



RESEARCH
PROGRAM ON
Roots, Tubers
and Bananas



ON DEVELOPING THE RTB TOOLBOX

RTB Workshop Cluster CC2.1 Phase 2

8-13 May 2017
Lunteren and Wageningen



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Acronyms

RTB	Root Tubers and Bananas
CIAT	Centro Internacional de Agricultura Tropical
CIP	International Potato Center
IITA	International Institute of Tropical Agriculture
WUR	Wageningen University
INA	Impact Network Analysis Tool
R&D	Research and Development
RTB-PIM	Root Tubers and Bananas-
DM's	Decentralize multipliers
TC	Tissue culture
CONPAPA	Consorcio de Pequeños Productores de Papa (Ecuador)
M&E	Monitoring and Evaluation
IFPRI	Instituto Internacional de Investigación sobre Políticas Alimentarias

Abstract

Twenty-six participants (nine women), members of the RTB cross-cutting cluster 2.1. on “Quality Seeds and Access to Improved Varieties” met between 8-13th May 2017, in Lunteren and Wageningen, the Netherlands. The workshop participants were from: Bioversity, CIAT, CIP, IITA, UF, and WUR. The participants discussed the idea of the RTB crop seed systems tool box: what it should do, what it would eventually look like, and who would use it. Most importantly there was debate on how to arrive at having a toolbox with methods and tools that can be applied to understand, diagnose, intervene and evaluate RTB crop seed systems. Existing and novel methods and tools will be applied in different crop and country contexts during RTB 2.0 to adapt and fine tune the tools. It is envisioned that, applications of the methods and tools in two or more seed systems will enable an improved characterisation and understanding of the interactions among socio-economic and natural-technical phenomena of seed system performance, comparison between seed systems, and more effective RTB crop seed system interventions.

During the week, participants reviewed research questions they had identified for the seed systems and seed interventions they worked on, and research methods to collect the data for answering the research questions. There were many shared research questions, predominantly relating to the interface of formal and informal seed systems and to seed degeneration.

The main outputs from the workshop were:

1. A consolidated seed value chain diagram, with research questions, incorporating a gender perspective and potential tools mapped to where they would be applied in the seed value chain
2. RTB crop seed system research questions consolidated into five thematic areas
3. A matrix showing which tools would be used to address the research questions in different cases (or projects)
4. A “Tool Description” template was developed to provide a standard way to describe each tool, including how the tool incorporated gender
5. A “Tool User Guide” template was proposed as a basis for a 5-10 page document describing how to use the tool
6. A plan was sketched out for the RTB seed systems toolbox development and more detailed planning of research activities will become available in the weeks after the workshop. The workshop laid a foundation and formulated concrete steps forward.

Background, Objectives, Participants and Organization

BACKGROUND

Some very innovative tools and approaches were developed in the first phase of RTB work, such as degeneration modeling and the use of INA, which not only allows quantitative modeling and mapping of seed systems but has the added benefit of incorporating both biophysical and socio-economic data. Now

there is a need to validate these tools, and after validation, continued refinement. The best way to validate these tools is to begin using them in on-going and future seed intervention. Thus, while the new phase is a continuation of RTB seed science (natural and social), the new phase also represents a major effort to use this science to improve RTB seed systems in low and middle-low income countries. To operationalize this, we envision a project built on partners collaborations that follow three principles: collaborations should

- i) explicitly create outcomes, i.e., modify the behavior of “project implementers” (see proposal) to ultimately enhance the project’s impact, by using outputs from phase one;
- ii) learn lessons from the collaboration about what works, where and why, which may then be applied for some of the other RTB crop seed systems; and
- iii) use similar tools and standardized data collection to understand seed system performance so that ultimately it will be possible to do meta-analyses across the A5 projects and thus across crops.

In general, the role of these R&D project PI’s and their teams will be to test, validate and deploy research outputs (methodologies, tools, etc.) previously developed in cluster CC2.1 to enhance performance and achieve outcomes and impacts. At the same time, they will provide feedback to further improve and refine those outputs.

OBJECTIVES

1. Improve linkages between socio-economic and biophysical scientists to develop a toolbox for RTB seed system analysis. (Part I in the Agenda)

Expected outcomes

- Shared Inventory of the interventions, where different tools will be validated to address identified RTB seed system research questions, and related gender dimensions
- Visualization of research questions and possible tools charted into the “RTB seed system map”
- Improved understanding of how seed system research questions can integrate socio-economic, and biophysical factors for better understanding of seed systems and their performance
- Have concrete activity plans for applying gender sensitive tools in the various interventions
- Agreed modalities on how validation of different tools in different contexts and crops will contribute to collaborative development of toolbox
- Initial discussions on how individual tools, and the toolbox contribute to assess seed system performance
- Recommendations on cluster governance and internal cluster and flagship communication to share with other cluster members

2. Provide training to PhD students who are working on this cluster and start proposal preparation. (Part II in the Agenda)

- A general orientation on science and how it practiced (philosophy of science)
- Introduction to sociology of technology
- Research methodology with special focus on interdisciplinarity and seed systems

PARTICIPANTS

Seven organizations were represented by 26 participants: CIP (10 participants), UF (3), IITA (2), Bioversity (4), CIAT (1), WUR (5) and RTB (1). See list of participants in Annex 9.

ORGANIZATION

In preparation for the workshop, all communications were handled via a [workshop website](#). PowerPoint presentations are also available at this site.

Agenda

Time	Topic	Responsible
8-5-17	- Welcome and introductions (.pdf) - Introduction to first session (.pdf) - Develop the mapping of the research questions and tools into the seed system maps	Jorge & Margret Conny Team work
12:30 – 14:00 Lunch break	- Inventory of seed system interventions, research questions and tools - Hemant Nitturkar: cassava in Nigeria (.pdf) - Erick Delaquis: cassava in Vietnam (.pdf) - Margaret McEwan: sweetpotato in Ethiopia (.pdf) - Kwame Ogero: sweetpotato in Lake Zone (.pdf) - Lava Kumar: yam in Nigeria and Uganda - Greg Forbes: Potato in Georgia (.pdf) - Elly Atieno: Potato in Kenya (.pdf) - Israel Navarrete: potato in Ecuador (.pdf) - Lava Kumar: banana in Cameroon and Nigeria - Aman Omondi: banana in Uganda (.pdf)	Team work
	- Plenary: identify shared research questions and tools - Further develop the mapping of the research questions and tools into the seed system maps - Wrap up in plenary	Plenary Plenary Plenary
9-5-17	- Recap from Day 1: RTB toolbox - Tool 1: Four Square method - Introduction to methodologies developed by Florida team - Tool 2: Survey Methods for Seed System Network Analysis (.pdf) - Tool 3: Management performance mapping (.pdf) - Tool 4: Thresholds for certification (.pdf) - Tool 5: Willingness to pay experimental choice games (.pdf)	Conny Fleur Karen Chris Karen Chris Robin
12:30 – 14:00 Lunch break	- Plenary discussion: INA and how to integrate the biophysical and socioeconomic perspectives for seed system analysis - Hands-on activity on choice games	Plenary Erik
10-5-17	- Recap from Day 2, Agenda of day 3 - Banana in Peru (.pdf) - Tool 6: Small N survey for seed system analysis (.pdf) - Tool 7: Seed tracing - Tool 8: Farmer demand for seed (e.g. Means-End-Chains/Laddering) (.pdf) - Tool 9: Policy analysis (RTB-PIM collaboration) - Where and how to further integrate gender (.pdf)	Jorge Charles Conny & Fleur
12:30 – 14:00 Lunch break	Outdoor activity! Walking, shopping, e-mailing etc.	Jorge & Margaret Netsayi
11-5-17	- Recap from days 2 and 3, program day 4 - Means-End-Chains/Laddering - Further developing the RTB seed system map: what to modify/add? (teamwork) (here)	Ynte & Carolina Charles
12:30 – 14:00 Lunch break	RTB launch (special program)	
12-5-17	- Recap and program day 5 - Seed system performance: Indicators and tools - Where are we in the evidence-based systematic procedure to develop reliable, robust, profitable and sustainable seed systems (here)	
12:30 – 14:00 Lunch break	Looking forward to the end of the year (and beyond) (proposal, deliverables)	

Day 1: Monday May 8

Jorge Andrade opened the workshop and presented the objectives of the workshop:

1. To create a toolbox with methodologies to understand the seed systems of vegetatively propagated (and in particular roots, tubers and bananas) crops. The tools in the toolbox should be used by multiple research teams in a standardized way so that results can be comparable cross-crop and cross-country.
2. Improve linkages between socio-economic and biophysical scientists to develop a toolbox for RTB seed system analysis. (Part I in the Agenda)
3. Provide training to PhD students who are working on this cluster and start proposal preparation. (Part II in the Agenda)

Margaret thereafter explained the toolbox and the proposed process to get there ([.pdf](#)). The tools should enable us to understand RTB seed systems, to systematically diagnose seed systems and how to most effectively intervene in them. The tools should be used and understood in a similar way by all members of the clusters to enable a comparison of the seed systems of different crops and to get consistency in the data and analysis for the cross crop and or country, papers. Margaret proposed the use of the seed value chain (see below) to map the tools that are available to provide an overview of which parts of the seed systems the tools are currently focused on. A copy of the seed value chain and the available tools to date, was available on the google-drive of the workshop website, and was also distributed. (Annex 1). Margaret pointed out that this is only the start of the toolbox and it is the aim (and it was homework) to further fill this toolbox. The application of the tools in more than one RTB seed project is needed for cross-crop and cross-country analysis. In 2017 and 2018 a selection of tools needs to be applied, to develop and validate the toolbox and at the same time learn together about RTB seed systems and interventions. This requires a comparative and coordinated approach to the work in CC 2.1. It was acknowledged that the value chain is a “linear” concept, and that the complexity of real seed systems cannot be captured in two-dimensional drawings, but for the time being this is proposed as the best option to order our questions and tools, and move forward. The seed chain is generally considered as representing the formal seed system, but we can freely interpret and extend it for informal seed system actors and linkages. Indeed, it would be interesting to turn around the value chain and have the end users at the beginning (left). In that way, “informal” actors in the seed system can also be identified.

Group assignment 1: Seed Systems, Research Questions and Tools

Conny invited the participants to work in groups on two seed system/interventions (two leaders, cross crop) and map the research questions they have about the seed system and its interventions, and the tools they intent to use to answer these questions. During the assignment the layout of the seed system can be changed in any favoured way to accommodate the specific situations ([.pdf](#)).

The following groups with corresponding group leaders were established:

- Margaret McEwan: sweetpotato in Ethiopia
- Greg Forbes: potato in Georgia
- Hemant Nitturkar: cassava in Nigeria
- Erick Delaquis: cassava in Vietnam
- Kwame Ogero: sweetpotato in Lake Zone
- Lava Kumar: yam in Nigeria and Uganda
- Elly Atieno: potato in Kenya
- Israel Navarrete: potato in Ecuador
- Lava Kumar: banana in Cameroon and Nigeria
- Aman Omondi: banana in Uganda

The pictures of the group work can be found in Annex 2

After the group worked, the leaders of each of the seed system interventions gave a “speed-presentation” of their map in five minutes and then the audience was given five minutes for questions and answers. After the presentation, the following points of discussion came up:

- Close attention should be payed to the eventual users of the toolbox; separation should be made between users of the toolbox (e.g. practitioners, scientists) and users of the results gathered using the methods in the toolbox (e.g. policy makers).
- Some aspects are missing from the seed system maps. For example, how is sustainability included? How are power relations and politics included? How is gender included? These issues should be incorporated in each step.

During the break, all the research questions and tools/methods written on cards by each group were collected (Figure 1) and accumulated into one main map, roughly clustered by topic (Figure 2). Over lunch the cards of the topics were reviewed, reordered by Conny, and separated into research questions and the related tools to be used. This resulted in the RTB CC 2.1 seed value chain map with associated research questions and tools to be used in 2017 (and possible/partly 2018) (Figure 2 and Annex 4 for systematically ordered text).

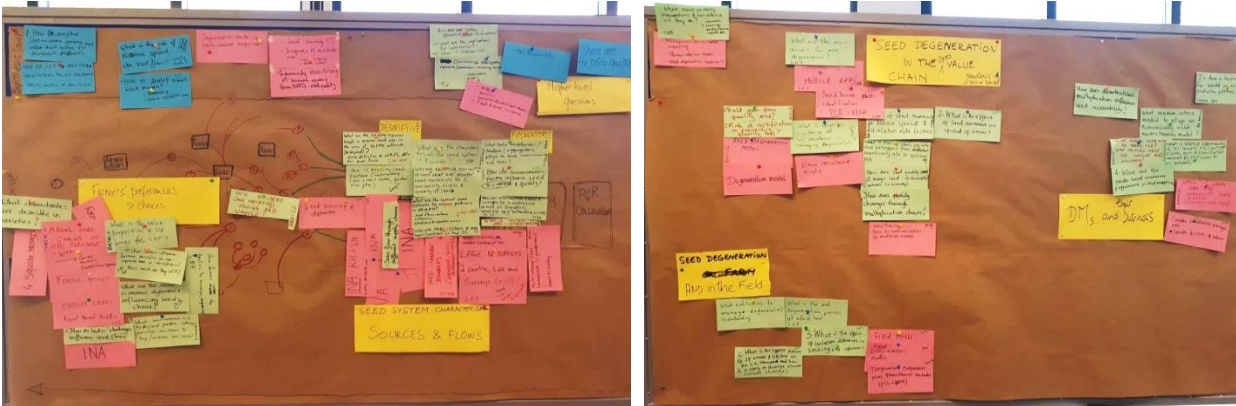


Figure 1. Research questions and tools/methods written on cards

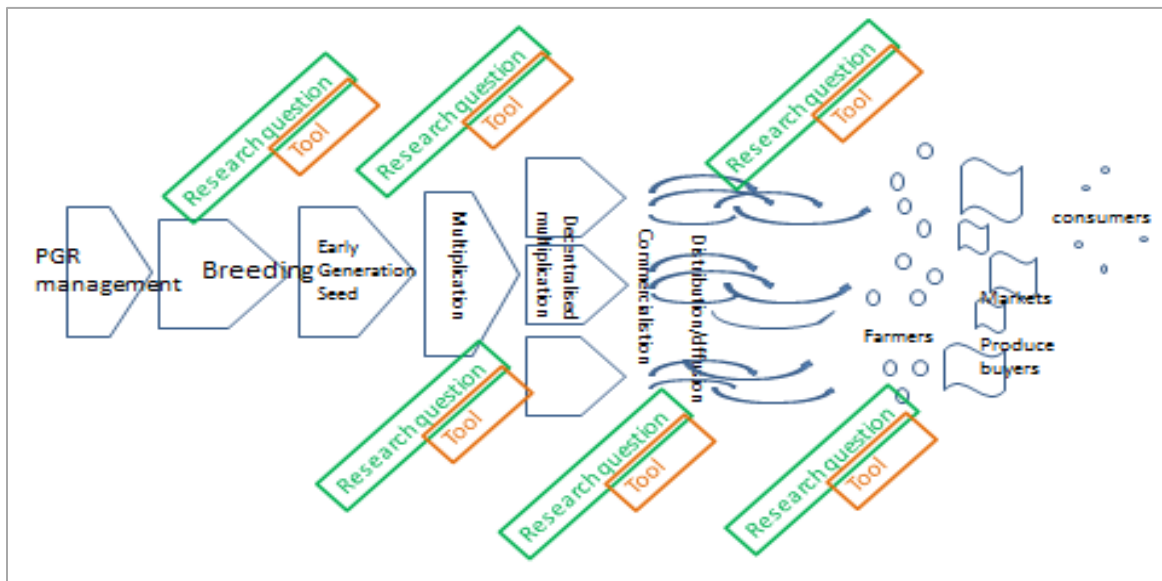


Figure 2. Seed system map – with research question and tools

The clustering of the cards resulted in five major clusters of research questions and proposed tools to address these questions

- **Seed system characterization: sources and flows**

This was the largest cluster where there were many overlapping questions: obviously, this is where the interest of the group comes together. Most of the questions were descriptive, the explanatory questions were a minority. For the same type of questions, different tools were proposed, suggesting that different options are available to answer some of the questions. Featuring tools: INA, (small N) surveys, seed sourcing and diffusion studies, Multistakeholder framework

- **Farmers preferences and choices**

Also, here there was overlap. Featuring tools: 4 Square Method, FGDs, Willingness to pay, choice games, agent-based modelling, Means-End Chains Theory

- **Seed degeneration in the seed value chain**

This cluster of questions centered around seed quality in the seed chain as affected by pathogen build up. Featuring tools: field experiments, seed degeneration model, seed tracing and crowdsourcing

- **Seed degeneration in the field**

Some cards had research questions which would require field trials and seed degeneration modelling.

- **DMs and their business**

The challenge of local multipliers to set up a viable commercial seed business in a vegetatively propagated crop was present in a series of questions for which only small N surveys, and gender constraint analysis tool and gender division of labour were proposed.

In addition to these clusters, there were a series of 'higher level' questions, i.e. overarching questions which were not tagged to specific crops or projects. They could be used across crop seed systems, e.g. How does seed system structure affect its functioning?, How should we deploy interventions?, Policy questions – power, governance, regulatory systems.

Cards (blue) with comments that were not relating to any of the clusters were kept apart. All questions and associated tools are presented in appendix 4.

After lunch the consolidated seed system map was presented followed by a plenary discussion:

- Not all tools are targeting the same users, e.g. : development practitioners, RTB researchers?
- It is noted there are many overlapping questions and similarly many overlapping tools. There was concern about the number of methodologies present if all known tools are put in the toolbox. The recommendation was made to look at the tools developed by other organizations working on seed systems. Instead of re-inventing the wheel maybe there were some existing methods which have been shown to be useful. The RTB seed system tool box should add value through for example addressing specific characteristics of RTB crop seed systems; and, or being able to provide a comparative analysis across different RTB crops and country contexts. All tools which will be part of the toolbox need to be useful for improving RTB crop seed system interventions. Criteria are needed for tools that are in the toolbox such as the value of (developing) the tool, the

purpose (e.g. the research question it can answer), and the uniqueness (i.e. each tool should have a clear value proposition for the RTB seed system toolbox) usefulness in being able to address the research question, in cost effective manner (i.e. resource implications).

- The tools should not be competing or addressing the same issue but instead, complementarity of tools should be explored.
- Obviously, with this inventory the toolbox is not complete: gaps will become clear. F.e. there is little on policy now. Most research questions and tools are focusing on the interface between formal and informal seed systems.
- If the methodologies or tools are applied in a comparable way it will contribute to better publications in higher impact journals. To convince people towards a new paradigm needs a lot of science and understanding. To be able to make comparisons we need to find out if there are common research questions this week. The suggestion is made to compare cases in which similar research has been done in at least 3 cases and for at least 2 different crops. The theory of change can be used. In the discussion how such a final product, i.e. toolbox could look like, Conny distributed 10 copies of the book *Setting Breeding Objectives and Developing Seed Systems with Farmers. A Handbook for Practical Use in Participatory Plant Breeding Projects*, kindly made available by Anja Christinck.

Some questions came up that related to the use of tools for generating indicators:

- Can we develop typologies based on the different drivers of seed systems?
- Can we develop a master data set for a number of cases? Across crops?
- What are indicators of performance? Progress? Success? Sustainability?
- We need to address definitional issues (e.g. informal, formal, public, private) so that we have a shared vocabulary.

The RTB glossary: A main outcome of the discussion is that we need a common vocabulary. Thus, the team must agree this week upon building such a vocabulary. For a full listing of the RTB seed system glossary accumulated over the week (Annex 3).

Day 2: Tuesday May 9

The day started with a plenary discussion on the classification of the research questions on the cards on the seed system map. The group argued that the classification of the cards could be done in many ways and some cards fit into several categories. Nevertheless, clustering has benefits to see where the interest of everybody lies and gets the discussion started. The cards were clustered under a number of overarching questions. These overarching questions needed input from different tools (written on the other cards) in order to answer them. The overarching research questions on the board represented both social and natural science research. The goal was to address these types of questions and subsequent analysis in an integrated way to understand the interactions between the social and natural elements in seed systems.

Banana seed system in Uganda

After the discussion, Fleur presented some of the results for which she had several methods to understand the banana seed system, i.e. 4 square analysis to understand use of banana varieties, Small n surveys/interviews, network analysis of TC banana plantlets, and means-end theory to understand sucker quality ([.pdf](#).)

Impact Network Analysis

Thereafter Karen presented the Impact Network Analysis Tool (INA) ([.pdf](#)) Several questions were addressed:

- What other methodologies are needed as input? -> Depends on the research questions.
- Are the layers connectable and how? -> Depends on the type of data collected
- How can people/actors outside the sample be linked? -> Characteristics of types of actors can be collected and then simulated. The likelihood that links exist can be calculated when a proper sample is taken as well as the likely volume of the transaction. Example question: Are mothers likely to receive good potato varieties through the network. "What if" questions can be answered with INA.
- What is the main benefit of INA over normal network analysis? ->The main benefit of INA is looking at impact which means a change in the system. Depending on the question and collected data, this can be social change like adoption rates or biophysical change like soil degradation/climate change.

Chris presented the INA tool as used for the CONPAPA case in Ecuador and sweet potato in Uganda ([.pdf](#)). While using INA it is important to know before data collection what you would like to model: the right data should be collected to make a functional model. The models can be made from different perspectives, for example from the farmer perspective or from the trader perspective. Sometimes farmers, traders or other actors do not remember well what they shared with whom. In that case estimation should be made by the participants.

Robin presented an overview of experiments to determine willingness to pay ([.pdf](#)). The discussion touched upon several points:

- How could the willingness to pay capture changes over place and time? -> no
- How to address the hypothetical bias? Farmers are buying hypothetically, not for real. -> point of discussion around this method
- How does the method relate to INA? -> It tells something about farmers' decisions to buy or not.

- How can real life income differences be captured if every participant is given the same amount of money? When their own money is not used this creates another bias. -> Surveys could be made to back up the result.

Karen gave a final presentation on INA. In this part it was explained how the seed degeneration model can be incorporated into INA. The method applies to one situation which integrates environmental risk components. Models can be created using interaction of variables to predict disease pressure. To which extent the data can be extrapolated depends on the sample size of the data and if it is still representative. A plenary discussion on the INA methodology follows:

- How do we see the complementarity of INA and other tools presented? How do we see ourselves using INA and other tools?
- Which methods directly contribute to INA and which ones need some reshaping? -> They all contribute to data layers in some way. They add detail. And with more detail different questions can be asked. You can go as far as you are willing to go, so it depends on your research. So, we need to think clearly what is relevant for the research question and all additional variables giving detail can then help.
- We must keep in mind while thinking of interventions that there is no vacuum, the informal system is there. So how will the present system react to interventions?
- Some of the group members are worried that using INA will be too difficult. -> If we can use network analysis what is then the added value of using INA? -> The scenario analysis is the added value.
- Is INA somehow complementary to other types of research? -> Ethiopia case/data could maybe be used to make an impact network analysis.
- What does INA add? Sperling et al. have methodologies and a large data set. Is there overlap? Is this new? The Sperling method characterizes seed systems and looks at sources and flows -> INA is visualizing mapping, it is scenario development, it is seed system analysis. The scenario is the core added value but is INA necessary to describe a seed system.
- INA is not necessary to describe a seed network.
- Do other methods map disease spread in relation to the seed network? That is maybe unique for RTB due to the higher risk of spread of disease because of vegetative propagation and exchange of planting material.
- Is it only a predicting tool or can it be a monitoring tool? -> Comparing different moments can help to monitor changes over time
- Is the feedback in real time? . What is the time scale, if interventions only last 3 or 4 years -> INA helps you to get information for your next funding round.
- Some members of the group are concerned about the socio-economic information you need to have from the actors. Is our understanding deep enough to make simulations? Is human behaviour predictable in these type of models? Are the choice games enough to understand it? You need to get the deep knowledge.-> The knowledge of other studies can be used in the model. Besides that, the level of confidence can be calculated in the model with a sensitivity analysis.
- The more detail you bring in the higher the level of expertise needed to get this tool working. It depends thus on the users of the tool how detailed the analysis can be.
- In what situation should we use which tool? -> INA should only be used when it is useful, if a more simple method can give you the answer why use INA? We should ask ourselves the questions which methodology can best be applied to which situation? Which tools are appropriate for which research questions? The same tool should be used for similar research questions to compare the results.

- Can INA be used to do a crop cross analysis?
- What is the minimal data set required for INA? We need to inform other Flagship Two clusters about the minimum data needed for this tool. -> INA is not a data collection methodology in itself. It needs to be fed by other results which are gathered by other types of tools such as surveys. After the data is collected, the INA tool becomes useful to lift the data to a next level. It is a data analysis tool, not a data collection tool.
- We also have to keep in mind the potential users of INA otherwise we are missing an essential step. -> The first users outside our cluster are the other RTB Flagship clusters, so in that case we are first developing it for them. INA is an over-arching tool which can add value to data collected by the other tools.

Day 3: Wednesday May 10

Jorge started the day with a short summary of activities and outcomes from days 1 and 2 of the meeting.

Banana seed system in Peru

Charles gave a presentation titled: “More productive, sustainable banana production systems in Central Selva, Peru”: the background on banana farming systems in Peru and occurrence of Fusarium (and other diseases). Large volumes of clean planting material are needed, but structures to produce those (TC lab, diagnostic lab, etc.) do not exist ([.pdf](#)). Relevant research questions and methods were presented).

Mixed methods and tools

Thereafter Conny presented on several mixed tools for RTB seed system studies ([.pdf](#)). Conny presented the background that there is a knowledge gap in understanding farmers behavior for (not) buying seed, and approaches to study farmers’ seed demand with a focus on the side of the farmer in the seed value chain. The application of the following elements and tools were explained:

- Mean-and-lean: to be part of M&E
- Small N studies:
 - Long-term “observatories”: a combination of surveys and interviews, seed tracing, etc.
 - Seed tracing studies
 - DM studies
- Attention for social differentiation

Examples from potato in Ethiopia and soya in 4 countries of N2Africa project were mentioned

After the presentation, the following discussion points were addressed:

- The described research tools are not only qualitative research, but combined methods with a manageable sample size
- For this type of research also the term “Q-squared method”¹ is also used

¹ <http://gaap.ifpri.info/integrating-qual-and-quant/> By using data from a variety of sources and qualitative and quantitative methods, it is possible to cover a wide range of issues and topics relatively efficiently. Rather than seeing this as a second-best solution, such a combined approach can actually provide a more convincing analysis than any single method. This is because studies have found that people respond differently to quantitative and qualitative information.

- Research based on a mixed approach is sometimes difficult to publish in high-impact journals, but can be integrated well in M&E and action-oriented research (quick data collection and using a small sample)
- It was noticed that the group had a different understanding of the terms “qualitative and quantitative data vs variables”; the terms were added to “RTB glossary”
- UF and WUR have different perspectives (UF works with large samples and WUR works with explanatory, interpretative approaches). Both perspectives should be integrated in the RTB CC2.1 work on seed systems
- The combination of qualitative and quantitative research provides good results, but often requires a longer time frame – the RTB program has a longer implementation period and allows for such kind of research
- Also donor requirements should be considered when deciding for a qualitative, quantitative or mixed research approach
- Research using mixed methods approach is context specific and requires skills in “asking the right questions”, to engage in community and to build rapport with interview partners
- When different study sites should be compared, a minimum data set may be required
- Guidance in linking the different tools in the toolbox is needed for users
- There is an overlap of concepts from UF and WUR; this can bring synergies e.g. for identifying relevant research questions. Joint supervision of students represents such an opportunity.

Collaboration with CRP Policies, Institutions and Markets (PIM)

In a third presentation Jorge explained about the Policy Analysis in RTB PIM collaboration through a new project on policy analysis of seed systems led by David Spielman (IFPRI). Points of attention are:

- Countries to study are Kenya, Nigeria and Vietnam
- A working paper is planned to be produced by the end of this year
- Policy analysis will become a new tool for the RTB seed systems toolbox
- Primary focus of the working group will be on seed quality assurance systems. Other aspects, such as cross border trade, may be integrated into the study later.

Gender in RTB seed systems

A final presentation on methodologies was given by Netsayi who presented results on the level of gender integration (Gender Blind - Sex Disaggregated Data - Gender Responsive - Gender Transformative) in different document categories of the RTB Seed Systems program. She explained that seed systems need to be understood as social systems to become more responsive to farmers’ needs ([.pdf Example here](#)). The importance of including gender analysis before designing seed system interventions was emphasized. After the presentation the following questions or discussion points were made by the group:

- Netsayi defines “gender” as the relationship between men and women; youth and minority groups are not included in this
- “Gender” refers not to biological characteristics, but to socially constructed roles of men and women and is influenced by culture
- Inclusion of women can be difficult in some project settings (e.g. extension service in Ethiopia). NGO partners may be involved to help mobilizing women.
- It sometimes helps to include the whole household in interventions. However, some groups (e.g. women and youth) may not be able to speak freely in such a setting
- Depending on the project context, other types of social differentiation may play a more important role (e.g. different ethnic groups in Vietnam)

Group assignment 2 on Gender

After the presentation, there was group work on gender around 3 topics. The groups had 45 minutes to discuss and five minutes to share the results:

Topic 1: *How does your case (e.g. Georgia Potato) address issues related to men and women's access to seed (presented by Greg Forbes)*

- The main constraints for women to access seed will be addressed by using a balanced sample as well as by organizing a stakeholder workshop and a carrying out a survey to identify constraints for women
- In relation to quality seed, an equally balanced sample will be ensured and the specific constraints will be identified
- The research questions developed earlier were refined to have a stronger focus on gender. Tools that can capture gender elements were selected; FGDs will be conducted in a gender sensitive way

Topic 2: *What are men and women's perceptions around quality and health of seed (Banana – Peru). How does your case, RQs and tools take this into account? (presented by Charles Staver)*

- In engaging women in quality seed management their roles need to be identified: in selecting seed, harvesting, engaging in markets. There are many relevant entry points for gender aspects in this process.
- Gender cannot be controlled by the intervention when labour is hired; entrepreneurs select the persons according to their own criteria
- Tools to identify the most relevant interventions in the seed value chain are small N studies, labour calendars as well as gender-sensitive sampling and study design

Topic 3: *How does your case (BASICS, Cassava), RQs and tools integrate gender to understand the potential and development of local seed enterprises? (presented by Kwame Ogero)*

- Issues in the context of Nigeria are women's access to land, restrictions due to religion and societal norms. Gender-relationships with crop production vary with different levels of commercialization.
- The decision-making process in households (e.g. who decides to buy quality seed) plays an important role. These aspects must be included from the onset of the project
- A model for family entrepreneurship, in which complete households will be included, was chosen in the BASICS project.

After sharing the results the following points emerged:

- Presentations were mostly focused on challenges, However, involving women can also mean opportunities (e.g. women groups for marketing in Nigeria)
- Gender is relevant for all projects. The basis is an analysis where gender influences and what meaningful entry points for gender work could be
- The RTB program has a mandate to look at gender issues as a fundamental view on the current paradigm

Day 4: Thursday May 11

Means-End Chain Theory

The day started in the Leeuwenborch, Wageningen, with a presentation by Ynte on the Means End Chain Theory ([.pdf](#)). Ynte explained that people buy products for the consequences of that product. The means end model only works if people have choices. They have knowledge based on experience. People see the world from their own perspective. People are more likely to choose known misery instead of the unknown. People do not buy products they buy benefits. After the presentation of Ynte, Carolina presented how she applied the means end theory to understand potato seed preferences of farmers.

Ynte thereafter gave a final presentation on the means end theory and explains how the data should be analyzed. After the presentation, the following questions or discussion points of were made by the group:

- Planting material has to be fresh when doing it with banana, if not, does that matter? Ynte does not know.
- People in the community get used to “the trick”. You thus cannot have a lot of respondents from the same community all the time unless you have multiple researchers working at the same time.

Progress with the toolbox

After the presentation a plenary discussion started on the progress of the toolbox so far. The first point of discussion was how the group is going to use the different tools to address different cases. There are clusters of questions and higher level questions. Some of the tools can be used for overlapping or different clusters of questions. The group needs to get clear what is defined as a protocol, as a methodology and as a tool. A standardized way to describe protocols, methods and tools is needed within the group. The description should also say how the tools are used and the type of information that comes out. Also possible limitations of the tool, like costs, season, time, people needed, expertise needed should be pointed out. The goal of phase 2 is to have a toolbox ready in which this description, uses, output type and limitations are present for each tool/protocol or method.

The tools that will be used by the group need to cross at least 2 or 3 cases. It does not make sense to use tools 1 on 1 if the goal is to compare seed systems. If multiple research teams are going to use the same tool they need to have the same understanding of the tool. Within each tool there should be a minimum standard for data required, method, analysis and interpretation because the same tool could be used in multiple ways depending on the research setting and research questions. The group must agree on the core information which needs to come out of each tool which should be similar in each case. Adaptations to the tool can then be made outside this core to make the method more suitable to the individual case studies. If the core of the method is similar in each case it is possible to justify why adaptations have been made outside the core. Furthermore, it has to be clear which tools are helping to understand the individual seed system and which tools are helping to make comparisons among cases (i.e. crops and countries). The question is if there are tools present which can be used to make these comparisons or if they need to be created. There is overlap between some tools.. The group should get on the same page for these overlapping methodologies. Also, there are tools for data collection and tools for data analysis. INA is a tool for data analysis and “small n” is a tool for data collection. Tools for data analysis should use or “re-purpose” data collected through other tools designed for data collection.

The Thursday afternoon the entire group attended the RTB Phase 2 launch in the Impulse building on the WUR campus

Day 5: Friday May 12

After the recap of the workshop so far, the group work continued

Group assignment 3 on Methodologies

In groups participants were tasked with writing up guidelines on using each tool. One group worked on the methodology for seed tracing, the degeneration model and INA. Another group worked on standard templates for the tool description. Presentations on the guidelines or protocols were made by each group. Kim started with a presentation on the template for the tool description, using the RTB Multi-stakeholder Framework as an example. This was developed in the Tool Description Template (Annex 5). Thereafter the other groups present their ideas for methodologies.

The following questions or points of discussion are addressed in the plenary reporting:

- What is the process of getting gender integrated? The tool description template has to stay compact but indeed gender is missing.
- Purpose and level should be separate points.
- Is the type of data quantitative? Qualitative? What is needed to answer the question?
- Type of tool. Analytical, data collection etc. It could be in output.
- Time can mean different things: 1. Time frame is how long it takes 2. Timing is where in the process of mapping the seed system can best be used 3. Timing can mean in which period of the season you can best apply the method. To describe phases goes too much in detail.
- The tool name and type of method used should be separated. For example the tool can be four-square analysis but the methodology used is a focus group discussion. This has to be unpacked for each method/tool.
- Who are the users of the tools? Are users inside RTB or can they be outside RTB? The tools are also for NGOs etc. if they are developed. Not all the tools that are used can be part of our toolbox then it becomes too big. They should be new and something special.
- Seed degeneration model: Goal is to get more data on all crops. Needs to be used on more crops not only in the Georgia context.
- Seed tracing: Techniques can be shared among researchers. Protocol will be shared and given feedback on in the group. We in general need to think how to be careful with the data of the person. Conclusions are restricted by the size of your sample. You can use any size.

Point of action: Within 2 months we can have an improved document (Tool Description Template) which includes gender. It must be everywhere to remind people to think about it.

Next step on tool box development:

From the group work and the discussion that followed, agreements were made about how to continue the work.

1. The developments made in the toolbox so far are presented in Annex 4

2. All tools should be described in the tool description template prepared by Kim. This is in Annex 5 and on the RTB cluster website. The description for each tool should be ready before the next webinar.
3. There should be a webinar with the other clusters to update them on progress in RTB CC 2.1.
4. A template for the tool/protocol/tool user guide has been prepared. This should be 5-10 pages. Each tool needs an owner/supervisor. See Annex 6 for a completed example
5. RTB Seed Systems Glossary needs to be completed.
6. Each proposed case study should develop a work plan for 2017
7. We need another workshop in early 2018 for reviewing use of each tool and results from each case where the tools have been used.
8. After the use of a tool, we need an internal debriefing template – to capture lessons from using the tool, and how it might need to be improved..
9. Capacity building plan/events calendar. Part of that is on the website
10. PhD students should have a first draft proposal
11. Need for RTB planning meeting for Impact assessment

A more detailed list of action points, dates and responsible persons can be found in Annex 7.

After this session Steve gave a presentation on points of reflection and indicators ([.pdf](#))

Group assignment 4 on Indicators for Seed System Performance

In the end, the toolbox should say something on “seed system performance”. This means we must work on indicators of success in four different areas. n. Four groups worked on the four areas: access, availability, policy and quality.

Topic 1: What are indicators of access:

Access does not only depend on capital resources but also on social capital. Access is defined by: technology, capital, markets, labour, knowledge, authority, identity, social relations, gender. Indicators of success should not only look at increased access in economic terms but also the effects on equity and ecology. For that reason, the group suggest to use the sustainability triangle: Economic, Equity and Ecology (EEE). Examples are:

Economic parameters	Equity parameters	Ecological parameters
Affordability	Access to technology	Genetic diversity
Elasticity	Access to markets	Input use

Topic 2: What are indicators of availability:

The group has several ideas how to measure availability. Examples are: which varieties are available through formal channels versus informal channels. Preference: do the available varieties fit the farmers’ preferences. Variety turnover: What is the rate of introducing new varieties? When are varieties released and are they still grown etc. Germplasm movement could also be an indicator.

Topic 3: Policy indicators:

The “black market” in seed systems needs to be recognized by authorities (e.g Vietnam, Nigeria). A first step is to at least recognize that these informal systems exist but there is a big opposition for

that recognition. These opposing parties are the drivers so RTB does not have a lot of power to change that.

Indicators:

- Is the informal seed system recognized in policies and seed law?
- Do extension officers help farmers in the informal or dark network as well. Do they help the farmers with the seed as it is or do they just help farmers with seed sourced through the formal system?
- How many policies are based on the informal system?
- Achievable levels of classes for each system should be present. For example 0% virus tolerance is impossible for the informal seed system. Realistic standards should be made which are achievable in the field.
- Is there a registration program for seed multipliers which is accessible in the field?
- Existence of emergency protocols for disease outbreak in the informal system.
- Rights of farmers and multipliers should be protected, look at existing documents for that. (UPOV 99 for example).
- Broader connection with regional community.
- Engagement of RTB with policy environments.

Topic 4: Seed quality indicators

An indicator for seed quality could be a base line end line answering the question; how did seed quality change from before to after the intervention. Besides that the amount of quality seed in the seed system can be measured. A proxy can be defined for the amount of seed produced, for example, has the amount of quality seed doubled or not. Another measurement can be: are protocols for producing high quality seed present? When using modelling techniques it can also be defined how much quality material moves within the network. A part of the indicators should also be who are the ones using the quality seed. Also the change in seed quality of farmers' seed could be measured depending on the research question.

Evaluation and budget planning

For the evaluation, the participants of the workshop were asked to write their feedback on flipcharts (Annex 8). Thereafter the budget for the RTB project for the coming year was discussed and the workshop ended. The list of participants of the RTB workshop can be found in Annex 9.

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Annex 1. Overview of the toolbox

Small N curve: characterization of farmers' use of	Through a survey, information on the variation 1) in number and type of varieties grown by farmers, and 2) seed sourcing at village level. Farmers are differentiated for		
TOOLS TO ASSESS SEED SYSTEM PERFORMANCE	TYPE OF INFORMATION AND RESEARCH QUESTIONS ANSWERED	EXPERTISE/IMPLEMENTATION IN RTB SEED SYSTEM 2017	CONTACT PERSON
Expert diagnosis on seed system functioning	Use of the conceptual framework to explore bottlenecks in institutional presence and performance to make quality seed available and accessible for smallholder farmers	a. Propose validation of gender sensitive CF in start up of new EU sweetpotato project (SNNPR, Ethiopia)	Israel Navarrete a. McEwan (July-August 2017)
	<i>What is the role of different actors in making quality seed available to smallholder farmers?</i>		
	<i>How can access to quality seed be improved?</i>		
	<i>Which actors need to be included for better performance of the seed value chain?</i>		
Four Square Method: variety inventory	This method can be used with Focus Groups (essentially: an expert group) to make an inventory of banana varieties, differentiate their abundance and use.		
	<i>Which varieties are most common?</i>		
	<i>What is the role of rare varieties in the production system?</i>		
	<i>Of which varieties is planting material most difficult to source locally?</i>		
	<i>Are particular varieties important for women?</i>		
Participatory variety and seed evaluation	On performance of varieties, seeds and exploration of farmers' preferred variety/seed traits		
	<i>How do improved variety perform under farmer management?</i>		
	<i>Does higher quality seed yield more under farmers conditions?</i>		
	<i>Is high quality seed performing better in the farmers' economy?</i>		
	<i>What variety and/or seed characteristics do farmers value ?</i>		

Choice experiments: understanding farmers' demand	1) A type of choice experiment approach from consumer studies was adapted to understand farmers perceptions and motivation for preferring particular varieties and for preferring particular suckers.		
	What are the motivations of farmers to prefer particular seed sources over others		
	<i>What are the motivations of farmers to prefer particular varieties</i>		
	2) Modified willingness/ability to pay (to be developed)		
	<i>Can and/or will farmers actually pay cash for available seeds?</i>		
	<i>Can or will farmers risk loans for investing in available seeds</i>		
	3) Experimental games (vouchers, virtual or real money)		Israel Navarrete
	<i>What is the value farmers attach to different options to invest in crop seeds and other inputs?</i>		
Large N surveys: seed practices (sourcing, conservation, use) within larger intervention. Baseline and endline survey modules	Sample survey in intervention and non-intervention households/areas, with production, consumption, marketing modules. Trends: current sources of seed compared to 3 years ago; seed purchase; number & type of new varieties; varieties dropped and why; preferred varieties; farmer based seed conservation strategies. Production and sales: household sale and gift of vines by sex. Vine dissemination and sale: multiplier characteristics, customer characteristics; variety, number of cuttings, labelled, QDS. Crop cut:		
Gender situation analysis of sweetpotato production systems: checklist for gender analysis of seed system	Purposive survey. Key informant interviews, FGD, SSI for gender division of labour in SP production system including seed systems in context of wider livelihood system. Crop & SP production calendar; varieties and preferred characteristics preferences, drop outs; sourcing (quantities, varieties, price, sex of seller/customer; on-farm vine production practices,		

Annex 2. Results of Seed System Groupwork



Annex 3. Glossary of Seed System Vocabulary

Glossary Seed System Vocabulary	
Seed degeneration	
Intervention	
Availability	
Access	
Affordability	
Choice experiments	
Impact	
Impact Network Analysis	
Description of a seed system	
Tool	
Method	
Protocol	
Minimum dataset	
Decentralized multipliers	
Qualitative data	
Quantitative data	
Gender	
Gender sensitive	
Gender responsive	
Gender transformative	
Social differentiation	
Sex	
Disaggregated data	
Protocol for tool	
Research plan	
Resilience	
Seed exchange	
Seed replacement	
Seed dissemination	
Seed gift	
Seed health	
Seed security	
Market	

Coupled human-natural systems	
Complex adaptive system	
Crowdsourcing	
Small N surveys	
Mixed methods	
Seed networks	
On-farm management	
Quarantine	
Clean Seed	
Host resistance	
Cutting	
Mini-sett	
Quality declared seed	
Formal seed system	
Informal seed system	
Certification	
Quality assurance	
Inspection	
Specialized seed multiplier	
Local seed business	
Effective demand	
Willingness to pay	

Annex 4. Next steps on toolbox development

Seed System Characterization, Sources and Flows

Research Questions	Tools	Projects
What are the existing regional trends in cassava seed use in the area of SLCMV outbreak (and beyond)? Virus detection and white fly data for same fields		CMV-SEA
How is the existing seed system (stakeholders, flows & main nodes, gender roles, etc.)?		Georgia
How is seed (and varieties) moving and where?	Seed tracker studies (gender / User differentiated)	BASICS
What are the characteristics of the seed systems in Ecuador?	INA Surveys (n=?), IS dist each	SDE
Who are existing sources of seed? What are gender-based constraints to Δ availability, access & quality of seed?	Baseline Small N survey Gender constraint tool	SR Eth 2
What are the current seed networks for cassava producers in VN & KH? - Seed flows, volumes - Information - Established and expansion areas	INA: KH+VN 4 sites, N=100 for each	CMV-SEA
Who are stakeholders & their functions in the SS?		SREth 1
What roles do middlemen/dealers/aggregators play on seed movement and trade?		BASICS / RTB Banana
How do socioeconomic factors influence seed movement & quality?	Seed sourcing & diffusion INA	SPT
How can information flows & linkages be strengthened across VC segments? What are key bottlenecks (AAQ) in SS?	Multi-stakeholder framework (gender lens) + small N survey	SP Eth
What are the existing regional trends in cassava seed use in the area of SLCMV outbreak (and beyond)? Virus detection and white fly data for same fields	Seed tracker studies (gender / User differentiated)	BASICS
What is impact of seed interventions?		

Farmers' Preferences and Choices

Research Questions	Tools	Projects
What characteristics are desirable in varieties?	4 square method	PK
How do biotic challenges influence seed choice?	INA	
What does the value proposition a VSE bring for SHF?	Means ends chains of seed purchase	BASICS
What factors influence farmers' decisions to use improved seed or new cultivars? How much are the WTP?	WTP → games, auctions, discrete choice experiments	CEB
What are the socio-economic dynamics influencing seed choices?		BB
Which socio-cultural and biophysical factors influence farmers' decision to buy / acquire new seed?		BASICS RTB
How farmers choose the tactics to manage degeneration	Focus Groups Choice Games, Agent based Modelling	SDE
	Means End Theory	

Seed degeneration in the seed value chain

Research Questions	Tools	Projects
What are the main drivers for seed degeneration	Crowdsourcing → mobile app/ODK Seed borne pest identification PCR-ELISA	SDE
Yield gain from quality seed? Role of certification in preventing quality loss?	Seed degeneration model	BASICS
What is the relative importance of host resistance in managing degeneration?		Georgia
Role of seed movement in disease spread & re-infection rate factors?		RTB Banana, BASICS
What is flow of seed varieties and pathogens from beneficiary H/H spill– over H/H?		SPE3
How does seed quality through Δ through seed dissemination network?		
How does quality change through multiplication chain?	Degeneration model	PK
What is the effect of seed movement on spread of viruses?		SPT
Where should we deploy interventions & how effective will they be? Interventions = training, variety dissemination, improved seed	- Management performance mapping - Thomas-Sharma model - Seed degeneration experiments	CEB
	Seed Tracing Socio-economic characterization of multiplier nodes	SP Eth 3
	Virus resistance trials	

Seed degeneration in the field

Research Questions	Tools	Projects
What are tactics to manage degeneration? (Understanding)		
What is the seed degeneration process at the farm level?		SDE
What is the effect of isolation distances in limiting virus infection?	Field trials	SPT
What is the current distribution of sp viruses & vectors at eh LZ Tanzania and how is it likely to change vis a vis climate change?	Seed Degeneration model Temperature dependent virus transmission sub-model	SPT

Decentralized Multipliers and Business

Research Questions	Tools	Projects
How does decentralized multiplication influence seed accessibility?		PK
What are minimum criteria needed to set up an economically viable nursery business model?		RTB Banana
What makes someone an ideal VSE? What factors help VSE survive and succeed?	Small N survey VSEs and community over 3 years (women and men)	BASICS
What are the gender-based constraints & opportunities in seed multiplication?		
What is the relative effectiveness of PLC (private), FTC (gov) & DUMs as dissemination channels of OFSP vines to HH (mothers)?		SP Eth.
Is there a business case for selected cassava clean seed production pipelines?		CASSAVA-SEA
	Gender constraint analysis tool Gender division of labor	SP Ethi.

“Higher level” questions

Research Questions	Tools	Projects
How does seed system structure affect its function? → What are the implications for intervention? → What is the disease risk?	INA Statistics Exponential Random Graph Models Field disease incidence	CEB
Characterize seed system network / movement – including re-use - stakeholders - gender - value chain - volumes		CEB
	Degeneration modeling Performance mapping	
	Seed tracking Diagnosis of re-infection risk (seed indexing, field indexing)	
	Community monitoring of banana recovery from BBTQ: seed quality	

Comments (blue cards):

- Pet economists
- Where are the policy questions?
- What is the risk of disease spread via seed flow at country scale?
- How to develop robust root markets (processing, value addition)?
- How to strengthen interactions among seed value-chain actors to facilitate feedback?
- Use ICTs in seed system
- Seed system and policy congruence?
- Youth, women and seed system?

RTB Seed Projects

- BASICS – BASICS (Cassava) Nigeria
- BB
- CEB
- Georgia – Potato, Georgia
- PK – Potato Kenya
- C(MV)-SEA: Cassava (Mosaic Virus) – South East Asia
- SDE -
- SP Eth – Sweet Potato Ethiopia
- SP T – Sweet Potato Tanzania
- RTB Banana

Annex 5. Tool Description Template

The Tool Description Template is meant to quickly give an overview of the most important properties of the different tools that can be used to describe an RTB seed system. It provides information to help the user decide which tool to use to answer different questions about a seed system, depending on needs and the available time, resources and funding.

Each property is listed below (with an explanation between brackets): *using the example of the Multi-stakeholder framework*

1. Title: *Multi-stakeholder framework for interventions in RTB seed systems*
2. Purpose: *identify key stakeholders and issues or bottlenecks to improve seed security*
3. Level (e.g. entire seed system, village level, household level): *Entire seed system*
4. (Minimum) sample size: *depends on available resources*
5. Users of the tool: *seed intervention designers, - implementers, - evaluators, - analysts*
6. Audience of the output of the tool: *Users (see above) and policy makers, lobbyists, donors*
7. Duration: *1 – 8 weeks*
8. Output of the tool: *preliminary description of a seed system overview of constraints*
9. Resources:
 - a. No. of people: *1-3 people*
 - b. equipment: *internet, vehicle, location for a workshop/FGD*
 - c. expertise: *gender, socio-economy, biophysical*
10. Timing (when do you use the tool in a project/study/intervention cycle): *scoping, monitoring and/or evaluation*
11. Steps (brief summary of the main steps to take during use of the tool):
 - a. *Context analysis: review of publications and grey literature +/- field visits to identify key stakeholders*
 - b. *Draw the framework matrix, with the first column = stakeholders and the first row = functions of the website. Cross sections of row x column help to define specific questions (eg. what is the role of policy makers with regards to availability etc.)*
 - c. *Identify tools to help you answer questions or gather information lacking on the existing seed system (intervention)*
12. Examples (a link to where it's been used): *CONPAPA, Maranda Bora, etc. (see case study book)*
13. Contact person (who can help if you have a problem): *Almekinders, Andrade, Jacobsen, Walsh, McEwan*
14. References (incl. user guide):
 - a. Full user guide: <http://www.rtb.cgiar.org/publication/view/multi-stakeholder-framework-intervening-rtb-seed-systems-users-guide/>
 - b. Case study book (examples of implementation of the framework for literature reviews to evaluate seed system interventions):
<http://www.rtb.cgiar.org/publication/view/case-studies-root-tuber-banana-seed-systems/>
15. Gender (how is it incorporated):
16. Tool type (eg. data collection, analytical, policy formulation etc): *analytical, policy formulation, strategic document*
17. Which methods can be used (eg. literature review, FGD, PRA, RRA, household surveys, snowballing, means-end, etc): *all tools may be suitable to answer questions identified using this tool*

Annex 6. Example of Tool User Guide

Constraints analysis tool for the sweetpotato value chain²

What is the purpose of the tool?

As a result of the roles they play in sweetpotato cultivation, men and women may experience different constraints and opportunities along the value chain. These constraints are varied. For example, they may be related to access to resources, or social norms that may restrict or promote participation in certain activities.

This tool will help us gather the following information:

- Gender division of labour along the sweetpotato value chain from production to marketing.
- What resources men and women need for the various activities
- What constraints they face
- Suggested solutions to the constraints.

To whom will the tool be applied?

This tool will be applied in both men and women's FGDs asking about a typical day for a person of their sex resident in the community. Typical numbers in FGDs should have maximum participants of 8 to 10 people. They should not go beyond this number otherwise they become difficult to manage.

The same tool can also be applied with other value chain actors for example traders.

How will we apply it?

Step 1:

List all activities that the value chain actors are involved in the in the sweetpotato value chain from production, harvest and post-harvest and processing activities³

Step 2:

For each activity listed probe to find out the degree of responsibility for each gender category. You fill in the table in a participatory manner and asking questions for clarification where for example you notice some differences between what men and women do. You can fill in the degree of responsibility in a qualitative manner as follows: X: Low responsibility; XX: Medium; XXX: High. Alternatively, one can decide to use percentages as a measure of the degree of responsibility.

Step 3: Identify constraints entrepreneurs⁴ face under each activity

In this step brain stop on the constraints that men and women face when they engage in these activities. For example, when you see that women are not involved in marketing you can also ask why is it that women are not involved in marketing but men are; or why is it that men are more involved in activity A than women etc. The constraints are filled out in column four of Table 1. Also remember that the note taker will also take detailed notes about the discussions that take place.

Step 4: Analyze the constraints

² Could change from SP value chain to seed value chain

³ Could decide to focus only on vine production and marketing whatever your interest is

⁴ Could be vine multipliers or other seed VC chain actors

Step four is where a critical analysis is done to ascertain the cause and effect of gender-based constraints. It is important to understand causes and consequences of a constraint because this enables actors to address the root cause as opposed to symptoms. And also develop solutions to the constraints and also discuss the possible advantages and disadvantages of the solutions proposed.

What do I need?

A flip chart, marker pens, sticky tape, notebook and a recorder

How long will it take?

2 ½ hours

Table 1

Activities carried out by chain actor	Roles and responsibilities low=x, medium=xx, high=xxx				Resources or service needed to carry-out the activity	Constraints
	Male	Female	Youth			
			Female	Male		

Constraints

Gender based constraint(s)	Cause	Consequence	Actions

Annex 7. Action Points and Conclusions

REMEMBER: NOTE TAKING ON DISCUSSIONS IS CRITICAL

Task	Who	When
Contact the focal person at your center and confirm budget	All with reporting responsibilities	ASAP
Confirm your deliverables in MEL – Changes needed? Can't access MEL? Contact Jorge.		
Review and confirm matrix of seed project x tool (here) and that you are willing to lead/support: a) tool application in “your seed project”; and/or b) continued tool development. You may want to see the matrix suggested by Charles that we can use later (here).	1 person leading + supporting team	May 26 th
Tool Description sheet (here , with an example for the stakeholder framework – to be completed by you with information about the tool you are leading)		May 26 th
Tool user guide (5-to-10 pg.) See example for the stakeholder framework here		June 7 nd
Create Website and Dropbox folder for cluster	Jorge, Julia, Margaret	June 7 nd
Work plan for each Seed Project – with activities, time line and responsibilities for application of tool	Each seed project contact person with project management/personnel	June 15 th
Internal cluster skype call between tool developers and tool users	Jorge, Margaret	June (9 th or 19 th –23 th , TBD)
Webinar with Flagship cluster leaders	Jorge, Margaret	Mid- to late-June (TBD)

Annex 8. Evaluation

The most important element(s) of this workshop for my work was/were.....	I wish that in the next CC 2.1 workshop there
• The discussion on the tools and research questions, the participatory nature of the workshop and the openness to discuss issues • Discussing a collaborative work project with the WUR • Networking and staying in the loop • Understanding Means-End-Chains better and the INA tool • Networking opportunities • Linking socio-economic and biophysical research • Appreciation of availability of tools for linking socio-economic and biophysical studies • Linking qualitative and quantitative research • Framing of individual projects in a greater cooperative structure • To get to know the people who are involved in the project • Made a good progress on the use of tools in seed intervention • Potential use of seed system tools, frameworks cross clusters and in different intervention context	• Was more downtime. Starting at 9 am, the days were very long • Is more time to do something with my hands (creative activities). • Audio-visual tools are used • Provides an opportunity to integrate a more socially/gender diverse research philosophy • There are field visits • Groups are split up during administrative bits • There is more opportunity for walks during the day • There are draft articles for submission • There are articles in review for publication • Ensure that all aspects of the seed system are carried out with a "gender lens" • Practical field visits (applying tools)
I would have liked this workshop even more if....	The most valuable thing of this workshop for me personally was....
• The gender ratio would have been more equal • More cases on tool usage would be presented • New learning opportunities from an external expert from other areas. (The WUR session was one high point) • There is a greater opportunity for practice/hands-on work • Provision of more details on the various tools (only INA was well covered) • The multistakeholder framework was highlighted on day 1 (would have been useful starting point) • Nap time was available • There was more focus on linking tools to comparable indicators • Food variety • We would have had to build the team capacities • The methodologies were discussed in more detail • If the starting model had built on previous theme and cluster thinking	• Understanding and seeing the status of seed system tools • Networking and peer learning • The session on research questions and potential tools to answer them • Examples from different systems about practical problems • Seeing how RTB research is becoming more synergetic • As a 'quant' I gained new appreciation for qualitative research • First time talking face to face with most of the people in the cluster • Civilized debate and clarification • To learn from other perspectives • Having a feeling of using the different tools that are proposed • Understanding the importance of using mixed methods • Diversity of participants, active and interacting around concepts, tools and field of expertise

Annex 9. Participants

Surname	Name	Institution
Almekinders	Conny	WUR
Walsh	Steve	WUR
Urrea	Carolina	WUR
Kilwinger	Fleur	WUR
Pircher	Tom	WUR
Garrett	Karen	UF
Choudhury	Robin	UF
Buddenhagen	Christopher	UF
Nitturkar	Hemant	
Mudege	Netsayi	CIP
Nkengla	Liliam Wopong	IITA
McEwan	Margaret	CIP
Kumar	Lava	IITA
Staver	Charles	Bioversity
Jacobsen	Kim	Bioversity
Omondi	Aman	Bioversity
Forbes	Greg	CIP
Thiele	Graham	CIP
Schulte-Geldermann	Elmar	CIP
Andrade-Piedra	Jorge	CIP
Gatto	Marcell	CIP
Navarrete	Israel	CIP
Atieno	Elly	CIP
Ogero	Kwame	CIP
Delaquis	Erik	CIAT
Ajambo	Susan	Bioversity

