Digital Seed Systems Resilience Assessment Suite

- *Rationale and Budgeting*

Contents

Introduction:

The digital Seed Systems Resilience Assessment toolbox is a cutting-edge application suite designed to support practitioners in the field of seed systems resilience assessment. It comprises a set of interconnected tools that enable users to conduct detailed assessments of crop diversity, seed network structure and dynamics, and seed system resilience. This toolbox is designed to provide practitioners with the necessary information and insights to identify areas for improvement and take action to enhance the resilience of seed systems.

Crop Diversity Assessment Tool:

One of the key components of the toolbox is the Crop Diversity Assessment tool, which allows users to assess the diversity of crops within a given seed system. This tool utilizes a range of data sources, including farmer surveys, plot observations, and genetic data, to provide a comprehensive overview of the crop diversity present in a particular seed system.

Resilience Analysis Tool:

The Resilience Analysis tool is designed to help users understand the resilience of a seed system in the face of various stressors. This tool utilizes a range of data sources, including climate data, market data, and farmer surveys, to provide a comprehensive analysis of the resilience of a seed system.

Seed Network Analysis Tool:

The Seed Network Analysis tool is designed to help users understand the structure and dynamics of seed networks within a seed system. This tool utilizes a range of data sources, primarily farmer surveys, to provide a detailed analysis of the seed network structure and dynamics. We get how a farmer receives, exchanges and give away seeds of specific varieties of crops, within a community

Developer

We already have a developer who can work on this in the stated timeframe. They worked with us in Myanmar on Digital databasing and reporting for seed quality assurance. They are good.

Suite Technicalities

1. Input modules Based on Android, iOS with **offline** data capturing capabilities. A good thing to have in the field.
2. Back-end will be web based with secure logins and will have the data viewing and report making tools. We can choose the report we want to publish and select data/regions/crops based on filters and slices
3. The Tool 3 will generate network nodal diagrams which can be incorporated in a customized report of our choice

The Suite Algorithm
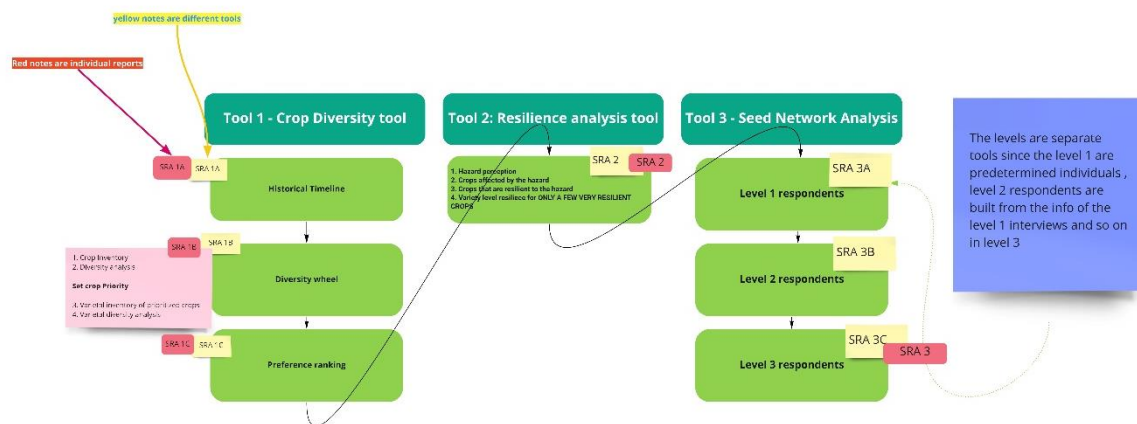
The above figure shows the array how the tools will be operating.. So in general there will be 3 tools.

- SRA-1 : Crop Diversity Analysis Tool (**SRA** is short for Seed Resilience Analysis)
- SRA 2: Resilience Analysis Tool
- SRA 3: Seed Network Analysis Tool

The below list shows the detailing of the different sub-tools/databases within the individual tools.(refer to the Forms List document for more information on these data bases)

Tool 1 (SRA 1): Analysis of Crop Diversity Availability and Preference

- SRA 1A : Historical Timeline
- SRA 1B : Diversity Wheel
- SRA 1B1: Inventory of crop diversity
- SRA 1B2: Diversity wheel – crop based
- Crop prioritization for varietal diversity analysis
- SRA 1B3: Inventory of varieties of the prioritized crops
- SRA 1B4: Diversity wheel – Varieties of priority crops- based
- SRA 1C: Preference ranking (Male and female separate data)
- SRA 1C1: Crop preference ranking
- SRA 1C2: Varietal preference ranking

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

- Identification of the key hazards of Climate Change
- List crops that are most affected by these hazards
- Identify the crops that are perceived as resilient to climate change
- Analysis of climate resilient varieties based on farmers perceptions

Tool 3: SRA 3: Social Seed Network Analysis

- Level 1: interviews from Level 1 farmers about crops grown, varieties used, **from where** received seeds and **to whom** seeds given away/sold
- Level 2 will interview those farmers mentioned in Level 1 ("from where" and "to whom")and get the same information. In this level also we ask the "from where" and "to whom" movement of seed varieties
- Level 3 will again have the same questions and those farmers woe were mentioned in level 2
- This data will feed into a third party software (either GEPHI or UCINET)

Outputs

This tool will be able to do the following

1. Collect the data directly from Individual farmers and from a farmers group meetings or from a focus group discussion
2. Analyze the results and generate CUSTOMIZED reports as we want them
3. Store the data in the cloud for future reference

Budget

The budget is as under

- Development costs – EUR 10,000/-
- Hosting, domain and maintenance (5 years) – EUR 4,000/-
- Days for Arnab – 27
- Days for Abishkar – 8
- Days for Christophe Rodier (seed network analysis tool, Tool 3) – EUR 1,000 (5 days @ Euro 200/day)
- English edit of e-tool text (Jo Weeks) – EUR 600/-

Timeline and key milestones (Assuming Contract signing on Jan 8, 2023)

Milestone code	Activity	Time line	Timeframe, activity complete date (approx)	Responsible
D01	Onboarding and understanding of the logic and the outputs by the Developer	1 week	By Jan 13	Developer & WCDI
D02	Creating the Input models for Tool 1, Tool 2 and Tool 3	2 weeks	By Jan 27	Developer
D03	Feedback on the input modules	2 days	By Jan 31	WCDI
D04	Creating the reporting architecture for Tool 1 and Tool 2	3 weeks	By Feb 17	Developer & WCDI
D05	Testing and feedback	1 week	By Feb 24	Developer & WCDI
D06	Making the hostings, server configurations and taking these 2 tools online	1 week	By March 3	Developer
D07	Working on the integration of GEPHI or UCINET for the Tool 3 reporting	2 weeks	By March 17	Developer & WCDI
D08	Testing the tool 3 reporting	1 week	By March 24	Developer & WCDI
D09	Bug fixing and launch	1 week	By March 31	Developer & WCDI
D10	Training Enumerators	2 weeks	Henceforth	WCDI
D11	Deployment	1 week	Henceforth	WCDI
D12	Level 2 feedback and bug fixing	1 week		Developer & WCDI

January 2023

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

D01
Onboarding and understanding of the logic and the outputs by the Developer

D02
Creating the Input models for Tool 1, Tool 2 and Tool 3

D03
Feedback on the input modules

February 2023

S	M	T	W	T	F	S
			1	2	3	4
	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28				

D04
Creating the reporting architecture for Tool 1 and Tool 2

D05
Testing and feedback

D06
Making the hostings, server configurations and taking these 2 tools online

March 2023

S	M	T	W	T	F	S
			1	2	3	4
	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

D07
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D08
Testing the tool 3 reporting

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Bug fixing and Launch