1. **Purpose:** scenario analysis to evaluate seed system outcomes. Potential scenarios include: (a) management strategies to address a pathogen spreading through seed systems, (b) strategies for enhancing availability or access to certain crop varieties, (c) management strategies for gender-specific structures and outcomes, and (d) general strategies to optimize seed system outcomes.

2. **Level:** can be applied at a range of resolution and extent. Resolution: network nodes might be farmers or countries. Extent: the focus might be on a village or global.

3. **Users of the tool:** scientists and analysts who design, implement or evaluate seed systems. INA may be used by people of different levels of experience with programming.

4. **Output of the tool:** scenario analysis answering key questions identified by the research group, and new input for prioritizing field studies.

5. **Audience of the output:** scientists and analysts, extension, policy makers and donors.

6. **Minimum sample size:** the analysis can be adjusted based on the sample size, with more limited data resulting in a more speculative analysis, and more data resulting in greater precision.

7. **Resources**
   a. Design scenarios for evaluation: research groups identify the most important questions and they design scenarios to evaluate the questions.
   b. Access or collect initial relevant data (either by conducting a survey or using data previously collected).
   c. Network analysis: estimates of the structure of the key networks are evaluated to understand the networks individually and as input into INA.
   d. Scenario analysis: analyze the outcomes for each scenario in repeated computational simulations. Sensitivity analysis and uncertainty quantification may be used to understand the system’s most important parameters, which might be a focus for future field studies.
   e. Iterative interactions with field studies: scenario analysis generates new hypotheses that can be tested in the field, while data gathered during further field studies provide new parameter estimates for the next phase of scenario analyses.
   f. Integrating seed degeneration models, for some questions: to incorporate the risk of disease at individual nodes, as a function of factors such as weather and disease resistance.
8. **Timing:** before, during and after a study or a new seed system intervention or implementation

9. **Duration:** after collecting the data and organizing it, preliminary analysis might take only a week, while further study could take a few months, or a year if the collaborators want to publish the results

10. **Steps**
   a. Design scenarios for evaluation: research groups identify the most important questions and they design scenarios to evaluate the questions
   b. Access or collect initial relevant data (either by conducting a survey or using data previously collected)
   c. Network analysis: estimates of the structure of the key networks are performed to understand the networks individually and as input into INA
   d. Scenario analysis: analyze the outcomes for each scenario in repeated computational simulations. Sensitivity analysis and uncertainty quantification may be used to understand the system’s most important parameters, which might be a focus for future field studies
   e. Iterative interactions with field studies: scenario analysis generates new hypotheses that can be tested in the field, while data gathered during further field studies provide new parameter estimates for the next phase of scenario analyses
   f. Integrating seed degeneration models, for some questions: to incorporate the risk of disease at individual nodes, as a function of factors such as weather and disease resistance

11. **Which methods can be used in combination with the tool:** surveys or other methods to gather data (such as described in the seed tracing user guide), and modeling

12. **Gender:** can evaluate how well a system provides benefits for participants, by gender, e.g. the probability of access and availability (gender responsiveness level 1: gender is a significant factor in this tool, but it is not the main reason for using it)


15. **Applications**


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