Genebanks and Seed Systems Toolkit

Cross-linkages among seed system actors

The following tool can be used to compile information on the interactions between seed system actors. The main objective is to identify to what extent the seed system actors interact with each other. The main focus is on the linkages between the genebank and other actors; however, it includes interactions among all actors. The tool will also encourage a holistic overview of the functioning of the seed system as a whole.

The tool uses a rating matrix to facilitate discussion about the pairwise interactions among actors. The tool can be carried out in a participatory analysis with a group of relevant stakeholders (i.e., during the launch workshop). Information collected from key informants (i.e., questions on cross-linkages and coordination breakdown in sections 1-5 above) will also contribute insights.

Source: The approach is adapted from the "System Dynamics" tool, published in Chevalier & Buckles' (2013) Handbook for Participatory Action Research: SAS2 Dialogue.

Procedure in a workshop setting:

Step 1: Define the **seed system actors** relevant to the national context. Include the main actors involved in formal and informal and cover the main seed system functions and contexts (sections 1-5). Write the names of each actor on a card. Make two sets of cards.

Step 2: Create a **matrix** on the floor or wall. Place one set of cards with the actors' names in the top row and the second set (in the same order) in the first column (see example in Table 1 below).

Step 3: Decide on a **rating scale** to assess the level of contribution that one actor makes to another. We suggest using a 4-point scale: 0=no contribution, 1=minimal contribution, 2=moderate contribution, 3=significant contribution. Ensure that the scale is clear and easily understood by the participants, if needed, refine the labels/definitions for each point in the scale. You may also discuss what criteria might be considered when rating the level of contribution among seed system actors, i.e., the importance of the contribution to the other actor, reliability/consistency of support, etc. Record the definitions agreed upon.

Step 4: Facilitate the discussion using the rating matrix.

- Ask participants to **rate the level of contribution** that each actor currently makes to each other actor using the scale agreed upon in Step 3. Starting with the first column (e.g., genebank in the example below), ask in turn how each actor listed

in the rows contributes to this actor, e.g., "At what level do plant breeders contribute to the genebank? How?"

- Record each **score** on its own card and write the **reason** given for each score on the reverse side of the card or on a flipchart. Documenting the reasons given is critical to the exercise. Document also differences in opinion (if any).
- Place the card in the appropriate cell in the matrix. Leave empty all the cells that combine an actor with itself (e.g., the black cells in the example below).
- Proceed with the rating exercise one column after another. This will ensure that the direction of the contribution is clear and consistent (always ask how the actors in the rows contribute to the actor in the column being discussed).

Step 5: Once the matrix is complete, total all scores in each row and write "**Total contribution**" in the heading of the last column. Write the total for each row in this column The provides an estimate of the overall contribution of each actor to other actors in the seed system.

Step 6: Total all scores in each column and write "**Total dependence**" at the beginning of the last row. Write the total for each column in this last row. This provides an estimate of the overall dependence of each actor on all other actors in the seed system.

Step 7: As a final step it is possible to use the total contribution and dependence scores to produce a "system dynamics diagram" (see example in Figure 1 below) summarizing the level of contribution/dependence of the seed system actors. This can be used to validate the results and facilitate a discussion on entry points for improving the integration of different actors, including genebanks.

Table 1. Rating matrix for assessing cross-linkages among seed system actors

	Genebank	Plant breeders	Farmers	Local seed businesses	NGOs	Ag. extension	Private seed companies	Agro-dealers	Ministry of Agriculture	CGIAR Centers	**Total contribution**
Genebank											
Plant breeders											
Farmers											
Local seed businesses											
NGOs											
Ag. extension											
Private seed companies											
Agrodealers											
Ministry of Agriculture											
CGIAR Centres											
Total dependence											

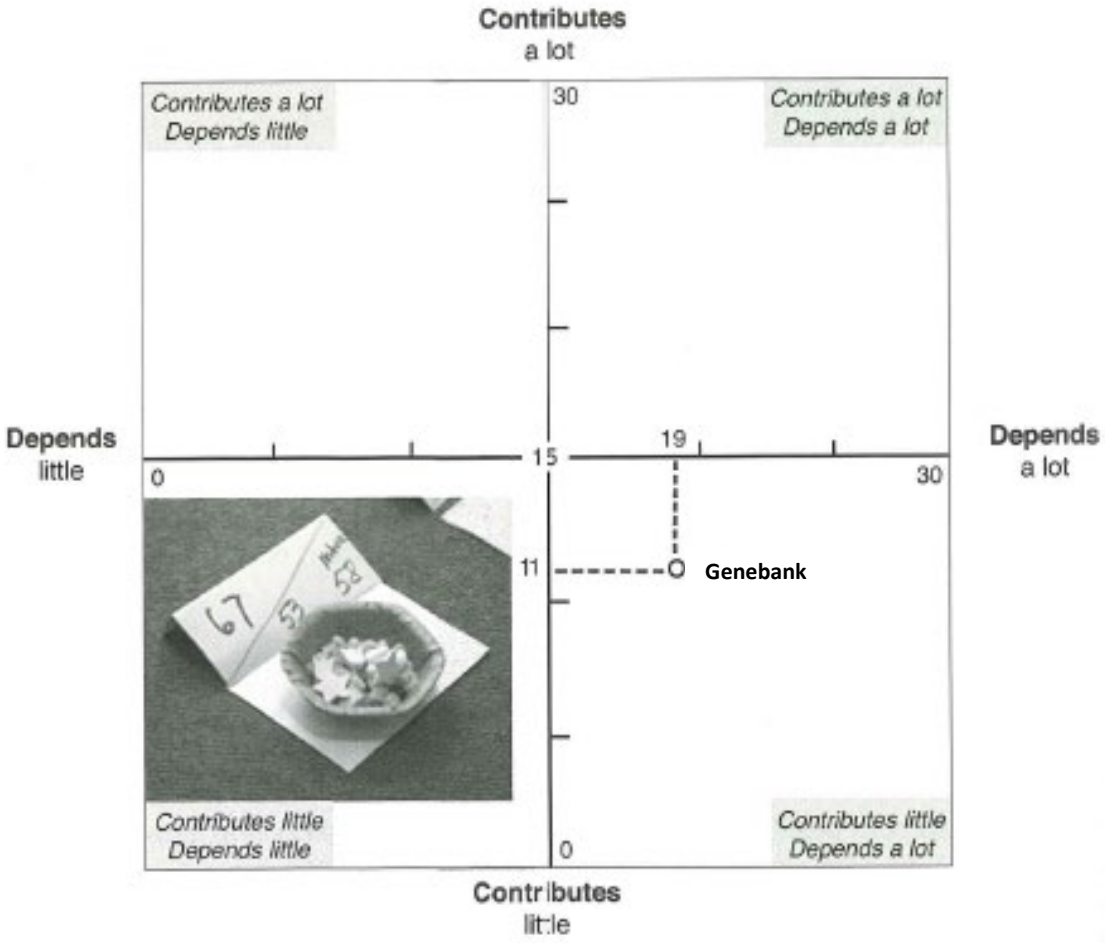

Figure 1. Example of a system dynamics diagram. Each actor is located in the diagram by marking where the actor's total contribution score is located on the vertical line and the actor's total dependence score is on the horizontal line, and indicating the actor's name. Once all actors are marked, the diagram provides an overview of the results from the rating exercise that can be used to guide further discussion and interpretation of results by participants.