

Guide for Impact Assessment of Agro-Climate Information Services

Working Paper No. 242

CGIAR Research Program on Climate Change,
Agriculture and Food Security (CCAFS)

Elisabeth Simelton
Johanna Gammelgaard
Tam Thi Le



RESEARCH PROGRAM ON
**Climate Change,
Agriculture and
Food Security**



Working Paper

Guide for Impact Assessment of Agro-Climate Information Services

Working Paper No. 242

CGIAR Research Program on Climate Change,
Agriculture and Food Security (CCAFS)

Elisabeth Simelton
Johanna Gammelgaard
Tam Thi Le

Correct citation:

Simelton E, Gammelgaard J, Le TT. 2018. Guide for impact assessment of agro-climate information services. CCAFS Working Paper no. 242. Wageningen, the Netherlands: CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS). Available online at: www.ccafs.cgiar.org

Titles in this Working Paper series aim to disseminate interim climate change, agriculture and food security research and practices and stimulate feedback from the scientific community.

The CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) is a strategic partnership of CGIAR and Future Earth, led by the International Center for Tropical Agriculture (CIAT). The Program is carried out with funding by CGIAR Fund Donors, Australia (ACIAR), Ireland (Irish Aid), Netherlands (Ministry of Foreign Affairs), New Zealand Ministry of Foreign Affairs & Trade; Switzerland (SDC); Thailand; The UK Government (UK Aid); USA (USAID); The European Union (EU); and with technical support from The International Fund for Agricultural Development (IFAD). For more information, please visit <https://ccafs.cgiar.org/donors>.

Contact:

CCAFS Program Management Unit, Wageningen University & Research, Lumen building, Droevendaalsesteeg 3a, 6708 PB Wageningen, the Netherlands. Email: ccaafs@cgiar.org

Creative Commons License



This Working Paper is licensed under a Creative Commons Attribution – NonCommercial–NoDerivs 3.0 Unported License.

Articles appearing in this publication may be freely quoted and reproduced provided the source is acknowledged. No use of this publication may be made for resale or other commercial purposes.

© 2018 CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS). CCAFS Working Paper no. 242

Photos: Le Thi Tam

DISCLAIMER:

This Working Paper has been prepared as an output under the CCAFS program and has not been peer-reviewed. Any opinions stated herein are those of the author(s) and do not necessarily reflect the policies or opinions of CCAFS, donor agencies, or partners.

All images remain the sole property of their source and may not be used for any purpose without written permission of the source.

Abstract

This is a guideline for a rapid evaluation of agro-climate information systems. The questionnaire serves to evaluate project impacts and specific aspects of the climate service in need of improvements before scaling and is designed to provide both quantitative and qualitative response data. The guideline describes the process for data collection and data analysis and provides some preliminary results from a minor pilot survey in My Loi Climate-Smart Village in northcentral Vietnam. Two types of questionnaires are presented. The longer questionnaire is designed to take one hour at most and involves individual and focus group discussion with participatory rating and ranking exercises, while the shorter one takes approximately 15-20 minutes and is considered only for individual responses. Both can easily be adapted for illiterate respondents.

Keywords

Climate-smart agriculture (CSA); evaluation; participatory tool; agro-advisory; climate services

About the authors

Elisabeth Simelton holds a PhD in Geography and is a climate change scientist and CCAFS project leader at the World Agroforestry Centre (ICRAF) Vietnam, and ACIS project manager. She initiated the development of the questionnaire and completed the report. Email: E.Simelton@cgiar.org

Johanna Gammelgaard holds an MSc. in Business and Development Studies and had an internship at ICRAF Vietnam in 2018. She developed two questionnaires, piloted the main questionnaire and initiated the report. Email: johannaga0103@gmail.com

Tam Thi Le holds an MSc in Agroforestry and is a research assistant for ICRAF Vietnam. She provided background orientation, assisted in the field testing of the questionnaire and complemented information. Email: L.Tam@cgiar.org

Acknowledgements

The authors would wish to thank Hoa Dinh Le and Farmers' Association Ha Tinh for kindly assisting the team while piloting the survey in the field. Ngoc Anh Nu To translated for Ms Gammelgaard. Furthermore, we are grateful for constructive feedback on the questionnaire from Tatiana Gumocio, Erik Junge Madsen and the CARE teams in Laos, Cambodia and Vietnam.

Ms Gammelgaard was partly funded through ICRAFs Resource Mobilisation Grants.

ACIS was funded through the CGIAR Research Program CCAFS Flagship project 48.

Contents

| | |
|---|----|
| Abstract | 4 |
| Keywords | 4 |
| About the authors | 5 |
| Acknowledgements | 6 |
| Contents | 7 |
| Acronyms | 8 |
| Introduction | 9 |
| 1. Methodology | 11 |
| 1.1 Establish the purpose of the evaluation | 11 |
| 1.2 The questionnaire | 13 |
| 1.3 Recording the responses | 13 |
| 1.4 The pilot survey | 15 |
| 2. Guideline for data collection | 20 |
| 2.1 Preparations | 20 |
| 2.2 The interview | 21 |
| 3 Guideline for data analysis and preliminary results | 24 |
| 3.1 Quantitative assessment of rating (Questions 1-17) | 24 |
| 3.2 Analysis of ranking results (questions 26-27) | 24 |
| 3.3 Qualitative cost-benefit analysis of rating results (Question 1-17) | 26 |
| 3.4 Gendered comparisons | 28 |
| 3.5 Qualitative summary of statements | 29 |
| 4. Lessons learned | 31 |
| 4.1 Reflections on the approach | 31 |
| 4.2 Key preliminary results | 31 |
| Appendix 1 – The printout table | 33 |
| Appendix 2 – The shortcut questionnaire | 34 |
| References | 35 |

Acronyms

| | |
|------|---|
| ACIS | Agro-climate information service for women and ethnic minorities, the project |
| CSA | Climate-smart agriculture |
| CSV | Climate-smart village |
| PSP | Participatory Scenario Planning |

Introduction

Climate services can be referred as the value-chain of “production, translation, transfer, and use of climate knowledge and information for climate-informed decision making”¹. The actionability (Tall, Jay et al. 2012, Simelton, Coulier et al. 2018) of these services depend on a range of factors: the availability of, and access to, timely, understandable, and useful climate information. Limited actionability may be ascribed as gaps and inefficiencies between the steps in this value-chain.

The Agro-Climate Information Services (ACIS) project is implemented in Vietnam, Laos, and Cambodia from 2015 to 2018. As in many places, the existing climate service value chain was characterised by actors and services that function separately and follow a top-down supply-driven flow. Without the feedback from end-users (i.e. farmers), little was known about their use of and needs for weather forecasts and agro-advisories. From these challenges, the baseline studies in the three countries revealed several limitations on actionability (Simelton, Coulier et al. 2018) and identified opportunities to incorporate local knowledge into the agro-climate advisories.

Specifically, to address these shortcomings, the ACIS project was designed to support *producers and translators of climate services* who downscale seasonal weather forecasts and integrate the users into the translation and transfer stages. These were achieved by focusing on the *three main user groups of climate services*: (1) public planners with different intermediate functions, such as translating climate information into plans or recommendations, (2) advisors who provide extension service and may translate and transfer (communicate) climate information to (3) end users, which include female and male smallholder farmers whose decisions may be based on none or a range of climate services sources, and who own diverse farming systems, for which there are no inclusive forecast apps. The climate service value chain actors were connected via participatory scenario planning (PSP) workshops, where ‘champion farmers’ and agricultural advisors translated the forecasts and utilized available scientific and local knowledge to develop advisories.

Emerging results from central Vietnam show that the feedback of the farmers helped meteorologists evaluate their seasonal forecasts and that various formats of farming advice reach farmers and help them use resources more efficiently. For example, aside

¹ Climate Services Partnership <http://www.climate-services.org/>

from the conventional loud speaker systems and paper bulletins on information boards, mobile phone messages were sent to farmers in northern Vietnam and Laos, and street theatres served as platforms to transfer information to illiterate farmers in Cambodia.

As the project comes to an end, we developed a participatory rapid assessment tool that was piloted in My Loi Climate-Smart Village (CSV) in Central Vietnam. The criteria for the assessment tool (questionnaire) were:

- I. that it is fast and easy to respond to (in our experience, one hour is an effective length) while also applicable for illiterate farmers;
- II. that it enables quantitative *and* qualitative results; that questions can be responded both individually and in groups, so individual records can be converted into quantitative information and used for group discussions for qualitative information. Such approach verifies group and individual responses. Consequently, the group settings can be homogeneous based on some criteria of interest and can be compared by gender, ethnicity, or other types of user groups, among others;
- III. that the findings serve both for evaluation and scaling purposes.
 - a. As an evaluation tool of the climate service itself, it would determine areas in need of improvement;
 - b. As a project evaluation tool, it would look for positive and negative outcomes before and after the project was implemented.
 - c. For scaling potential, it would identify limitations in need of further testing before rolling out. To evaluate its co-investment and scaling opportunities, the assessment tool would be designed to capture the main positive and negative outcomes, which could be converted into a qualitative cost-benefit analysis.

Lastly, our intention was to develop an assessment tool that, after piloting and minor modifications, would be applicable at least in the remaining ACIS project sites.

In this report, we present the (1) methodology with an introduction to the questionnaire and some principles of its design, a brief description of the pilot study, and some considerations during the development of the questionnaire, (2) a guideline for facilitators for data collection, (3) a guideline for the analysis of the results, and (4) lessons learned. Preliminary results are shown in chapters 3 and 4. Appendix 1 has

the printout table of the tested questionnaire; Appendix 2 a shortened, untested version of the questionnaire.

1. Methodology

1.1. Establish the purpose of the evaluation

An evaluation should indicate the reach and uptake of agro-advisories, several information about user groups, and the actionability of the service before scaling. The following type of evaluations are possible.

- I. **Reach and uptake of climate service.** To estimate the uptake of the interventions in focus for the evaluation, one can approach a representative number of random people in a village, show the agro-advisory and ask one or two short questions: (1) Have you seen this advice for agriculture? (2) If yes, have you used it? If time allows, the full or selected parts from the questionnaire can be done.

These two questions may also be used as sampling strategy for the focus group discussion for external evaluators. If 43 out of 100 random people in a village answered ‘yes’ to question 1, and 20 of them answered ‘yes’ if they use it, we can infer that the advisory reached 43% of the villagers, while the uptake was 20% of the villagers (or about half of those reached).

- II. **Users of climate services.** By comparing the answers provided by direct and indirect users, we can disclose to what degree information or understanding is lost between the production and transfer of climate services. If only direct users with access to weather forecast information translate it and share the agro-advisory (PSP-members) and report various benefits that indirect users (non-PSP members) do not report, we may conclude gaps in the actionability of the agro-advisory. The next task then is to find out the root cause of the gap, which could be issues in the modes and formats for transferring climate services, the demand or capacity of the indirect users to understand or the use of the information.
- III. **The actionability of the climate service (tool, product).** The evaluation may be used to review aspects of the climate service in need of improvements. In this case, the attention is geared towards the aspects of the climate service that worked (positive outcomes, i.e. benefits) or did not (negative outcomes, i.e. costs) as perceived by the users. This can be

accomplished by searching for concrete examples in the group discussions. Here, the ranking shows the aspects that brought the most impact on the users' livelihoods, which serves as a strong argument to promote climate services.

In the case of My Loi CSV, the essential contributions of the climate services for the direct users were (i) the improved timing of harvesting and/or planting, (ii) the knowledge sharing through the PSP, and (iii) the ability to choose appropriate crop species. Moreover, while the impact on 'labour needs' scored positively in the rating session, i.e., that the climate service helped to use farm labour more efficiently (Table 5, benefit score = 13/13), none of the respondents prioritized this among their top 3 impacts (total rank score = 0). We concluded that the climate service promoted an efficient use of resources (i.e., a benefit), which included the use of the traditional production components inputs, labor, and land allocation, as well as use of social learning and local knowledge processes.

IV. The scaling potential. From a scaling perspective, the questionnaire and focus group discussions (1) will confirm or challenge our assumptions that those rated positively as 'benefit' indicate good or functioning aspects of the climate services; the respondents will be probed with the main question, 'how could it be even better?'; and (2) will focus on items that were ranked as negative outcomes on the 'cost' side, and any aspects that were missing altogether or not mentioned, or on those answered by 'I don't know' or 'I have no opinion'. The analysis should identify the aspects of the climate service value chain that must be addressed before scaling, as well as the potential additional costs and benefits for the farmers and implementors of the climate services.

As we continue the survey in the project sites, the responses are expected to serve as recommendations for scaling. Based on the results in My Loi, the discussion on scaling the ACIS climate services from the commune to the district or provincial level focused on adding more crops and corresponding agro-advisories in the PSP process. Other farmers outside the focus groups must confirm if this is also a priority for them, particularly in potential scaling sites. If we triangulate and get similar answers among direct and indirect user groups, we may confirm if the demand is a priority. If so, climate service providers must consider the aspects of climate services that need to change: does it require any adjustments in the current seasonal forecast, e.g. timing, indicators, and if so, can that information be made available? Or, if the same forecast can be used, would it only be a matter for the PSP-groups to include more crops, and if so, do the PSP facilitator(s) and/or farmers have enough information and knowledge

to provide advice? If crop models are used to simulate yield and provide advisories based on forecasts, are there enough crop response data available to calibrate the models for new crops? If major changes are needed, consider another test phase before rolling out.

1.2. The questionnaire

In short, the questionnaire has three main sections. The main questionnaire is presented in Table 1 while a summarized, untested version is presented in Appendix 2.

Table 1. Overview of questions, type of evaluation and data they contribute to

| Section of questionnaire | Type of questions | Type of evaluation | Type of data |
|--------------------------|--|--|--|
| | Random sampling strategy | Project outreach | Quantitative |
| Question 1-17 | Positive and negative outcomes comparing before and after the intervention | Individual rating converted into qualitative costs and benefit analysis For project evaluation and scalability | Quantitative (Likert-scale) |
| Question 18-25 | Actionability indicators | Individual and in-depth group assessment For climate service evaluation and needed improvements | Qualitative Quantitative (Likert-scale) |
| Question 1-17 | Key impacts | Individual ranking and group priorities Selling points of the climate service | Quantitative Qualitative |

1.3. Recording the responses

If resources are available, a notetaker or facilitator can record the ranking for each individual to complete a personalized response data set, which can be clustered into group responses. The facilitator (or note-taker, if available) jots down the data in their notebooks or records them in a spreadsheet using a software such as Open Data Kit. Recording data on a software allows the user to run valuable statistical analyses. If this is not possible, an alternative can be assigning each member different colours of tokens; asking them to leave tokens on the printout table; and taking a photo of the results. Personal information would be colour-coded in the notebook.

**Table 2. Example of a record of individual responses for question 1 onwards.
The rate 1 to 5 corresponds to the number of tokens used for rating**

| | | | | | | | |
|----------------------------|---------------|---------------|---------------|---------------|---------------|-----------------|---------------|
| Village: | A | A | A | A | A | A | A |
| Beneficiary: | indirect user | indirect user |
| Respondent | R1 | R2 | R3 | R4 | R5 | R6 | Group avg |
| Gender | F | F | F | F | F | F | |
| Age | 32 | 37 | 42 | 64 | 29 | 51 | |
| Used climate service since | 2018 | 2017 | 2017 | 2016 | 2017 | 2018 | |
| Main farming system | Maize | Cassava | Peanut, maize | Cassava, bean | Maize | Cassava, peanut | |
| Q1 | 2 | 1 | 2 | 4 | 1 | 2 | 12/6=2 |
| Q2 | 1 | ... | | | | | |
| Q3 | | | | | | | |
| ... | | | | | | | |

Qualitative cost-benefit analysis

Another goal of the evaluation is to construct qualitative cost-benefit analyses of the impacts associated with the climate services because not all values could be evaluated in quantitative terms. Such analyses present certain insights on the intervention (i.e., climate services) and the potential losses that farmers can avoid, which are both better than looking for alternatives.

Cost and benefit analyses involve three steps: (1) identifying and describing the costs and benefits, (2) attributing the observed outcomes to the agro-advisory (intervention), and (3) comparing costs and benefits, e.g. as a ratio of benefits to costs (Stevens, Rogers et al. 2008). While quantitative cost-benefit assessments yield monetary values, qualitative cost-benefits analyses identify a range of evidence for costs and benefits and explore relationships between them. Here, the value of the outcome is at the farm level. At project scale, the results could be generalized to inform governments of the value of avoided loss and damage. For this analysis, the Likert-scale response options for questions 1-17 were converted into benefits and costs.

Table 3 shows the three types of Likert response options wherein the last row shows the conversion into qualitative costs and benefits. Costs are viewed as responses not indicating benefits and thus, recorded as negative outcomes and with no specified economic value. If real gains, losses or damages are documented over time and can be

directly attributed to the agro-advisory, they may be translated into an economic cost: benefit ratio. This was not done within this project.

Table 3. Conversion of questionnaire response options to costs and benefits

| | | | | | |
|--|---|------------------|------------------|---|-------------------|
| | Much better | Better | Same | Worse | Much worse |
| Response options in the questionnaire | Always | Most of the time | I don't know | Usually not | Never |
| | I am very happy | I am happy | Indifferent | I am not happy | I am very unhappy |
| Corresponding cost or benefit | Strong benefit | Benefit | - | Cost | Strong cost |
| | <i>Positive outcomes</i> <i>Negative outcomes avoided</i> | | | <i>Resources expended</i> <i>Negative outcomes</i> | |
| <i>Examples of economic benefits and costs, before and after agro-advisory</i> | <i>Bumper harvest</i> <i>Less yield variability</i> <i>Saved labour time</i> <i>Reduced inputs</i> <i>Resource use efficiency</i> | | <i>No change</i> | <i>Crop failure</i> <i>Increased yield variability</i> <i>Added labour time</i> <i>Increased inputs</i> <i>Wasted resources</i> | |

1.4. The pilot survey

Background

The questionnaire was piloted in My Loi CSV. Here, the ACIS project started in 2015-16, with a Participatory Scenario Planning (PSP) conducted thrice every crop season, and participated by about 35 female and male farmers. The output was an agro-advisory with a forecast that was published as a poster on village information boards and broadcasted through the village loud speaker. Several farmers, who all manage their respective Community Innovation Fund, represented four CSA-interest groups. In 2018, the PSP are now participated by almost 50 representatives from all villages in the commune, who prepare the agro-advisory in groups and disseminate them in their villages. For instance, a farmer group in the commune uses social media to exchange information. The District Department of Agriculture uses the provincial seasonal forecast to downscale a district agro-advisory; the Provincial Farmers' Union, which facilitates the PSPs, posts the Ky Son agro-advisory online. The PSP approach is explained by CARE (2017) and Le, Luu et al. (2018).

The pilot approach

In the pilot survey, we organized two gender-segregated sessions (one group of 7 men and one group of 6 women, respectively). All participants, who are direct users of climate services, engaged in the PSP groups. The sessions were led by native facilitators.

The facilitator's questionnaire, which was edited after the pilot, is presented in Table 4; the printout table shown to participants in Appendix 1; and the detailed how-to-do guide in Table 5. The sessions were organized by following the steps below:

Introduction: The facilitator explained the procedure, the overall content of the printout table, and the corresponding response choices (likert scale) with graphic illustrations.

Individual responses (positive and negative outcomes): The facilitator gathered individual responses, wherein each participant placed a token (in this case, a bean) for the statement that best represented their personal view. The facilitator asked one question at a time. This method provided an individual (quantitative) response that could be noted by the facilitator and allowed group discussions about the questions (qualitative). The facilitator noted the distribution of tokens for each statement.

Group responses (actionability): The mid-section questions were asked the same way as the top section, but the facilitator reflected on the responses made in the top section by probing short discussions to allow more detailed answers and concrete examples. For instance, questions like 'Do you have specific examples of when the climate services did not help increase your yields? If so, why?' provided valuable information for the cost-benefit analysis.

Ranking (key impacts): The facilitator highlighted the statements in the top section of the printout table then asked each participant to pick three impacts of the climate services that they deemed most important. Each respondent then ranked their priorities by placing 1, 2 and 3 tokens respectively on the printout (three for the 'most important').



Figure 1. The facilitator explains the procedure



Figure 2. Participants discussing their answers

Lessons learned

The pilot survey offered several insights into the content and the procedure of data collection. Overall, the procedure was well received and understood. The visual representation of the questions and answers and the use of tokens appeared to expedite the process (Appendix 1 and Table 4).

Maintain similar form of statements in the questionnaire. Most statements are positive, such as ‘The climate services helped to...’. While neutral statements or mix of positive and negative statements are preferred, they may elicit unnecessary confusion. For instance, neutral statements would require difficult rating statements; and mixed positive/negative statements may cause discussions about the way the statements were made – both incurring longer time without obvious benefit. Therefore, we maintained a basic form of statement with one set of Likert response options. Here, the group discussions served to crosscheck that responses were not influenced by the way statements were made.

Homogeneous sampling strategy. The selected interviewees were direct users who are all aware of most of the project activities and services provided. Direct and indirect users must be evaluated separately to see differences between an active participant in the production process of the climate service and a passive recipient of such service. Given that group discussions are organized in environments where the group members already know each other, we expect that trust was already established.

The facilitator is vital. Here, the impact assessment was conducted during project activities but was facilitated by two persons who were unknown to the villagers. In this way, we expected to lower the risk of participants feeling obliged to report only positive answers. The process was transparent as all participants were given the opportunity to speak freely and were assured that their comments would improve the services for themselves and other farmers. The 13 participants in this pilot actively engaged and showed no sign of restraint.

Group dynamics. The role of the facilitator is crucial to prevent the participants from influencing one another. Seating arrangement was considered to ensure active participation and that each participant places their token themselves where it belongs. In the group, the participants tended to respond collectively even when responses were designed to be individual, and the step-by-step guide was adjusted to enable facilitators different options for use in other locations.

The token. It may be kept on the printout table or returned to the participants before asking another question. Considerations involve the risk that loose tokens accidentally move to another square (loose tokens are preferred as they can be altered) versus the value of having transparent evidence to refer back to in the discussions. Based on our experience, redistributing the rating tokens to each participant after each question and emphasizing that they should answer regardless of the group opinion (see Table 5, step 4) possibly helped yield answers that are free from any influence.

Time allocation. Around one hour was enough to retain focus and attention. We estimated that 15-20 minutes may be enough for an individual survey (depending on how familiar the respondents are with the climate service), but we saw the group feedback as more valuable and worthwhile. The group feedbacks also allowed 6-7 responses in one hour. The first section can be accomplished quickly where the participants only rank and the facilitator waits for any clarifying question. However, probing or clarifying questions may take more time and may overwhelm the participants.

Changes to the piloted questionnaire

The original questionnaire was modified during the pilot survey and in the following discussions with the team.

The question on changes in the timing of planting and harvesting was split into two questions. For the focus group discussion, 'Have the climate services caused any disadvantages for you and your farming practices?' was added to better identify actual costs, if there are any. For the question, 'Do you see any environmental effects on your farm or surroundings after using the climate services?', the words,

‘environmental effects’, were added in the guide to help facilitators explain and probe further. Moreover, since this is a before-and-after evaluation of the project, the answers of the respondents, particularly those about yield increase, may change. In this regard, the question, ‘If you experienced yield increase, was it due to higher production and/or an avoidance of crop damage/loss?’, intended to highlight if the climate services helped farmers avoid crop losses, and thus, could be adopted as an adaptation strategy to reduce yield variability. Lastly, two questions were added on changes in gender roles in relation to farm decision making processes (Table 4, questions 10 and 11 for individual responses, and questions 23 and 24 for group discussion).

2. Guideline for data collection

This guideline is intended for facilitators who are assessing impacts of climate services, such as a forecast or an agro-climate advisory as in this case. Lessons learned from the pilot survey and comments from project implementers in the other project sites further developed this guideline. We assume that the specific purpose of the evaluation has been established and that the reader is familiar with the methodology (Section 1.1-1.4).

2.1. Preparations

Table 4 shows the revised list of questions for assessing impacts of climate services.

(a) Prepare a printout table showing questions 1-17 to the participants. It must be large enough to place rating tokens directly on the paper. (b) Translate the questions into the farmers' language(s) and use clear and familiar illustrations that also work as memory support. Farmers would respond individually by physically placing beans on the table (Appendix 1).

Facilitators and participants may not understand “conventional” icons in the same way. One way to avoid confusion is to draw icons or illustrations together during the introduction of the questionnaire table. The facilitator may build on earlier experiences with developing agro-advisories.

The facilitator (and note-taker, if available) will also prepare probing questions and will record the data in their notebooks or in a software such as the Open Data Kit. If the facilitator and/or notetaker records each respondent's answer, this can be done as a simple spreadsheet (Table 2).

Selecting group members

If the purpose of the evaluation is to estimate the diffusion rate, the survey team can ask 100 random people within a certain area if they have seen and/or used the agro-advisory. The number of people who said yes provides a quick estimate of the diffusion rate. The interviewees can be randomly selected from those who answered yes.

For a project evaluation, the group members should have a similar experience or be at a similar stage of the climate service, i.e. they may be the group preparing the advisory (PSP-groups and farmer champions) or the users (villagers who receive the

advisory but are not actively involved in preparing it). They can be randomly selected from a list of project beneficiaries and categorised based on known differences among user groups, e.g. gender, age, farming systems, socioeconomic situations.

As an assessment to identify the aspects of the climate service that must be improved and to generate ideas about its scaling potential, the questionnaire may be included in a workshop. The group setup could be more heterogeneous to enable more learning and sharing among members, specifically to explore trade-offs and priorities for improvements.

2.2. The interview

The interview can be conducted in groups or individually. Here, we listed the procedures for groups through a step-by-step guide in Table 5, which should be seen in conjunction with the questionnaire presented in Table 4.

In short, questions 1-17 are asked one-by-one, wherein each participant is asked to think about their answer. At a given signal, everyone places their token under the rate that best describes their response. This is expected to reduce participants influencing one another.

Next, for the facilitators, (Table 4), they will ask questions 18-25 one-by-one to the group and facilitate the discussion. Examples of probing questions are provided in Table 5.

Lastly, for questions 26 and 27, the facilitator asks the participants to individually reflect on the twelve impacts of the climate services (questions 1-12) then rank the three most important for them.

Table 4. Questionnaire for individual and group assessment of climate services

| Questions on printout: 'After using climate services, how has the following changed for you?' | Response options | | | | |
|---|------------------|--|----------------|-------------------|--------------|
| 1. The yield of most harvests | Much better | Better | Worse | Much worse | Same |
| 2. The use of pesticides | Much better | Better | Worse | Much worse | Same |
| 3. The use of fertilizers | Much better | Better | Worse | Much worse | Same |
| 4. Farm income or savings | Much better | Better | Worse | Much worse | Same |
| 5. Labour needs | Much better | Better | Worse | Much worse | Same |
| 6. The timing of harvests | Much better | Better | Worse | Much worse | Same |
| 7. The timing of planting | Much better | Better | Worse | Much worse | Same |
| 8. Can choose appropriate crop species/varieties | Much better | Better | Worse | Much worse | Same |
| 9. Communication and/or knowledge sharing in the community after the Participatory Scenario Planning | Much better | Better | Worse | Much worse | Same |
| 10. Women farmers' participation in farm decision-making | Much more | More | Less | Much less | Same |
| 11. Men farmers' participation in farm decision-making | Much more | More | Less | Much less | Same |
| 12. Something else that has changed?[write here]..... | Much better | Better | Worse | Much worse | Same |
| Actionability statements on printout: | Response options | | | | |
| 13. Climate services help me to act on time | Always | Most of the time | Usually not | Never | I don't know |
| 14. I understand the climate services | Always | Most of the time | Usually not | Never | I don't know |
| 15. The climate services are relevant to my farm and crops | Always | Most of the time | Usually not | Never | I don't know |
| 16. I trust the climate services | Always | Most of the time | Usually not | Never | I don't know |
| 17. How do you feel about the climate services? Other feelings:[write here]..... | I am very happy | I am happy | I am not happy | I am very unhappy | Indifferent |
| Questions (talking points) for (individual or) focus group discussion* | | | | | |
| 18. Have the climate services caused any disadvantages for you and your farming practices? | | | | | |
| 19. If you experienced yield increase, was it due to higher production and/or an avoidance of crop damage/loss? (Example of probing questions: Have you changed crop varieties? Did adaptation measures help you avoid negative weather impacts?) | | | | | |
| 20. Do you have specific examples of when the climate services did not help increase your yields? If so, why? | | | | | |
| 21. If the agroadvisory was not suitable/relevant to your farm, what was missing? Was there certain information missing? | | | | | |
| 22. Do you see any environmental effects on your farm or surroundings after using the climate services? (Example of probing questions: What differences have you seen relating to water and/or soil quality, soil fertility etc.) | | | | | |
| 23. Why has women farmers' role in farm decision-making changed, or why has it not changed, in relation to the climate services? What specific consequences does that have for you, the household and/or the farm? | | | | | |
| 24. Why has men farmers' role in farm decision-making changed, or why has it not changed, in relation to the climate services? What specific consequences does that have for you, the household and/or the farm? | | | | | |
| 25. Do you have other comments? | | | | | |
| Questions for individual ranking segment* | | | | | |
| 26. Which three of the impacts from the climate services have been most important for you? | | Choose 3 elements from questions 1-12 on the printout (row 12 can be filled out if needed) | | | |
| 27. Please rank those three benefits: 1 = least important, 3 = most important. | | 1 token | 2 tokens | 3 tokens | |

* = Questions are not stated on the table printout, the facilitator uses this table as guide and writes answers in their notebook, Open Data Kit or other software).

Table 5. Step-by-step guide for individual and group assessments of climate services

| | |
|--|---|
| Setting | Quiet room with chairs around a table. Ask participants to leave their phones switched off. Max duration 1 hour. |
| Materials | Printout table (provided in Appendix 1, translated into local language and printed out in A1 or A0 format), filter pens, post-it notes, 120 tokens e.g. beans. Notebook or tablet with data collection software and downloaded questionnaire (e.g. Open Data Kit). Tape recorder (optional). For individual answers, tokens of different colours may be used to keep easier track of individual responses. |
| Selection criteria of participants | Random selection based on pre-selection criteria (project beneficiaries, random indirect beneficiaries/adopters) The questionnaire can be conducted for individual answers (with questions 18-25 as in-depth discussion) or as group responses, without consideration of tracking the response per individual. All participants are direct and/or in-direct climate service beneficiaries. Maximum 7 participants per group. Groups can be divided by gender, age, ethnicity, farming systems as required. Ensure gender is reflected within and/or between the groups. Depending on the purpose, consider subdividing groups depending on their familiarity of the climate services (direct and indirect beneficiaries). In a formal evaluation, your total sample size needs to represent a statistically significant number of the population. |
| Steps | |
| 1. | Facilitator notes group characteristics: Location, gender, when climate services were first adopted, etc.. |
| 2. | The table printout (Appendix 1) is laid out on a table, facing participants. The facilitator explains the purpose of the questions and what is being evaluated, e.g. compared with before the Participatory Scenario Planning with seasonal forecasts and agro-advisory. To ensure clarity, the facilitator show an example of the climate service provided, e.g. agro-advisory or bulletin poster (see Appendix 2). |
| Question 1-17: Individual rating | |
| 3. | Participants are given one token each. Facilitator reads out first question on the printout and explains how to answer it (see response options, Table 4). At a given signal, participants put their one token on the table on the fitting response as their individual answer. The facilitator/note taker records each respondent's rates or the group's. |
| 4. | Participants either return the token after each question or get a new token for each question. Repeat for all questions 1-17). For question 12, additional (dis)benefits be written on separate post-it notes. |
| Question 18-25: Focus group discussion | |
| 5. | Facilitator asks the 8 discussion questions one-by-one as for questions 1-17, and then leads the group discussion to probe for more in-depth answers. The discussion may be recorded, otherwise the main points are noted. |
| Question 26-27: Individual ranking of benefits | |
| 6. | Facilitator points back to the questions 1- 12 on the printout table, and asks ' <i>Which 3 of these listed and discussed impacts of the climate services have been most important for you?</i> ' |
| 7. | To avoid influence of others, each participant presents their three impacts, including the added (dis)benefits. |
| 8. | Next, each participant gets 6 tokens and distributes one, two and three tokens for the respective three priorities (three for the most important, ..., one for the third most important) |
| 9. | Facilitator notes the rank for each participant and listens to their arguments. |
| NOTE | In the case all or some participants are illiterate, the same steps are followed, only be sure to explain each question/statement and ensure tokens are placed in correct box. |

3. Guideline for data analysis and preliminary results

The questionnaire can be analysed and presented in various ways. Here, we provide a few examples using the data from the pilot survey. Since the sample size was too small, the analysis and interpretations are not statistically sound. Until we have a larger dataset, we refrain from dwelling on possible explanations, such as socio-norms and gender differences, familiarity with expressing individual opinions, and influence by group members, among others. Furthermore, the questionnaire presented here was revised after the pilot; several questions are now slightly different. When all surveys have been merged into one dataset, new assessment categories can be compared.

3.1. Quantitative assessment of rating (Questions 1-17)

The individual responses on questions 1-17 can be converted into bar graphs (use % of total respondents when the sample is large), with the legend for the response options presented on the printed table.

In Figure 3, the ratings of the climate services are illustrated using a color-coded bar graph (questions 13-17 extracted from Table 4).

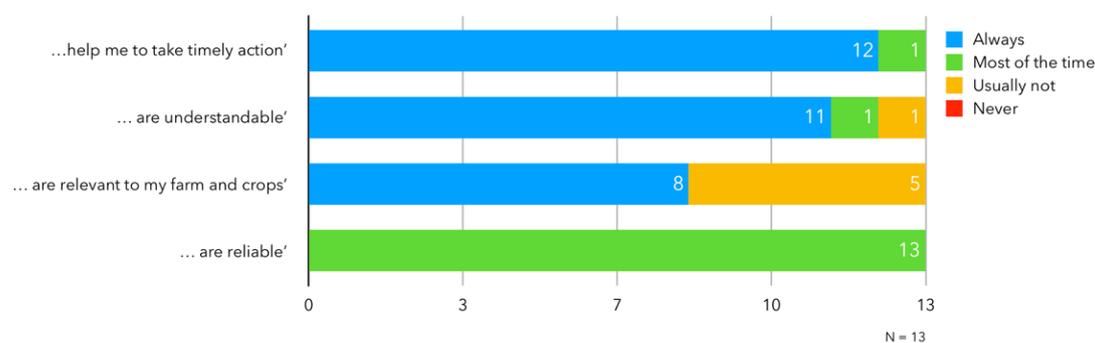


Figure 3. Rating results of the actionability of climate services, continuing the statement 'The climate services...' (n=13)

3.2. Analysis of ranking results (questions 26-27)

Two examples of the ranking of climate service impacts done in Question 26-27 are presented in Table 6 and Figure 5. Both illustrate the relative importance of the 12 potential impacts (question 1-12).

Table 6 illustrates how the scores are first added for each of the impacts shown in Figure 5. For example, for the first impact, "timing of harvesting and planting", four people each allocated three tokens, i.e. the most important impact, three people ranked

it second, and another three people gave it one token for their third most important impact, leading to a score of 21 ($4 * 3 + 3 * 2 + 3 * 1$). As shown in Table 6, ten respondents ranked this impact among their top three priorities.

Table 6. Climate service impacts ranked as total tokens per impact and number of respondents presenting the impact among the top three priorities.

| Impact (ranked) | Most important ●●●● | 2 nd most important ●● | 3 rd most important ● | Tokens in total Impact score | Number of respondents |
|--|------------------------|--------------------------------------|-------------------------------------|------------------------------|-----------------------|
| 1. Timing of harvests/planting | 4 x ●●●● | 3 x ●● | 3 x ● | 21 | 10 |
| 2. Knowledge sharing through PSP | 4 x ●●●● | 2 x ●● | 4 x ● | 20 | 10 |
| 3. Choosing appropriate crop species/varieties | 3 x ●●●● | 3 x ●● | 3 x ● | 17 | 9 |
| 4. Yield of most harvests | 1 x ●●●● | 3 x ●● | 0 x ● | 9 | 4 |
| 5. Fertilizer use | 1 x ●●●● | 0 x ●● | 1 x ● | 4 | 2 |
| 6. Pesticide use | 0 x ●●●● | 1 x ●● | 1 x ● | 3 | 2 |
| 7. Farm income and savings | 0 x ●●●● | 1 x ●● | 1 x ● | 3 | 2 |
| 8. Labour needs | 0 x ●●●● | 0 x ●● | 0 x ● | 0 | 0 |

Note: The left column corresponds to question 1-12, and the following three columns the ranked derived in question 26-27, where the number denotes number of respondents and ● the number of tokens (n=13)

In Figure 5, each colour represents the ranking and the total number of respondents rating the statement among their top three priorities. For example, four respondents ranked improved timing of harvest season as the most important impact; three ranked it the second most; and three the third most important. Table 6 and Figure 5 also show that ten out of the thirteen respondents (77%) ranked both the timing and the ability to exchange information on their top 3 impacts.

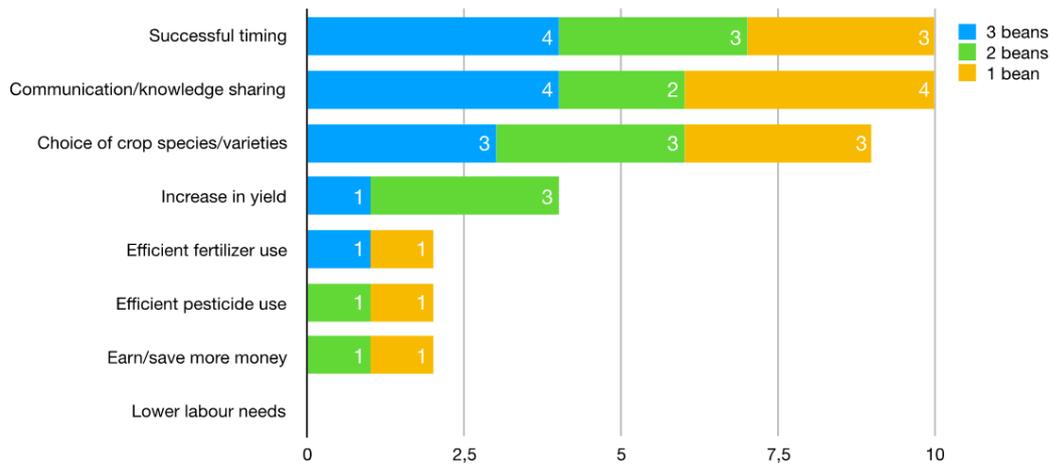


Figure 4. Distribution of ranking by priority and total number of responses in My Loi (n=13). The blue '3 beans' refers to the three tokens for the top priority, etc.

Table 6 gives a clearer illustration of the number of respondents, the total number of beans, and their respective rate. In Figure 4, the bars for 'fertilizer use' are equal to those of 'pesticide use' and 'farm income/saving money', while the ranks (weights) differ.

Comparing the rating with the ranking should explain what causes some farmers to score one impact high, many farmers to score certain impacts among the top three but not necessarily the highest, and impacts that many had rated high as benefits but nobody or few ranked among the top three.

3.3. Qualitative cost-benefit analysis of rating results (Question 1-17)

The evaluation also aims to qualitatively analyse the impacts associated with the climate services as costs and benefits, as not all values could be evaluated in quantitative terms. For this analysis, the Likert-scale response options for questions 1-17 were converted into benefits and costs (Table 3). Table 7 shows the farmers' rating of climate service outcomes and how we converted those into either strong benefit, benefit, cost, and strong cost. Scores for each impact are added for the benefit or cost side, and the total scores are given in the last row. In this way, we compared positive and negative outcomes to give an overall evaluation of the climate services. The costs and benefits of the climate service intervention can be compared for different user groups or locations (Table 8). For a qualitative summary of cost and benefits, see Table 6.

Table 7. Distribution of ratings of climate service impacts in My Loi (n=13)

| Positive outcomes | | | Type of impact | Negative outcomes | | |
|-------------------|----------------|-----------|---|-------------------|-------------|------------|
| Benefit score | Strong benefit | Benefit | | Cost | Strong cost | Cost score |
| 13 | 3 | 10 | Yield of most harvests | 0 | 0 | 0 |
| 13 | 0 | 13 | Pesticide use | 0 | 0 | 0 |
| 13 | 6 | 7 | Fertilizer use | 0 | 0 | 0 |
| 13 | 7 | 6 | Farm income and savings | 0 | 0 | 0 |
| 13 | 0 | 13 | Labour needs | 0 | 0 | 0 |
| 13 | 7 | 6 | Timing of harvesting/planting | 0 | 0 | 0 |
| 13 | 7 | 6 | Choosing appropriate crop species/varieties | 0 | 0 | 0 |
| 13 | 7 | 6 | Communication and knowledge sharing | 0 | 0 | 0 |
| 13 | 12 | 1 | Timely action | 0 | 0 | 0 |
| 12 | 11 | 1 | Understandable | 1 | 0 | 1 |
| 8 | 8 | 0 | Relevance to individuals | 5 | 0 | 5 |
| 13 | 0 | 13 | Reliability | 0 | 0 | 0 |
| 13 | 5 | 8 | General satisfaction | 0 | 0 | 0 |
| 163 | 73 | 90 | Total score | 6 | 0 | 6 |

Overall, the total score of 163 to 6 (Table 7) indicates a predominantly positive feedback. Since the statements were written in a positive manner, we expected the benefits to outscore the costs; the results then should only be indicative, and must not be subjected under over-interpretation. However, to some extent, they highlighted a few discrepancies. For example, the comparison *between* the different impacts as either a positive or negative outcome show that although all respondents reported ‘yield increase’ (a benefit), 8 out of 13 respondents rated that the climate services had ‘relevance to individuals’ (benefit) while 5 rated it as usually not relevant (cost). Here, this was the highest ‘cost score’ and thus signaled an area for attention, clarification, and possible improvement before scaling.

The importance of allowing qualitative or open-ended questions to clarify the quantitative surveys was emphasized. In the pilot study, probing questions during the group discussions addressed two critical issues. First, the group of women mentioned that they were able to harvest one rice crop before the heavy rain storms, which they otherwise might have lost. Similar examples were given by the men. For the statement ‘relevance to individuals’, the five men who said that climate services were usually not relevant explained that they meant the services are not applicable for the other crops they grow, such as black bean and maize. These crops have a narrow planting window, especially if the spring is dry, and depending on the seasonal forecast, could have strong potential as relay, intercropped or substitute crops. On the other hand, in the group discussion, all participants stated that no information was missing in the

agro-advisory poster, as they had developed it during the PSP sessions (Table 4, question 21). These findings stress the need for qualitative and quantitative surveys, as well as a facilitator probing and triangulating the questions.

3.4. Gendered comparisons

We prioritized to capture the impacts of the agro-advisory in relation to women’s and men’s needs. For this reason, we organized gender-segregated sessions.

Table 8 shows the rating results and cost-benefits analysis subdivided by gender. Although the total numbers were small, we compare results as percentage as the group sizes differed. The last two rows summarize the responses into positive and negative outcomes (benefit vs. cost). Overall, there were only minor differences between women’s and men’s responses. The main differences were that while none of the women responded negatively, only a few men did so. Furthermore, a larger share of men rated elements strongly (“Much better” or “Always”) and provided answers with wider spread, while the women tended to be more modest in their ratings. Likewise, for the general satisfaction question, ‘*Are you happy about the climate services?*’, most of the men responded with, ‘I am very happy’, while all women responded ‘I am happy’ (Figure 4).

Table 8. Distribution of ratings of climate service impacts by gender (n=13, 6 women, 7 men)

| Positive outcomes | | | | Impact | Negative outcomes | | | |
|-------------------|-----|----------|-----|---|-------------------|----|-------------|----|
| Strong benefits | | Benefits | | | Cost | | Strong cost | |
| W | M | W | M | | W | M | W | M |
| 3 | 0 | 3 | 7 | Yield of most harvests | 0 | 0 | 0 | 0 |
| 0 | 0 | 6 | 7 | Pesticide use | 0 | 0 | 0 | 0 |
| 6 | 0 | 0 | 7 | Fertilizer use | 0 | 0 | 0 | 0 |
| 0 | 7 | 6 | 0 | Farm income and savings | 0 | 0 | 0 | 0 |
| 0 | 0 | 6 | 7 | Labour needs | 0 | 0 | 0 | 0 |
| 0 | 7 | 6 | 0 | Timing of harvesting/planting | 0 | 0 | 0 | 0 |
| 0 | 7 | 6 | 0 | Choosing appropriate crop species/varieties | 0 | 0 | 0 | 0 |
| 0 | 7 | 6 | 0 | Communication and knowledge sharing | 0 | 0 | 0 | 0 |
| 6 | 6 | 0 | 1 | Timely action | 0 | 0 | 0 | 0 |
| 6 | 5 | 0 | 1 | Understandable | 0 | 1 | 0 | 0 |
| 6 | 2 | 0 | 0 | Relevance to individuals | 0 | 5 | 0 | 0 |
| 0 | 0 | 6 | 7 | Reliability | 0 | 0 | 0 | 0 |
| 0 | 5 | 6 | 2 | General satisfaction | 0 | 0 | 0 | 0 |
| 27 | 46 | 51 | 39 | Total score | 0 | 6 | 0 | 0 |
| 35% | 51% | 65% | 42% | Scores in percentage | 0% | 7% | 0% | 0% |
| 100% | | | | Women ratings (benefit vs. cost) | 0% | | | |
| 93% | | | | Men ratings (benefit vs. cost) | 7% | | | |

W = Women, M = Men

Note: The calculation is shown in percentage as the sample size differs between the two groups.

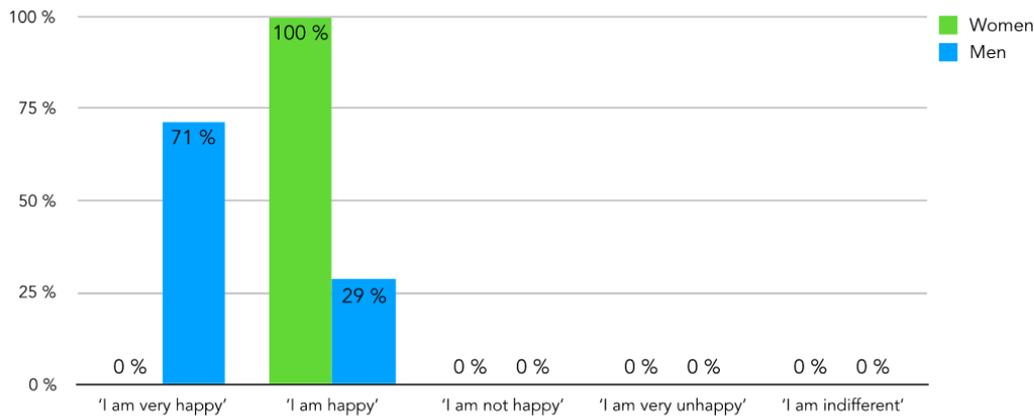


Figure 5. Responses to 'Are you happy about the climate services?' by gender (n=6 women, 7 men)

Two tables provide examples of how the rating of climate service impacts can be analyzed. Table 7 gives the overall, as well as specific evaluation scores for each impact, while Table 8 does so by accounting gender. A graphic such as Figure 4 compares results between two or more categories, e.g. gender, age, ethnic groups direct or indirect beneficiaries, which helps in selecting relevant data for further statistical analysis and in-depth explanations depending on the purpose, i.e. evaluation of project, tool, or scaling potential.

3.5. Qualitative summary of statements

The qualitative data analysis may present various purposes such as explaining quantitative results, providing examples for evaluation results and guiding for potential scaling. Table 6 specifies qualitative cost-benefits associated with the climate services by combining the most important results from the rating, the ranking, and the focus group discussion data. The costs may be converted into monetary values, if the actual loss can be attributed to errors in the agro-advisory. If the assessment can provide more values, this could be used to compare benefit: cost ratios for different user groups. For instance, the total score of 163:6 would return a benefit: cost ratio of 27 to 1 for the whole group. Specifically, it would be 78:0 for the women and 14:1 for the men.

Table 6. Summary of positive and negative outcomes (benefits and costs) associated with the climate services in My Loi (n=13)

| Benefit* - total score 163 *** | Cost** - total score 6*** | Other comments by participants ** |
|---|---|--|
| Successful timing of planting and harvesting around weather events | Forecast is seasonal and does not provide essential short-term weather forecast | The climate services are a scientific input to farmers' indigenous farming knowledge |
| Communication and/or knowledge sharing in the community after the Participatory Scenario Planning | Information is not always relevant to the individual's farm and crops | The agroadvisory was developed in collaboration with farmers, thus most farmers found it adequate as they developed it themselves. |
| Informed choice of appropriate crop species/varieties | - | - |

* Based on ranking results, ** Based on focus group discussion, *** Based on rating results

4. Lessons learned

4.1. Reflections on the approach

The setting and methodology should provide participants a safe platform to express their opinions and discuss both their negative and positive experiences with other people. Their opinions and experiences may therefore differ depending on groups and contexts.

Pros and cons of individual compared to group sessions may be considered

In group sessions, the participants represent a community where the results likely highlight what has been similar experiences. The discussions may focus on group activities and social learning and a need to probe for more individual or diverse examples may arise. Individual responses forces everybody to think more about their own answers and reflect on areas that differ among individuals. Ideally, the combination of individual and group responses should enable both types of responses and the method used may vary depending on the type of information sought for. If the facilitator suspects that the participants' influence takes over, closed rating may be considered, which is reported back and discussed as the group's response.

4.2. Key preliminary results

Climate services had a majority of monetary and non-monetary benefits

The preliminary results from My Loi showed that the most important benefit from the climate services were being able to time the harvest and planting better in relation to weather events. Being able to time harvests meant avoiding crop failures, which save both yields, incomes and labour—all of which may be converted into monetary values. However, among the top prioritized positive outcomes was the social learning – which cannot be measured in monetary terms.

A wider variety of crop choices would make the agro-advisory more actionable

The costs based on this small survey were more related to consequences of services that are *not* provided, rather than actual losses due to the service provided. For example, to fully benefit from the service, some farmers wanted more crops covered by the agro-advisory. Furthermore, while a seasonal forecast helps in planning decisions, weather fluctuations within the forecasted period and short-term weather forecasts were more critical for the farmers' management decisions. Since the project started in My Loi, some gaps between supply and demand of climate services had been narrowed. However, users' expectations, as well as their farming systems, may increase and expand over time, showing that the resolution and content of climate services must be constantly improved to meet specific user needs.

Try harder to understand the underlying differences between women's and men's responses

As the differences between gender-segregated groups were small, two specific gender impact questions on intra-household relations were added to the questionnaire after the pilot survey. During the pilot study, we noted that women were more conformist in their rating than men, which confirms the relevance of having gender-separated groups to probe for more in-depth understanding of the underlying reasons of the respective groups. In this case, in mixed groups, the uniform responses given by women might have been overlooked in search for the more obvious discrepancies presented by the men.

Two gender impact questions were added after the pilot survey and asked at a later occasion. They suggested that some women had reduced time spent on household chores, as men had become more aware of the unequal work distribution within the household. This would lead to gender awareness, raising activities conducted in the overall program rather than the PSP meetings, but may still be reflected in the question on labor allocation impacts.

Appendix 1 - The printout table

Shown below is the printout table with statements and response options for individual and group assessment of climate services. Here, forecast and agro-advisory was used, as it is a term that farmers are familiar with. The printout table with statements must be customized based on the context where it would be used. Where literacy levels are low or multiple languages are required, more illustrations must be included; questions must be asked one at the time; and results must be reiterated before the group discussions are translated into the participants' languages. Bi-lingual translations may be accomplished side-by-side on the table or the groups may be divided based on their languages if there is no common spoken language.

| |  |  | After the forecast and agro-advisory, how have these changed for you? |  |  |  |
|----|---|---|--|---|---|---|
| 1 | Much better | Better | The yield of most harvests | Worse | Much worse | Same |
| 2 | Much better | Better | The use of pesticides | Worse | Much worse | Same |
| 3 | Much better | Better | The use of fertilizers | Worse | Much worse | Same |
| 4 | Much better | Better | Farm income, or saving money | Worse | Much worse | Same |
| 5 | Much better | Better | Labour needs | Worse | Much worse | Same |
| 6 | Much better | Better | The timing of planting | Worse | Much worse | Same |
| 7 | Much better | Better | The timing of harvesting | Worse | Much worse | Same |
| 8 | Much better | Better | Can chose appropriate crop species/varieties | Worse | Much worse | Same |
| 9 | Much better | Better | Communicating and/or sharing knowledge in the community after Participatory Scenario Planning meetings | Worse | Much worse | Same |
| 10 | Much more | More | Women farmers' participation in farm decision-making | Less | Much less | Same |
| 11 | Much more | More | Men farmers' participation in farm decision-making | Less | Much less | Same |
| 12 | Much better | Better | Something else that changed: _____ | Worse | Much worse | Same |
| 13 | Always | Most of the time | The forecast and agro-advisory helps me to act on time | Usually not | Never | I don't know |
| 14 | Always | Most of the time | I understand the forecast and agro-advisory | Usually not | Never | I don't know |
| 15 | Always | Most of the time | The forecast and agro-advisory is relevant to my farm and crops | Usually not | Never | I don't know |
| 16 | Always | Most of the time | I trust the forecast and agro-advisory | Usually not | Never | I don't know |
| 17 | I am very happy | I am happy | How I feel about the forecast and agro-advisory? Other feelings: _____ | Unhappy | I am very unhappy | Indifferent |

Appendix 2 - The shortcut questionnaire

A shorter version of the questionnaire was developed but has not been tested. In this case, questions 3-4 and 10 reflect positive and negative outcomes that would be converted into costs and benefits; questions 5-8 reflect the actionability; and questions 9-11 would highlight any improvements needed before scaling.

| Question | | Response options | | | | |
|----------|--|---|------------------|----------------|-------------------|--------------|
| 1 | Have you changed any farming management practices because of this agro-climate information service? [<i>show example of climate services, e.g. bulletin</i>] | Yes | No | | | |
| 2 | If no, why not? [<i>jump to Q5</i>] | Specify | | | | |
| 3 | If yes, what did you do differently now compared to before the agro-climate information? | a. I plan/time my use of inputs better | Yes | No | | |
| | | b. I plan/time planting and harvests better | Yes | No | | |
| | | c. I use my labour better | Yes | No | | |
| | | d. I choose crops that are better suited | Yes | No | | |
| | | e. I share more farm decisions between me and my husband/wife | Yes | No | | |
| | | f. I talk more with neighbor farmers about farming practices | Yes | No | | |
| | | g. Other, Specify: | | | | |
| 4 | What results do you notice because you changed those practices? | a. My yield has improved | Yes | No | | |
| | | b. I have avoided crop loss or damage | Yes | No | | |
| | | c. I have avoided expenses | Yes | No | | |
| | | d. I have saved labour time | Yes | No | | |
| | | e. My husband/wife and I work better together | Yes | No | | |
| | | f. I learn from neighbor farmers | Yes | No | | |
| | | g. Other, Specify: | | | | |
| 5 | Climate services help me to act on time | Always | Most of the time | Usually not | Never | I don't know |
| 6 | I understand the climate services | Always | Most of the time | Usually not | Never | I don't know |
| 7 | The climate services are relevant to my farm and crops | Always | Most of the time | Usually not | Never | I don't know |
| 8 | I trust the climate services | Always | Most of the time | Usually not | Never | I don't know |
| 9 | How do you feel about the climate services? | I am very happy | I am happy | I am not happy | I am very unhappy | Indifferent |
| 10 | Have you noticed negative effects because of the agro-climate services? | If yes, specify | | | | |
| 11 | What would you like to improve about the agro-climate services? | Specify | | | | |

References

- CARE. 2017. Decision-making for climate resilient livelihoods and risk reduction: A Participatory Scenario Planning approach. Nairobi, Kenya.
- Le T et al. 2018. Participatory Scenario Planning (PSP) Group Logbook for Facilitator. Wageningen, The Netherlands, CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS).
- Simelton E et al. 2018. Actionability of Climate Services in Southeast Asia: Findings from ACIS baseline surveys in Vietnam, Lao PDR and Cambodia. CCAFS Info note. Wageningen, Netherlands, CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS).
- Stevens K et al. 2008. Evaluation of the Stronger Families and Communities Strategy 2000-2004. Qualitative Cost-Benefit Analysis. Melbourne, Australia: RMIT University.
- Tall A et al. 2012. Scaling up climate services for farmers in Africa and South Asia. Workshop report December 10-12, 2012 Saly, Senegal. Working Paper No 40. Copenhagen, Denmark, CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS).



RESEARCH PROGRAM ON
**Climate Change,
 Agriculture and
 Food Security**



The CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) is led by the International Center for Tropical Agriculture (CIAT). CCAFS is the world's most comprehensive global research program to examine and address the critical interactions between climate change, agriculture and food security. For more information, visit us at <https://ccafs.cgiar.org/>.

Titles in this Working Paper series aim to disseminate interim climate change, agriculture and food security research and practices and stimulate feedback from the scientific community.

CCAFS is led by:



International Center for Tropical Agriculture
 Since 1967 Science to cultivate change

Research supported by:



Ministry of Foreign Affairs of the Netherlands

