budig et al., 2018; Sutton-Brown, 2014; Walker, 2018).

The method can be used as a tool for qualitative data gathering, social and environmental impact assessment, participatory needs assessment, storytelling, situation analysis, and also as a tool for community development and community-based natural resource management (Sutton-Brown, 2014; Wang & Burris, 1997; Wang, 1999).



Materials needed

- Cameras or mobile phones with photography function
- SD cards
- Portable printer
- Projector, screen, and computer
- Flipchart paper and markers
- Palm cards (of various colours)
- Participant Information Sheets
- Photograph consent forms
- Batteries, power cords
- Food to share



How-to

Photovoice exercises require one to three days to allow time for participants to get used to the technical aspects of the method, as well as to allow enough time for collective reflection and for the opportunity to share the outputs and analysis with target audiences (Candelo et al., 2003; Cruz, 2022; Sutton-Brown, 2014; Wang, 1999).

1. In collaboration with a group of 8 to 15 community members, select the topic, issue, or theme to be explored and analyzed (e.g.: pests, climate change, labor shortages, marginalization, gender roles in agriculture, etc.). Make sure to turn the theme into an open research question (e.g.: What is the importance of women in agriculture? How is climate change affecting our crops?, etc.) and write it down so that all participants are on the same page.

2. Provide technical hands-on training on the use/operation of camera equipment, light, composition, file transfer, editing, and printing. It is important to recognize the achievements of participants during their learning process, so that they feel comfortable with the equipment and their skills. The training must include information about ethical practices (e.g.: consent, confidentiality) and safety measures (e.g.: logistics, sensitive topics, dangerous places/people) (Sutton-Brown, 2014; Walker, 2018).
3. With the research question in mind, they will take photographs on the field, usually for a day. Depending on cameras available, photos can be taken individually or in subgroups of three. The facilitator must be available (physically or remotely) to provide needed technical assistance, and remind participants about the research question to make sure they are focused on the key theme agreed upon by the group.
4. Transfer the photos to the laptop and print them out, or share them in the laptop itself or projector. The facilitator sits with the individual or the subgroup and requests the selection of 4 to 6 photos that best capture the key theme/research question. This step adds a further layer of reflection and analysis by the participants.
5. Participants return to the main group, and share their selected photos (in a circle), explaining their relevance and meaning in connection to the key theme.



D. CRUZ



6. The practitioner facilitates their collective dialogue and analysis to make sense of the key theme and answer the research question. Here the photos act as the vehicle to “problematize” the themes and provide the visual elements to facilitate the collective analysis (Freire, 1974, 1993; Ledwith, 2016). The facilitator prompts associated questions to promote deeper layers of analysis by the participants. The ideas emerging from the collective dialogue are summarized and written on a visible place for all members to visualize, usually using colored palm cards, markers, and flipcharts (Candelo et al., 2003). The facilitator encourages the participation of all members and is constantly observing imbalances of power at play, and takes measures to ensure a balanced participation by all group members (Ledwith, 2016; Quarry & Ramirez, 2009).
7. By referring to the cards that summarize the main elements of the dialogue, the facilitator assists the participants to reach a common understanding about the key theme and encourages them to brainstorm potential solutions to the issue, and facilitates a commitment to action, along with the elaboration of an action plan (Freire, 1974, 1993; Ledwith, 2016). Other participatory tools are often used here, such as Matrix Ranking, the discussion analysis table, and the commitment star (see this manual, and also Candelo et al., 2003 for more tools).

8. Print and give certificates of completion to the participants. Provide memories of the workshop to them (including the photos selected and a summary of the findings, commitments, and action plans).
9. Organize a meeting/launch event to share the photos, analysis, commitments, and action plans with the target audience (peers, community members, policy makers, professionals, donors, etc). An extra layer of participation and analysis can be facilitated with the target audience, going through the methods of step 6.



Tips during the process

1. Make sure to use team-building exercises, energizers, and icebreakers during the workshop. This helps the participants to feel more confident and have fun while learning (Candelo et al. 2003).
2. You can combine photovoice with focus groups. In this way, the research theme can be discussed by different groups, to provide a more comprehensive understanding of the variety of perceptions and ideas about the key theme (e.g. women, men, age groups, socio-economic groups, farmers, professionals).
3. It is useful to team up young participants with elders. The young often have more exposure to tech skills, while the elders can exhaust their wisdom about their contexts under analysis.
4. The process becomes more powerful and effective if the photos and conclusions of the collective analysis are shared with peers, other communities, professionals, or policy-makers, to get an extra layer of analysis and dialogue. Organizing a sharing event increases the chances for transformative social change, because it opens the space for extended vertical and horizontal dialogue and action (Cruz, 2022; Ledwith, 2016; Quarry & Ramirez, 2009).

5. Before going to the field, make sure you have all the necessary equipment. Ask in advance whether energy/power sources are available onsite. Otherwise, make arrangements to bring your own portable battery to recharge cameras, mobile phones, laptops and printers.



Potential issues

1. The facilitator must continuously reflect on how the practices and behaviors employed truly facilitate the participation of community members. Vertical, coercive, and “banking” forms of training and education must be avoided (Freire, 1974, 1993; Ledwith, 2016). Remember that the aim of photovoice is to facilitate the voices of participants to take center stage, along with the facilitation of their own analysis directed to action.
2. Make sure to keep an eye on power imbalances at play among participants during the workshops, and take actions to balance the power dynamics throughout the process to ensure that all voices and contributions are included (Ledwith, 2016; Quarry & Ramirez, 2009). Often, certain participants will tend to dominate the conversations, or the camera, or the decisions taken on what photos to take or select. Make sure to manage these tensions gently (Candelo et al., 2003).

3. Photovoice requires time to work effectively, both technically and socially. Do not rush the process. Allow at least a full day to facilitate the workshop.
4. Photovoice is a political action, and therefore, depending on the research theme selected, participants may have to deal with political and social tensions, and even violence. In dialogue with participants, make sure to reflect on possible associated risks at the beginning of the workshop, and take precautionary and mitigation measures accordingly (Ledwith, 2016; Sutton-Brown, 2014; Wang & Burris, 1997; Wang, 1999).
5. To ensure the ownership of the photovoice method by the community and their ongoing self-empowerment, it is recommended to leave the equipment with the community, especially under the responsibility of a “community media committee”. If this is not possible, make sure to offer a channel of communication for them to receive ongoing technical support and access to equipment in case they want to continue doing photovoice or participatory video themselves (Sutton-Brown, 2014; Walker, 2018).



Actual field example

In the research project titled “Food sovereignty and the practice of transformative social change: Learning from the Navdanya and DDS movements in India” (Cruz, 2022; Cruz & van de Fliert, 2022), five photovoice sessions were conducted, including 30 participants. After providing a technical training session, cameras were lent for a period of one to two days to selected farmers and community trainers. They used the cameras to visually capture their meanings of food sovereignty and the impacts of the two-decade initiatives of the Navdanya and DDS farmer movements in terms of their own quality of life, livelihoods, biodiverse farming methods, participatory democratic practices, and empowerment. The photos were analyzed individually and collectively with farmers and community trainers in focus groups using critical pedagogy methods, where the photos served as codes to trigger discussions about the meanings and interpretations of the idea of food sovereignty and the impacts of Navdanya and DDS movements for farmers. The photos and analysis were subsequently shared with professional staff members and experts in food systems transformation for an expanded collective analysis.

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6 Windshield survey

By Jaime A. Manalo IV



The truth is that researchers do not always have the chance and time to stay long enough in their research sites to learn more about the development and social context. While it is ideal that every researcher who envisions to do social research must have some level of immersion with the community where they wish to do the study, oftentimes it is not possible because of funding or overall time requirement for the research. Windshield survey is not a substitute for doing good immersion (in my view there isn't), but this gives the researcher a chance to learn more about the community in a short span of time.



Materials needed

- Digital recorder
- Car or any vehicle (but better if four-wheeled)
- Camera
- Notebook
- Pen



H. DELA ROSA



How-to

1. For this method, it is crucial that you are able to pick a good guide. In research in agriculture, the usual guide is an agricultural extension worker. Feel free, however, to choose anyone as long as you are able to communicate the criteria to the person you are requesting the guide from (e.g. the Municipal Agriculturist). The usual criteria are that the guide must know the place well enough, and must be knowledgeable of the research territory (not necessarily of the whole research but the area of research).
2. Inside the car, the guide sits beside the driver so s/he can tell the directions. The interviewer sits at the back holding the digital recorder. The photographer sits anywhere as long as s/he has good window access.
3. As the journey progresses, the interviewer asks the guide questions, especially those that may seem trivial. It is, however, unusual for the interviewer to know which one is trivial or not as s/he is new to the place. Hence, the key is to just ask any question that may lend clarity to how the community should be understood.
4. Usually, the interviewer will ask a series of “What is that?” and ‘Why is it?’ questions. The rule is that there are no idiot questions. Such questions are the ones you don’t ask.
5. The photographer must be quick as well in taking photos. S/he may ask the driver to stop especially if there are interesting stops. This means that the photographer must also be aware of the research objectives so s/he can have the theoretical sensitivity to capture those that matter.



Potential issues

1. The guide might only show you what must be seen from his/her perspective. A way to manage this is to have more than one windshield survey. You may opt to do it in different days, with each day requesting the guide to take a different route. Or you may ask the guide some areas that are of interest to you.
2. Not enough funding to hire a research assistant to serve as the photographer. The researcher must then become the photographer. While this is not ideal, the researcher then has no choice but to work a bit harder. This will require asking the driver to do several stops along the way.
3. Not enough funding to hire a driver. The researcher becomes the driver.
4. Chance to hear stories that may be off-the-record. Given that the researcher will engage the guide in conversations, there is a high chance for sharing of many off-the-record information. Mind you, the guide can be really chatty as the conversation proceeds. As part of the ethical considerations in doing the research, the interviewer must be quick enough to spot this. The interviewer must then be sharp enough to ask if the guide would like to continue sharing the story with the recorder turned off. Or, in the transcript, those parts may be deleted, with the permission of the interviewee.



H. DELA ROSA



Actual field example

There are so many stories to tell about the use of windshield survey. It is turning out to be my preferred method. For all studies that I am leading now at PhilRice, I make it a point that we do a windshield survey because it really helps us know more about the place. As researchers with well-defined targets and usually time-pressured, this method somehow gives the team members the assurance that when we write the report, especially the recommendations, we will write it not from an ivory tower, but one that takes off from realities on the ground.

For the sake of giving an example, I first used this method during my PhD. My reviewer during my confirmation (that is the first milestone if you do a PhD by research) asked me to add a method where I could do some observations. Hence, I searched through some methods books in the library and found 'windshield survey'. My PhD thesis was on climate change adaptation among rice farmers in the Philippines. For the windshield survey, which I did in Anao, Tarlac, I asked the guide, who was an agricultural extension worker, to just tour me around Anao. I had my research assistant with me who was in charge of taking photos. In that survey, I served as the driver and the interviewer. I just placed the digital recorder somewhere near the guide and myself. We stopped at different points of interest. One of them was the fact that when you enter Anao from Nampicuan in Nueva Ecija, you will be welcomed with the view of so many goats and cows. I later found that these animals are being sold by farmers whenever there is drought to help them meet their needs in rice cultivation and those of their whole family. The whole exercise greatly enriched my data analysis and understanding of the whole research puzzle in general.

7 Historical timeline

By Jaime A. Manalo IV



H. DELA ROSA

Whenever there are new interventions by the government or by the private sector, a researcher must consider that everything does not automatically start even when the intervention begins. Every community has some history with respect to any interventions brought to them. Usually, questions abound such as why is it that this community is more equipped to deal with certain phenomena than the other? What is with this community that the other does not seem to have? More often than not, the answers to these questions could be found in looking at the history of the community in question.



Materials needed

- Manila paper or cartolina (but Manila paper better serves the purpose)
- Marker
- Masking tape



H. DELA ROSA



How-to

1. Explain the research objectives to the participants.
2. Give a cogent instruction to them such as: In the past 30 years, please try to recall the important events that happened in your village with respect to agriculture.
3. It is important that the instruction is very specific—with respect to agriculture—as surely there are many events that happen in the community.
4. Give some examples of what you are after to facilitate the inputting. You may say something like: Examples are if there had been new irrigation systems built, pests that came and wreaked havoc on your crops, typhoons, and others.
5. As they start to write on the Manila paper, roam around to ensure that everyone is inputting to the exercise. You may strike little conversations with them especially those who seem to be not participating enough.
6. Tell them that it is not important to put the exact dates; approximations will do. Usually, it turns them off when they could not recall the exact dates.
7. Ideal participants in this method are the older guys in the community so you have the richest possible data as possible.
8. This exercise is good for fewer than 10 participants. Too many will be difficult to manage, such that it might be chaotic in executing this exercise.
9. Usually, this exercise lasts for 15-20 minutes. Once done, ask one of them to present the output of the group. Using a masking tape, you may put the output on a wall, or someone may just hold it while it is being presented.



H. DELA ROSA



Tips during the process

1. Invite the non-presenting participants to engage the presenter in a discussion. You may join in to ensure that your research questions are being answered squarely.
2. Be quick in asking follow up questions as some presenters have the tendency to just read what is written on their Manila paper.
3. Be quick in pointing out potential inconsistency in the presentation. It is likely that there will be mistakes in the recall of events especially if the time of reckoning is too far away.



Potential issues

1. The participants don't want to write. This is quite rare as they are usually polite. They usually defer to the facilitator. Should this happen, a way to proceed is to write the first entry in the timeline. This usually works as people tend to not do anything because they are unsure of what they should do. Hence, giving an example may tame this confusion.
2. Poor recall of events. When this happens, it would do well to prompt your participants. Say something like "What about pests? Do you have issues here on pests? When did that start? Had there been any irrigation developments here in the past? How about weeds? Had there been new weed species in your village?"

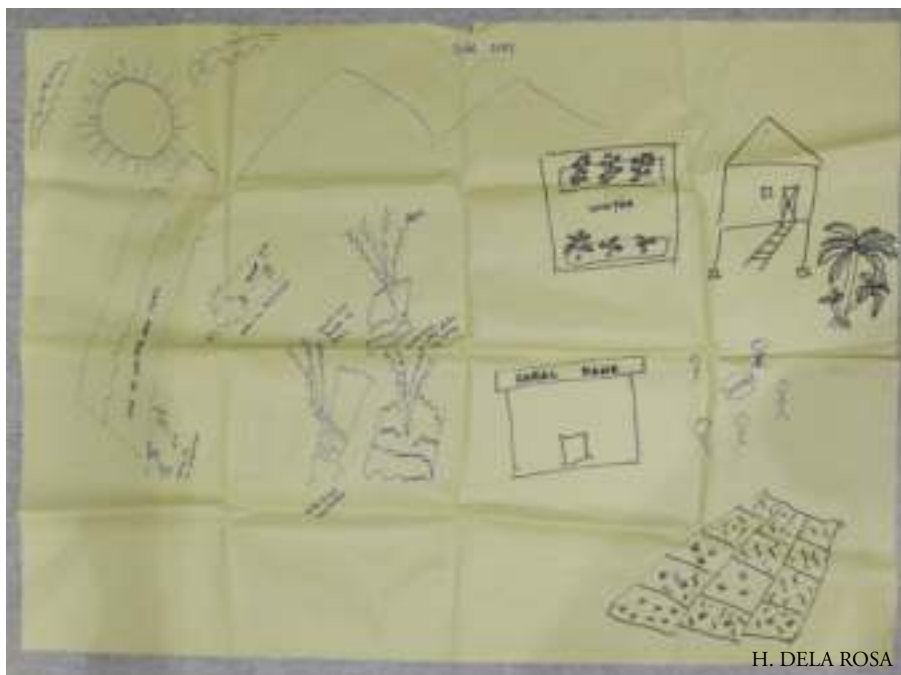


Actual field example

I have used this method several times in different projects. I had always been amazed at its capability to bring out lively stories from the members of the community. In my PhD, my research topic was on climate change adaptation among rice farmers in the Philippines. In using this method, my interest was to probe on the forms of assistance that farmers have received over the years relating to their rice cultivation. The method helped me immensely in understanding why one of my research sites was far more equipped to deal with climate change impacts than another because of the level of assistance that it has already received from the government and other sectors. The method shed light on the frequency and recency of those forms of assistance extended to them.

8 Rich pictures

By Jaime A. Manalo IV



H. DELA ROSA

If your aim is to see the unstructured picture of the situation or its complexities, rich pictures is a good method to use. It captures complexities through the individual drawings of the participants.



Materials needed

- Manila paper
- Marker
- Table with flat surface
- Masking tape



How-to

1. Explain the research objective to the participants.
2. Ideally, this exercise should be participated in by fewer than 10 farmers. More than 10 will be messy already.
3. Hand a marker to each of them.
4. Ask them to draw their response to a question.
5. The question/task must be very clear. An example is: What are your experiences of drought?
6. The drawing session usually lasts for 10-15 minutes. You need to limit the exercise to ensure that there is enough time for discussion.
7. Start a conversation with them if they feel lost at the start or in different points during the drawing.
8. Put the recorder on top of the table to record the conversations of the participants during the drawing session. The data is rich during this time.
9. When time is up, ask them to prepare for the presentation of their work. They may choose to post their drawing on a wall or someone may just hold the output during the presentation.





H. DELA ROSA



Tips during the process

1. Ask one of the participants to present the output, and the rest to listen and chime in during the discussion. You may also chime in during the discussion to ensure that your research questions are being tackled.
2. Get as much detail as possible during the presentation especially that some presenters may literally just state what is already in the drawing. The key is to look at the drawing and ask a series of “what” and “why”.
3. Also engage the others as they join in the conversation. Your task as the researcher is to carry on a lively discussion, and to ensure that each of the participants has a say on what is being discussed.



Potential issues

1. The participants refuse to draw. The usual cause of this is they feel that they do not know how to draw. To address this issue, you may tell them that it is not necessary that they come up with beautiful drawings; that stick figures are fine. Showing a sample may also work, but tell them to not copy it. You may also need to play it by ear if you will show samples because it might limit their imagination.
2. There is/are dominant participant/s that discourage others from doing their share. Talk to the ones not participating and ask them to draw anywhere on the Manila paper. Remember that the aim of this activity is for you to capture what is in their minds.



Actual field example

This is also one of my favorite methods. I learned about it during my PhD, from the *Systems Thinking* book by Ray Ison. An example that I can share from my work at PhilRice is our study on how to support farming families in Siniloan, Laguna. The project was a collaboration between PhilRice and the University of the Philippines Los Baños. We asked the farmer-participants about the challenges that they faced in their rice cultivation. Their outputs were so alive, and some turned passionate. We saw drawings of money, fertilizer bags, and droughted and flooded fields. During the processing session, the farmers lamented the surge in fertilizer prices that have pulled down their income. Their conditions were exacerbated by climate change impacts such as drought and flood. I have seen instances when farmers gave an impassioned presentation during processing sessions using this method.

9 Time transect

By Jaime A. Manalo IV



If you are interested to know how your research participants use their time, time transect is a good method to use. Examples of research studies that may need this are those that look at work distribution of farm laborers and operational research to know suitable times for training programs.



Materials needed

- Bond paper
- Crayons
- Markers
- Pencils



How-to

1. Explain the objectives of the research to the participants, preferably eight or less.
2. Seat them around a big table where they have access to the drawing materials at their center.
3. This is an individual exercise. Ask them a simple question like: How do you spend your time on weekends?
4. The drawing session usually lasts for 10-15 minutes. It needs to be strictly timed as you still need to allocate time for discussion.
5. Once time is up, ask them to prepare themselves for output presentation.



J. MANALO



Tips during the process

1. Ask the participants to show their work individually.
2. Ask the others to shoot questions to the presenter. You may also throw questions to the presenter to ensure that your research questions are being answered.
3. There is a high chance that there will be plenty of repetitions along the way. It is fine, just let them tell their stories. Repetitions are also good indication of theoretical saturation, which is important in qualitative research.



Potential issues

1. Participants refuse to draw. The usual cause of this is they feel that they do not know how to. Showing some examples might work, but play it by ear as it might limit the creativity of your research participants.
2. Being too general in their entries. Roaming around the room and having a look at what they are doing will enable you to spot if there is a need to remind them to be more specific in their entries.



Actual field example

I used this method during my master's thesis in 2010. My research then had something to do with youth involvement in agriculture. One of my interests was to know how can they be engaged in some agricultural interventions. Hence, a way to know that was to look at how they use their time. My research participants were high school students in Albay and Aurora. Their outputs were all so beautiful. I learned a lot about how young people used their time. For example, there was a proliferation of doing-nothing periods aside from relaxation time allocations. Those drawings were used as inputs in the communication plan that I developed for the project.

10 Innovation maps

By Bernardo Alayza

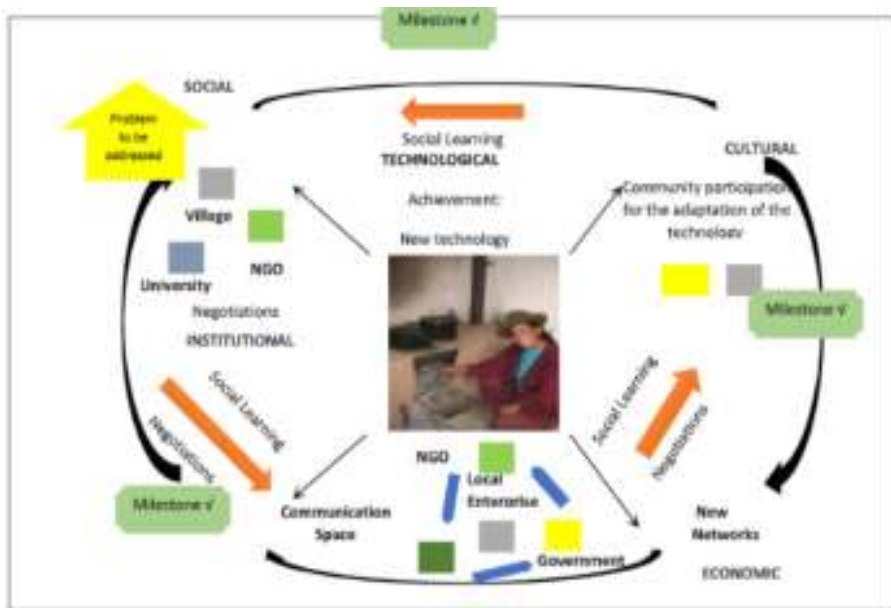


Figure 1: Innovation map sample

The innovation map is a non-synoptic, participatory and reflective methodological tool that is carried out through a conversation with the actors of an innovation process.

This tool can be resorted to by researchers or practitioners who want to analyze and discuss the nature of an innovation process, identifying all the components that contribute to or hinder its extension in order to design broad-based strategies for extending innovations.

Understanding that it is usual to conceive innovation from a linear and technology-oriented perspective, this exercise permits opening the black box of an innovation process revealing all the actors, processes, artefacts, and components that have contributed or hindered its introduction and/or extension to any market or context.

The exercise starts by drawing a technological product for its retrospective analysis, in such a way that it is possible to determine how the innovation process was configured, helping to reveal, make visible and reflect with the protagonists

on various aspects that are usually not considered. Yet, the aspects can contribute to the enhancement and/or extension of an innovation process.

This tool conceives innovation as a multidimensional and interactive process generated by the configuration of new technical, socio-cultural, and institutional aspects (Smits, 2002) in which different actors participate as a network, learn in every interaction, and negotiate for configuring innovation (Leeuwis, 2004). This tool has been applied as a part of the methodology in the thesis *Communication for inclusive innovation* (Alayza, 2017), analyzing 11 cases in rural areas of Peru. Also it has been applied in more than 30 cases of enterprises, government, and academia in the frame of the course *Marketing of Innovation* from the Master in Technology and Innovation Management and Policy program of the Pontificia Universidad Católica del Peru.



Materials needed

- Manila paper or flipcharts
- Post-it of different forms
- Crayons or any coloring materials
- Scotch tape
- Camera or video



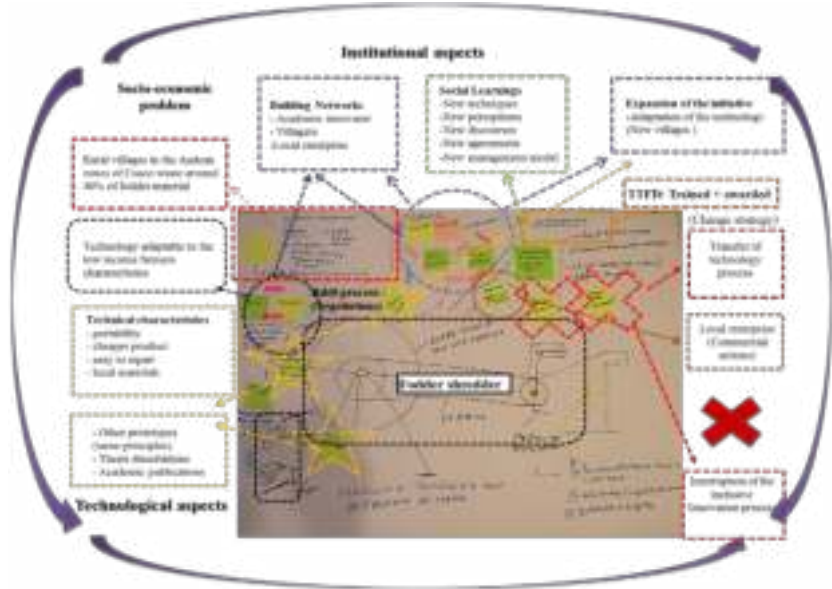


Figure 2: The pedal-operated fodder shredder



How-to

1. First, ask the participant to draw on the manila paper the technology, product, or artefact that is part of the innovation process.
2. Then, ask to explain why it has been ideated and what problem this technology was designed to solve.
3. After that, the participant writes the most important milestones of the innovation process, occupying different parts of the manila paper as a procedure.
4. In every milestone, discuss with the protagonist the organizations or actors that have intervened, how actors have learned from each other, and the negotiations that have occurred during those processes. The facilitator can add a different kind of post-it in order to identify each item.
5. After gaining a big picture of the innovation process, the facilitator or the researcher identifies and analyzes the social, political, socio-economic, institutional, and technological aspects. In doing so, highlight or point out each aspect, drawing arrows and boxes with differentiated colors (Figure 1). Another way to do it is to take a picture of the innovation map and download it and work in a PowerPoint or other similar platform, drawing different kinds of marks according to each aspect (Figure 2).
6. Finally, the researcher systematizes all the gathered information in a matrix according to the items revealed in the innovation process to then describe how the innovation occurred and how it could be enhanced or replicated (See Annex 1).



Actual field example

A research group at a local university worked together with a group of small farmers dedicated to agriculture and livestock-raising in the design and implementation of technology in the form of a pedal-operated fodder shredder for reducing the amount of waste by 40%. This technology permits a suitable treatment and cutting of the fodder, allowing it to feed cattle including cows, sheep, and llamas in a better way and obtaining better incomes by selling it.

In comparison with other similar products, the subject shredder has several features adaptable to the rural conditions of Peru. First, at a technological level, it is portable with wheels that also operate with pedals to generate energy. Also, at the economic level, it is relatively cheap, costing roughly five times less than conventional imported machines and it is easy to repair by local people. In terms of institutional arrangements, new networks have been generated to meet a local necessity, involving different actors such as researchers from a university, farmers, and local authorities who participated in different stages such as in the R&D process, the implementation and use, and the adoption of new practices in the community. At the cultural and social level, this innovation changes preconceived plans and ideas, adapting the technology to the characteristics of the potential users with new use forms.

In addition, the actors reinforced trust relationships and mutual learning communication by using a local native language (Quechua), creating not only a better environment for testing and re-constructing the technology but also for establishing a better relationship with the potential users. In sum, the adaptation of this new technology in combination with social and institutional aspects generated innovation in adapting technology to not waste local resources, improve the feed animals, and generate better incomes for small farmers.

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Annex

Annex 1: Matrix to systematize information gathered in the innovation map

INNOVATION PROCESS	[The pedal-operated fodder shredder]
Description of the technology [Technological aspects]	New prototype adapted to small farmers Started in a laboratory (university), and then became an interactive knowledge-sharing process
Networks [Actors that have created networks to configure the innovation process]	Research group (University) + villagers + local government
Social Learnings [Different learnings in the process]	New techniques to cut fodder New understandings about the roots of the problem
Negotiations [Different social conflicts that happened in the process]	Adapting the technology to the local characteristics, size, and mobility.
Co-evolutionary configuration [Technological/ Socio-economic / Socio-cultural/ Institutional / and Communication aspects]	New practices (optimization of the residues to feed animals) New agreements with village authorities New discourses about how to improve the feeding of livestock
Scaling up projection [Broad-based strategies including described aspects]	Replicate the procedure in other small farms to adapt new practices and adopt the technology.

11

Crop/farm management calendar

By Debashish Dev



<https://www.youtube.com/watch?v=tx6HC7dPvGo>

A crop calendar is a great tool that can be used to identify the cultivated crops both for commercial purposes and household consumption. It, in addition, presents a pattern of seasonal activities of production, harvesting, and selling of crops in a particular village or region. It helps to understand the workloads concerning gender, age, farm size, and income. It acts as a useful guide in looking at intersecting factors influencing farm management activities. This tool facilitates collective decision-making to identify problems and prioritize potential areas of intervention to increase productivity.



Materials needed

- A large poster paper
- A4 paper for notes
- Scales
- Ball pens
- Coloring pens
- Digital recorder



How-to

1. Before engaging with the farmers, draw a calendar on the large poster paper that indicates the months of the year in columns and space for writing crops in the rows.

Crops	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

2. After organizing the meeting, introduce yourself, and the purpose of the task to the participants. Briefly explain what the crop calendar is and the steps to be followed in the task. Explain to them their right to withdraw and abstain from being recorded.
3. The ideal number of participants in a group is 5 to 10. If it is a heterogenous group, try to have equal representation per category.
4. Ask the group to discuss and enlist the crops they grow in a year in the provided A4 paper, both for commercial purposes and for household consumption.
5. Again provide a separate A4 paper and ask them to write the various farm management activities they carried out for a crop.
6. Provide them with the large poster paper that has a calendar drawn already. Ask them to write the names of the crops on the left-hand column, one row for each crop.
7. Ask them to indicate with lines within the crop calendar when the various farm management activities are carried out for each crop. If the crop is grown multiple times a year, use different colors for each crop season. Advise to use different types of lines to denote the intensity and frequency of activities. For example, a continuous activity is presented by a solid straight line, intermittent activities are presented by a broken straight line, and a wavy line indicates irregular activities. Again, a red color line may be used to indicate activities that require extra caution, a black line for highly intense activities, and a blue line for optional activities.
8. Ask them to provide symbols indicating who contributes to performing certain tasks. Discuss the symbol they collectively agree to use. For example, a symbol for female tasks, a symbol for male tasks, and a symbol for joint tasks. You can assign different symbols to indicate different attributes of the participants.

Similarly, symbols can be provided for indicating the purpose of growing that crop, commercial or household consumption or others.

9. After completing the calendar denoting activities for each crop, let the participants discuss as a group to determine what they have found significant from the overview of their cropping pattern according to seasons.
10. Ask someone from the group to summarize and present the crop calendar. Open the floor to them to ask questions and discuss the summary.
11. On completion, let them brainstorm for a few minutes to identify any existing and potential problems with their farm management activities and prioritize discussion on finding possible solutions to minimize those problems. Try to keep records of this step.
12. As a facilitator, work as a resource person in the group to express relevant facts, views, and experiences as a contribution to the discussion when requested.
13. During the group activity, oversee if everyone is getting the opportunity to contribute to the discussion. Try to engage in the discussion by becoming a part of the group to initiate a conversation with the participants not contributing adequately.



Tips during the process

When the calendar is being created, encourage the participants to debate the intensity of the farm management tasks and who carries out certain tasks. Be very careful to nullify the domination of particular group members in the discussion. Engage in the group discussion and create spaces for those not getting the opportunities to participate. Try to be careful in engaging in the discussion with probing questions such as:

- Who are the members in their households, and is everyone being considered in the discussion on task assignments?
- Are women being less represented in terms of their work or vice-versa?
- Is every farm management activity considered in the discussion?
- Is there any scope to break down a management activity that seems too broad, for example, pest management?

Take permission from the group to record the discussion session, either using a video or audio recorder. If only audio is possible, concentrate on recording steps 10 and 11.

If some participants are illiterate or are unwilling to write and draw on the poster paper, you can help them in presenting the output of their discussion in the crop calendar.



Actual field example

We have used this tool to learn about the relative work distribution of the farming household between commercial cultivation and household consumption cultivation in Bangladesh. It provided us with great insights into the gender-specific distribution of farm management responsibilities. I have used this tool multiple times and the findings were significant. In one of the studies, we found that women contribute exclusively to the harvesting of crops such as corn, cauliflower, cabbage, and mustard, which requires a few extra steps to process the crops for selling. In addition, the amount of time women give to cultivation for household consumption is comparatively significant to men. It was a good exercise because during the discussion we observed that a few men were surprised to see the overall workload that women carry in farm management activities. It helped us to provide the local extension service providers to concentrate on disseminating household consumption cultivation-specific advocacy to sensitize men about the work distribution that is required to minimize the load for women.

12 Participatory mapping of climate change risks and indigenous adaptation plans

By Bui Tan Yen



CCAFS SOUTHEAST ASIA

Participatory mapping, or mapping that considers both scientific knowledge and experiences of the local communities, has been considered since the 1970s. This methodology recognizes the contribution of communities to make decisions for their own locality. It is broadly applied in natural resources management and in many other initiatives on zero hunger, poverty reduction, education, husbandry, and security mapping, among others. The participatory mapping methodology can be applied to map climate risks and explore indigenous adaptation plans. The experience and practical knowledge of local stakeholders are crucial in defining the scope and impact levels of climate risks. Local knowledge is also important in selecting the context-specific adaptation measures, considering natural resources, infrastructure, and practical management and production activities of the locality. Outputs of this work can be used to support local authorities to manage and organize agriculture production under increasing impacts of climate change.



Materials needed

- Base maps (topographic or land-use map) printed at A0 size
- Transparent plastic films that are of the same size as the base map
- Manila paper
- Markers (erasable)
- Crayons or any coloring materials



How-to

1. Conduct a Focus Group Discussion (FGD) with 5-10 participants, who are familiar with agriculture production in the targeted area.
2. Get familiar with the map to help participants to be familiar with it, too. The facilitator may ask them to check the names of places and prominent structures. Time needed is 15 to 30 minutes.
3. Discuss and define the extent of climate-related risks. This includes confirmation of participants on the crop seasons and potential risks. The extent of each risk will be determined separately. Results can be presented in a tabular format showing crop season, potential risks, and extent of impact (i.e. lightly or heavily affected). To map each risk in a crop season, follow the steps below:
 - a. Temporarily bind the film on the paper map.
 - b. Use a blue pen to draw the boundaries of the risk-prone polygons and a red pen to write the level of the risk. Notes can be written in the margins of the maps.
 - c. Once completed, take pictures of the result.
4. Propose adaptation plans. Identify potential plans for each risk-prone polygon based on specific bio-physical factors (topography, infrastructure, cropping system, etc.). Follow the steps below to match the risk with adaptation plans:
 - a. Use output of previous task.
 - b. Use a blue pen to write current land use and cropping calendar on each risk-prone polygon, and a red pen to write most applicable adaptation plans.
 - c. Once completed, take pictures of the result.
5. Verify the output maps including defined risks and associated adaptation plans with all members of the meeting.



Tips during the process

1. In the FGD, collected information depends heavily on the perceptions, qualifications, experiences, and expertise of participants. Therefore, they should be local officers who have good experience and knowledge about agriculture, irrigation, natural resources, and environment of the target area.
2. In the FGD, it is common that some members tend to dominate, overwhelm others, and lead the discussion according to their personal viewpoints. This can lead to biased results. Thus, the discussion should be facilitated by an experienced facilitator. At the end of the discussion, the facilitator should wrap up the entire discussion and highlight the points agreed upon by the members.
3. Before developing adaptation plans, the facilitator should summarize insights of previous discussions on potential risks and risk-prone areas. This will help participants to have an overview of the work and a more organized information based on the discussion.
4. To prioritize adaptation plans, the following criteria may be employed: (1) feasibility, (2) affordability, i.e. low investment cost, and (3) ease of implementation
5. When taking picture of maps with transparent film layer, it is recommended to use natural light, do not use camera flash to avoid light reflection that may blur details of the map.
6. Short codes or symbols of risk level and adaptation plans should be used to write on the map to avoid hiding map details.
7. The films should not be erased before taking photos of the drawing and related notes.



Potential issues

1. This participatory mapping is only a support tool to engage relevant stakeholders in identifying climate-risks and indigenous adaptation plans. It is not a tool for climate-risk simulation or generation of adaptation scenarios.
2. Participatory identification of risk-prone regions and adaptation plans are mainly based on the personal understanding of the participants. Their personal perception and understanding may be different. Therefore, refining process may need to be done several times with local stakeholders to ensure agreement on the results.

3. The level of climate risks often changes depending on the variability of climate, cropping systems, infrastructure, and land-use purposes. Thus, there is no fixed long-term adaptation plan.
4. Maps of climate-risks and adaptation plans should be updated whenever dependent factors change.



Actual field example

This example shows adaptation plans for drought-salinity risk in rice production of Tra Vinh province in the Mekong River Delta of Vietnam. The non-structural measures recommended for the province include changing of cropping system and calendar. These solutions are suitable to the existing infrastructure, financial resources, management mechanism, and staffs' capacity of the province:

- The rice production areas in the northern part of the province (II and III) include Cau Ke, Tieu Can, and Cang Long districts with low risk of drought-salinity. The triple rice is maintained but sowing date of the Winter-Spring season is moved earlier in November.
- Adaptation plan for the rice production areas in the southern coast (I) under high drought-salinity risk is to shift from triple to double-rice system (Summer-Autumn and Autumn-Winter).

Reference

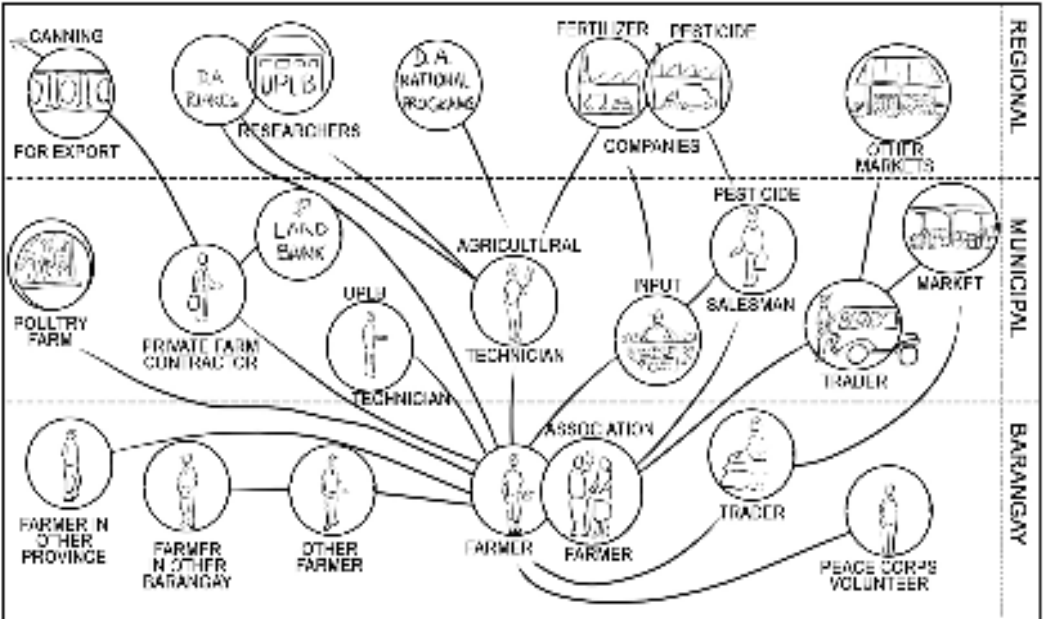
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13

Participatory rapid appraisal of farmers' agricultural knowledge and communication systems

By Ricardo Ramirez

Understanding how farmers are linked to communication networks is the essence of this study, which took place in the Philippines in November and December 1993.



Linkage map prepared with the farmers of Barangay Mamala, Region IV, the Philippines

Rationale

Farmers communicate with multiple sources of information to shape and enrich their knowledge base. Indeed, the evolution of their farming practices is influenced as much by changes in the environment and the marketplace, as it is by the information and knowledge that flows into a farming society. Understanding the patterns of communication enhances decision-making for farmers, field workers, and municipal authorities.

*The study was possible through a United Nations Development Programme (UNDP)-funded project, in collaboration with Philippine Council for Agriculture, Forestry and Natural Resources Research and Development. A full report on this case study is available through the Development Support Communication Branch, Information Division, Food and Agriculture Organization (FAO), Viale delle Terme di Caracalla, 00100 Rome, Italy.

*Reprinted with permission from FAO.

Objectives of this Study

1. To develop a rapid diagnostic approach for identifying and assessing the strengths and weaknesses of a given agricultural knowledge and communication system, in order to be able to plan the interventions needed for its improvement.
2. To shed light on the principal linkages between - and among - farmers, technology transfer workers, researchers, policy-makers, and other actors in the two sites where the approach was tested.
3. To recommend ways to strengthen the municipal and provincial capacity to identify and enhance two-way linkages in technology identification, generation, and transfer activities.

The Approach

1. A multi-disciplinary team developed a participatory approach to map the communication networks, which exist in an agricultural system and to identify the main actors, which play a role in shaping agricultural development.

The steps in the approach are:

- study goals are presented to a farmer group
- farmers draw a community map and identify the major products/enterprises in farming system
- farmers rank the enterprises
- farmers describe the major changes for each enterprise in the past 10 years, identifying the “actors” responsible for each major change;
- the research team and farmer group prepare the linkage map together;
- farmers discuss and verify the map;
- the research team follows up on “leads” by interviewing the major actors identified by farmers; (the above steps can be repeated with some of actors in addition to using semi-structured interviews);
- major linkages are analysed on the basis of communication criteria (awareness of actors’ functions, relevance, timeliness and accessibility of actors’ services, use of/access to communication media, control over linkage).

Lessons Learned

Revealing functional linkages and patterns of control

Mapping linkages in a knowledge system uncovers the mechanisms, which are functional to the exchange of information: the demands and the supply. A matrix was developed for evaluating the performance of each major linkage identified; it is a first step towards the systematic analysis of linkages. The most important criteria for evaluating linkages refers to the control of the linkage. For rural development programmes, which target poverty alleviation, this criteria is of fundamental importance as it reveals who is being served by a linkage.

Rethinking the role of the agricultural technician

This study provides ample evidence for the need for a new role for the municipal agricultural technicians (former extension workers). The farmers proposed a shift in functions. The ATs are committed workers who are effective when facilitating rather than instructing; their professional aspirations, and the farmers' needs call for this new role.



A management tool for the Local Government Units

For the elected Municipal mayors, the approach provides a tool to assess farmers' needs, identify farmer networks, and seek out those actors with whom to strike agreements for collaboration. The municipal agricultural officers (MAOs) and the mayors will be best equipped to negotiate with private and public institutions if and when they have a grasp of the main agricultural needs, resources and patterns of information demand and supply. For the mayors and the MAOs, the approach is a management tool.



LINKAGE ANALYSIS MATRIX CRITERIA FOR ASSESSING PERFORMANCE

Site: Barangay Mamala

LINKAGE	AWARENESS OF OTHER ACTOR'S FUNCTION	RELEVANCE OF OTHER ACTOR'S SERVICE	TIMELINESS OF OTHER ACTOR'S SERVICE	ACCESSIBILITY TO OTHER ACTOR'S SERVICE	COMMUNICATION MEDIUM THROUGH WHICH LINK IS MEDIATED	LINKAGE CONTROL	REMARKS
 <p>Farmer Farmer (Linkage outcome: seed variety exchange)</p>	Empathy: sharing same predicament	High	Regular contact	Fully accessible	Oral; demonstration	Equally shared by both actors	Effective link between two actors who share same reality; a linkage with unexploited potential
 <p>Farmer AT: Agricultural Technician (Extension worker)</p>	F is aware that AT's function is not to open his influence; aware that AT lacks expertise in most topics	F has experimented but rejected the recommendation; the service is therefore considered to be of limited relevance	F receive info advice w/o timely supply of technology or inputs. At times these become available one year later	Irregular AT's access to farmer is irregular	F describes AT's message delivery as traditional (black-board lecturer) w/o printed materials	F has no control	Very little impact in terms of technology transfer; Sometimes useful impact in enhancing F's organization (As above)
 <p>(Linkage outcome: Linked dissemination of technology; some support to F organization)</p>	AT only partially aware of F's strengths and needs	AT does not perceive F knowledge as worthy; AT has no training to diagnose; assess needs w/the participation of F's	AT plans visits as per instructions and schedules agreed w/ the M.A.O. AT has 6-7 barangays to visit and lacks funds for travel	AT's access to farmer is irregular	AT lectures but does not diagnose or learn from F	AT controls although under directives handed down from M.A.O. (institutional control)	

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Featured project

FIESTA celebrations

By Paul Jersey G. Leron

Rose Anne M. Aya

Marita A. Carlos



PJ. LERON

This featured project shows how participatory approaches are embedded in a larger project, such as the FIESTA or the Farms and Industry Encounters through the Science and Technology Agenda by the Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development (PCAARRD) of the Department of Science and Technology (DOST).

Social gatherings such as fiesta celebrations are potential promotion platforms to engage the public through positive interactions between the technology innovators (researchers) and adopters (business sector). Traditional Filipino celebrations or festivities offer many potentials for the successful transfer of science and technology (S&T)-based technologies and innovations to farmers, entrepreneurs, and other adopters.

FIESTA is among the technology promotion modalities to push mature agricultural technologies to private investors and adopters who would own small or medium enterprises. In a nutshell, FIESTA adopts the traditional Filipino celebrations or festivities as a venue for a successful encounter between the technology generator, mostly government and the private investors and entrepreneurs to effect the transfer of technologies and innovations.



Key Actors and their Role

- Department of Science & Technology-Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development - provides the overall framework for strategic research and development (R&D) to generate outputs and R&D results utilization, which includes technology transfer and promotion using various communication platforms. It also provides funds and the essential technical assistance.
- Local institutions (regional R&D consortia and their respective member institutions), which are the implementers of government-funded R&D and generators of technologies. They also serve as promoters of R&D results.
- Regional science communication coordinators - focal persons from the regional R&D consortia who package and implement the FIESTA projects in coordination and collaboration with the researchers/innovators, adopters (entrepreneurs, farmers, and fisher folks), and public and private institutions (local government, universities and colleges, R&D institutions).

- Technology innovators/generators - they are farmer-scientists, researchers, and/or innovators of technology and products.
- Adopters - are the investors and entrepreneurs who are willing to adopt the R&D results and who can gain profits and benefits from the technologies and innovations.



How-to

The FIESTA in general involves (1) identification of technologies to be promoted; (2) planning, execution, and monitoring of FIESTA as a multi-agency technology promotion platform; (3) communication capacity building for the FIESTA team members. Each component involves participatory approaches, from identifying and prioritizing the technologies, technical skills needed, planning the implementation and monitoring, and assessing the success of the project.

The regional R&D consortia, together with their CMI, deliberate on the technologies and theme of the FIESTA, identify their roles in the implementation and assess the needed skills of the implementing partners. These serve as feedback and likewise as the basis of the DOST-PCAARRD for strategic planning and resource allocation for its communication initiatives.

On the other hand, planning the implementation of FIESTA involves specifically the regional science communication and the technology transfer coordinators and the concerned CMIs composed of SUCs and R&D institutions, non-government agencies, and LGUs. They also lay out the parameters for monitoring and assessing the conduct of the FIESTA. The plan eventually becomes a FIESTA project proposal, for review and evaluation at DOST-PCAARRD. The review and evaluation involves the communication team and the concerned experts from the technical research divisions.

During the implementation and monitoring of the FIESTA, DOST-PCAARRD, specifically its communication team and subject matter experts, participate to observe and provide feedback regarding the set component activities of the project such as the opening and closing program, exhibits, technology-to-people press conference, fora, technology pitching, traditional/social media promotion, and ancillary activities/contests. The FIESTA team monitors the participation of captured audience, adopters



and likewise the observable gains from the project such as sales and orders of products, and signed material transfer agreements and term sheets for the featured technologies. Said information is forwarded to DOST-PCAARRD in the form of project terminal and event documentation report for further assessment and continual development of the FIESTA as a technology promotion and commercialization platform.

A. Identification of Technologies and Training Needs of the FIESTA team

1. Convene and orient the regional science communication coordinators from the different regional R&D consortia regarding the framework of Farm and Industry Encounters through the Science and Technology Agenda (FIESTA) as well as its components for promoting and commercializing technologies and innovations.
2. Explain the role of DOST-PCAARRD and the regional R&D consortia in planning and organizing the FIESTA projects.
3. Assess, design, and provide appropriate communication training programs for the regional science communication coordinators.
4. Conduct FIESTA project proposal-packaging training and workshop involving the regional science communication coordinators.
5. Package FIESTA project proposals for possible financial and technical support.



DOST-PCAARRD

Implementation of FIESTA Projects

1. Develop the key message(s) and communication plan for the approved FIESTA projects.
2. Identify local and national media, influencers, potential adopters/takers of the featured technologies.
3. Identify the communication channels, components (e.g., fora/webinars, technology demonstrations, media conferences, exhibits, cultural and other ancillary activities of the FIESTA project.
4. Produce and disseminate IEC (e.g., magazines, flyers, posters), promotions and other collateral materials for the FIESTA project.
5. Post-project technology commercialization and deployment monitoring.



Monitoring and Assessing the Success of the FIESTA Project Conducted

1. The FIESTA projects are assessed on the following success indicators
 - Number of participants and attendees of the different components of the FIESTA project
 - Audience reached through the social media;
 - number of IEC materials produced and disseminated;
 - Technologies deployed and/or commercialized as indicated by the signed sheets/MOA with potential investors/adopters
 - Customer satisfaction feedback (CSF)
2. Implementers of the FIESTA projects generate the following reports:
 - Project documentation/narrative and analysis report;
 - Budget utilization and financial reports of the FIESTA project;
 - Social media and media analytics;
 - CSF analysis report



Tips during the process

1. Assign a team for each component of the FIESTA project. The team shall be responsible for the monitoring and documentation of the planned activities for each component.
2. Make sure to have a checklist of deliverables and activities of each FIESTA component based on the work plan and/or schedule.
3. Prepare risk and contingency plans for each component.
4. Validate and confirm the participation of the invited target audience of the FIESTA project.



Potential issues

1. Scope creeping. Participating institutions may tend to include as many technologies as possible, which may lead to lack of focus in terms of messaging and campaign. As such, prioritization of technologies must be done by the proponents.
2. Proponents lack the confidence to design and implement a campaign using the FIESTA framework. Capacity development is provided to the proponents to equip them with the technical knowledge and skills.



Actual field example

Local celebrations through the DOST-PCAARRD FIESTA projects with the regional R&D consortia have been effective in promoting agricultural technology, innovation, and information, in the national and regional levels. As of 2022, a total of 44 FIESTAs (39 regional and 5 collaborative or cluster FIESTAs) have been conducted in the various provinces of the country since its inception in 2011. Technologies and innovations, machineries, and products promoted through the FIESTAs were on regional banner commodities such as mango, muscovado (sugar cane), coffee, durian, peanut, goat, native chicken, banana, sardines, seaweeds, root crops, sweet potato, abaca, and coconut. These FIESTA projects were designed and implemented by the Regional R&D Consortia and their member-agencies such as state universities and colleges, local government units, and concerned private enterprises. Through FIESTAs, technology adopters such as farmers and fisherfolk, investors and entrepreneurs, researchers, and others gathered together to disseminate and catalyze technology transfer and commercialization. The whole event, led by the regional consortia, gained the needed appreciation both by the target and general audiences.

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Field Notes

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