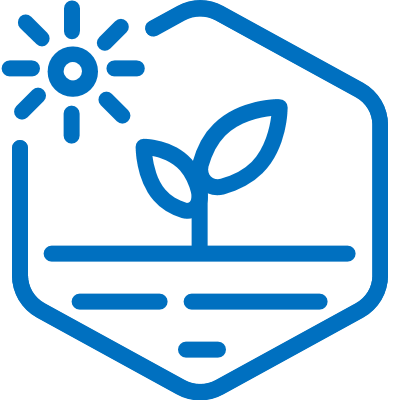
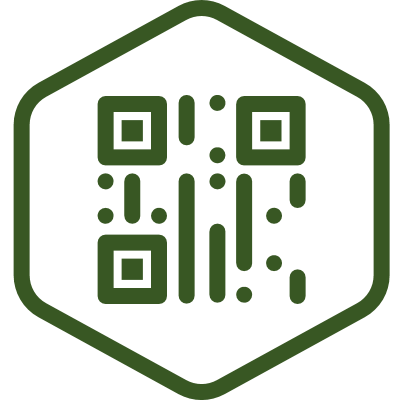
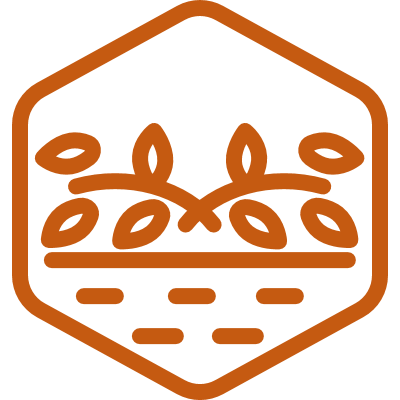
**Seed**

**Systems Resilience Assessment**

**Digitalization**

**Contents**

[Tool 1 -SRA 1: Analysis of Crop Diversity Availability and Preference 2](#_Toc1059662895)

[SRA 1A : Historical Timeline [TBD: We can translate this tool into the mapping the conflict, insecurity, and climate hazards contexts. One of the critics of the SSRA is not being able to clearly map the conflict context. E.g. Context analysis tool of Mercy Corps did this step, we look at that tool and see how we can adapt our tool] 3](#_Toc839051260)

[SRA 1B : Diversity Wheel 3](#_Toc959461147)

[SRA 1B1: Inventory of crop diversity – 3](#_Toc935279906)

[SRA 1B2: Diversity wheel – crop based – 3](#_Toc770108210)

[Crop prioritization for varietal diversity analysis 4](#_Toc1492177991)

[SRA 1B3: Inventory of varieties of the prioritized crops – 4](#_Toc2058945960)

[SRA 1B4: Diversity wheel – Varieties of priority crops- based – 4](#_Toc497767674)

[SRA 1C: Preference ranking (Male and female separate data) 4](#_Toc1679019586)

[SRA 1C2: Crop preference ranking 4](#_Toc880547552)

[SRA 1C2: Varietal preference ranking 5](#_Toc95858155)

[Tool 2: SRA 2: Analysis of Climate Resilient Crops and Varieties 5](#_Toc307422269)

[Identification of the key hazards of Climate Change 6](#_Toc251396829)

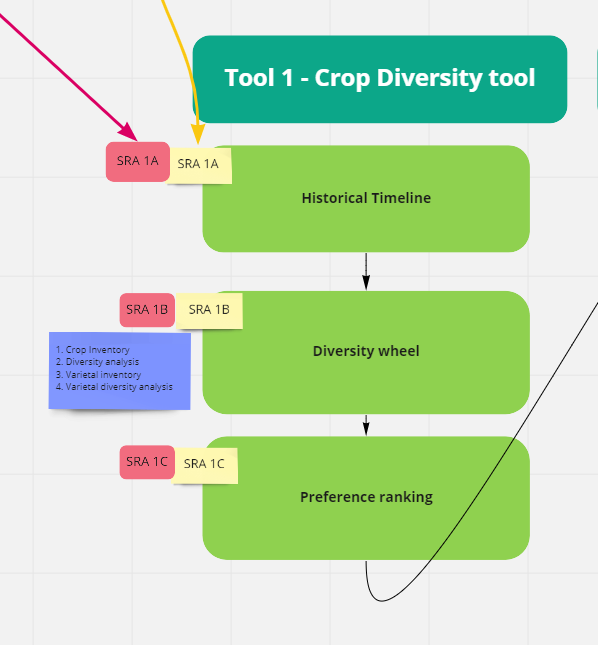
[List crops that are most affected by these hazards 6](#_Toc1934595157)

[Identify the crops that are perceived as resilient to climate change 6](#_Toc451113661)

[Analysis of climate resilient varieties based on farmers perceptions 6](#_Toc1108708596)

[Tool 3: SRA 3: Social Seed Network Analysis 7](#_Toc342470935)

# Tool 1 -SRA 1: Analysis of Crop Diversity Availability and Preference

****

**This consists of 3 tools**

1. Historical Timeline – SRA 1A
2. Diversity Wheel – SRA 1B
3. Preference ranking – SRA 1C

## SRA 1A : Historical Timeline [TBD: We can translate this tool into the mapping the conflict, insecurity, and climate hazards contexts. One of the critics of the SSRA is not being able to clearly map the conflict context. E.g. Context analysis tool of Mercy Corps did this step, we look at that tool and see how we can adapt our tool]

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Year** (from now up to 30 years ago) | **Major hazards** (shocks, stressors)  in the community | Major impact on livelihoods | Major impact on crops diversity and seed systems | Key Interventions |
|  | Examples: drought, floods, war, conflict, extreme heat, disease/pest attack. need to have a list. a drop down. With option to enter a new entry as “other” | Examples: increase of famine; forced to abandon the village; forced to abandon the country as refugees; loss of cattle; loss of household assets and income  need to have a list. a drop down. With option to enter a new entry as “other” | Examples: loss of specific crops and varieties (give list of crops and varieties); reduced crop yield; increased dependency on others for seed; started to receive free seed from NGOs; introduction of new crops and varieties (give list of crop and variety  names)  need to have a list. a drop down. With option to enter a new entry as “other” | Make a small dropdown with an “other”  Eg. Norwegioan chorch etc. |
|  |  |  |  |  |
|  |  |  |  |  |

## SRA 1B : Diversity Wheel

### SRA 1B1: Inventory of crop diversity –

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Field crops | Pulses and beans | Oil seed crops | Vegetables | Fruits | Fodder | Strategic crops in times  of crisis | Others (wild food crops, ...) |
|  |  |  |  |  |  |  |  |
| *Dropdown, with an “other” field to type in new entries, which are not in the list* | | | | | | | |

### SRA 1B2: Diversity wheel – crop based –

*“the input data on this table will come from SRA 1B1”. So only these crops only will feature in the drop-down list of this section ie SRA 1B2*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Many households and large areas | Many households and small areas | Few households and large areas | Few households and small areas | Lost crops |
|  |  |  |  |  |
| only these crops only will feature in the drop-down list of this section ie SRA 1B2 | | | | Dropdown . This entry field can have the whole list |

**Need to add the “why” questions. Why are you growing these in small area many households?**

Based on the SRA 1B1 and SRA 1B2, there must be a step where 10 crops can be prioritized. So, immediately after the crop-mapping step is done, the app must list out the crops in step 1B1, and checkboxes to do the prioritizing. See fig below

### Crop prioritization for varietal diversity analysis

**Prioritize (max 10)**

¨ Rice

þ Wheat

þ Sorghum

¨ Pearl Millet

þ Tef

þ Tomato

¨ Potato

þ Cowpea

¨ Crop xyz

þ Crop vccv

Go to next step =>

### SRA 1B3: Inventory of varieties of the prioritized crops –

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Wheat | Sorghum | Tef | Tomato | Cow pea | Crop vccv |  |  |
|  |  |  |  |  |  |  |  |
| *Dropdown, with an “other” field to type in new entries, which are not in the list* | | | | | | | |

### SRA 1B4: Diversity wheel – Varieties of priority crops- based –

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Many households and large areas | Many households and small areas | Few households and large areas | Few households and small areas | Lost varieties |
|  |  |  |  |  |
| only those varieties will feature in the drop-down list of this section ie from SRA 1B3 | | | | Dropdown . This entry field can have the whole list. Or we can have it an open entry |

## SRA 1C: Preference ranking (Male and female separate data)

SRA 1C1: Identification of crop preference criteria

First step is to identify what are the ‘key’ criteria that male or female farmers select to choose their most preferred crops. These criteria we already can prepare in dropdown menu and new criteria can be added during the interview in Others [specify clearly] option. We give a maximum of 10 criteria possibility to select. After this step, the selected criteria would directly go to the table as in step 2. Also, the same criteria will be used for Variety preference ranking steps. I.e. there will be same sets of criteria for preference ranking of crop and variety.

### SRA 1C2: Crop preference ranking

This tool will take the data of the crops from the tool “Crop prioritization for varietal diversity analysis”, ie. The step that happens between SRA 1B2 and SRA 1B3

Choose 5 crops

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Crops  Traits | Wheat | Sorghum | Tef | Tomato | Cow pea | Crop vccv | **<-** this data comes from “crop prioritization” step |
| Good yield |  |  |  |  |  |  |  |
| Drought tolerant |  |  |  |  |  |  |  |
| Flood tolerant |  |  |  |  |  |  |  |
| Good eating quality |  |  |  |  |  |  |  |
| High market demand |  |  |  |  |  |  |  |
| Less damage by birds |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |

In this step, a 1 to 10 scoring is to be awarded to the crops against the traits

### SRA 1C2: Varietal preference ranking

This tool will take the data of the varieties from the varieties of the crops that are prioritized ie. SRA 1B3. There must a logic where only those varieties will be listed that are present in the SRA 1B3 of the prioritized crops

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Varieties  Traits | Sorghum v1 | Sorghum var 2 | Sorghum var 3 | **<-** this data comes from “variety prioritization” step |
| Good yield |  |  |  |  |
| Drought tolerant |  |  |  |  |
| Flood tolerant |  |  |  |  |
| Good eating quality |  |  |  |  |
| High market demand |  |  |  |  |
| Less damage by birds |  |  |  |  |
|  |  |  |  |  |

# Tool 2: SRA 2: Analysis of Climate Resilient Crops and Varieties

This part is going to be a little bit tricky , as all the steps are interlinked and the data of one step will be used to provide information on the next step. So here , this is going to be a single tool but we will have different entry forms, and each of the forms will be interconnected using a logic, that will be explained later. The primary objective, stepwise, is going to be to identify the key hazard elements, then to identify which crops are most affected by them, and how is the seed source being affected. In this same tool, it will also be identified using a group discussion what are the crops that are perceived to be most resilient to the climate hazards listed in the steps above. Also, not only the crops, but also within the crops the most resilient varieties will also be listed and ranked. Finally a small measurement of the community based measures that might be effective in developing the resilient seed systems will also be enumerated. So this the tool is going to be composed of many smaller steps and different entry forms which are interconnected .

### Identification of the key hazards of Climate Change

|  |  |  |
| --- | --- | --- |
| Climate hazard | Impact on livelihoods | Severity (+++, ++,+)/ **red/orange/green** |
|  |  |  |
| *Dropdown from a list. With option of “other” and Type* | *Dropdown from a list. With option of “other” and Type* | *Select the 3 levels of severity* |
|  |  |  |

### List crops that are most affected by these hazards

|  |  |  |
| --- | --- | --- |
| Crops that are most affected | Climate hazard | Major sources of seed to the community |
| C1 | H1 | S1 |
| c2 | h1 |  |
| *Dropdown from a list. With option of “other” and Type* | *Dropdown from a list. The list will only have the hazards selected in the earlier step* | *Dropdown from a list. With option of “other” and Type* |
|  |  |  |

### Identify the crops that are perceived as resilient to climate change

This is a ranking/ scoring exercise

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Crops** | **Climate hazards (Score 1=Least resilient, Score 10= Most resilient)** | | | | | | | **Resilience score** *(auto calculated)* |
| Drought | Floods | Delayed rain | Heat | Disease | Pests | Other *(Type)* |
| Crop1 |  |  |  |  |  |  |  |  |
| Crop 2 |  |  |  |  |  |  |  |  |
| Crop 3 |  |  |  |  |  |  |  |  |
| *Dropdown from a list. With option of “other” and Type. Number of crops can be any* | *Type a value from 1 to 10 based on the degree of resilience* | | | | | | | Automatic calculation |

### Analysis of climate resilient varieties based on farmers perceptions

We do the similar exercise, but with the varieties of the identified, most resilient crops. There can be a logic to show only the top 5 or top 8 crops, based on the resilience score in the earlier form

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Crops** | **Varieties** | **Type** | **Characteristics** | **Major/ most dominant seed source** | **Climate hazards (Score 1=Least resilient, Score 10= Most resilient)** | | | | | | | **Resilience score** *(auto calculated)* |
| Drought | Floods | Delayed rain | Heat | Disease | Pests | Other *(Type)* |  |
| Crop1 | Var 1 |  |  |  |  |  |  |  |  |  |  |  |
| Crop 2 | Var 12 |  |  |  |  |  |  |  |  |  |  |  |
|  | Var 13 |  |  |  |  |  |  |  |  |  |  |  |
|  | Var 14 |  |  |  |  |  |  |  |  |  |  |  |
| Crop 3 | Var 32 |  |  |  |  |  |  |  |  |  |  |  |
|  | Var 33 |  |  |  |  |  |  |  |  |  |  |  |
| Dropdown from a list. With option of “other” and Type. Number of crops can be any | Type or drop down | List of “local”, “improved”, “dont know” | Select multiple from a list | **Select most dominant source** | Type a value from 1 to 10 based on the degree of resilience | | | | | | | Automatic calculation |

**Add a synthesis question**

**What are the community based efforts that contribute towards building the resilience of seed systems? What further actions could be taken?**

**Which stakeholders should be involved?**

~~Community-based measures towards developing resilient seed systems.~~

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| ~~Major crops~~ | ~~Key indicator crops~~ | ~~Seed systems~~ | ~~Effect of climate hazards~~ | ~~Community~~ |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

# Tool 3: SRA 3: Social Seed Network Analysis

The logic behing this questionnaire is that it may go on many loops. The **first loops** will be based on crops and varieties. That is, the “given to” and “received from part will repeat for different crops that the farmer is currently (or last year) exchanged(ing).

**The next 2 loops** are the 2nd and 3rd degree interviews, where the contacts given by the “starter” Key Informants will be interviewed. The basic loops will have the following format

|  |  |  |
| --- | --- | --- |
| **Question** | **example** | **example** |
| Round of interviews (Starters, 2nd, 3rd, 4th) | Starters | Starters |
| Survey number | 1 | 2 |
| First Name of respondent | Joyce | Asunta |
| Last Name of respondent | Abidi | Iturain |
| Mobile phone | 123456789 | 235467982 |
| Address- District/ County (or similar) |  |  |
| Address – Village Committee / Payam (or similar) |  |  |
| Address – one level below (Hamlet/ ward/similar) |  |  |
| Gender | 1 - Female | 0 - Male |
| Age | 43 | 32 |
| Education level | 1 - Never attended formal education | 7 - I refuse to answer |
| Category of respondent | 3 - Refugees | 7 - Agrodealer shop |
| Crop | Sorghum | Beans |
| Crop variety |  |  |
| Gave seeds to  OR  received seeds from | gave seeds to | received seeds from |
| First Name of source OR recipient | David | Chahari Market |
| Last Name of source OR recipient | Atawa | Chahari Market |
| Address of source OR recipient |  |  |
| Mobile phone of source OR recipient | 987654321 | 986735555 |
| Gender of source OR recipient | 0 - Male | 88 - N/A (Not applicable) |
| Category of source OR recipient | 3 - Refugee | 6 - Market |
| Relationship to the source OR recipient of seeds | 1 - Family/friends/relatives within payam | 4 - commercial (market, market trader, shop) |
| How did you exchange (give/receive) the seeds? | 1 - Free | 5 - Exchange/barter with labour |
| Major reasons for RECEIVING seeds? | 14 - N/A (Not applicable) | 9 - My existing variety has poor yield |
| Major reasons for GIVING seeds? | 3 - The person does not have enough seed | 16 - N/A (Not applicable) |
| Notes |  |  |

From the table above, we can see that this loop (in green highlights) repeats as we ask about more crops. If the farmer only has one crop / variety, the interview stops at that point

**Digitalization Logic**

Tool 4: Seed production and sales [TBD: Seed production and sale/or distribution data from CSB, CBSP/LSB, NGOs and Public seed programmes, and Private seed companies on seed production and sales at country, state, and county level]

Tool 5; Seed sector landscape analysis [TBD: This is done through literature review and stakeholder interview to map the stakeholder's interventions in the seed sector at country, state, and county level]

Tool 6: Seed systems analysis

Tool 7: Seed value chain analysis