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Problem Tree Analysis: A strategic PRA tool for understanding the rural challenges

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ABSTRACT

Problem Tree Analysis or Cause Effect Analysis is an important Participatory Rural Appraisal (PRA) tool used for understanding and assessing the grassroots problems of farmers in the broad field of agriculture. It gives clear picture of the existing farm related problems further helps farmers to prioritize, adopt appropriate strategies and take right decision to address the farm related challenges. The tools also helps project planners, extension functionaries and agricultural researchers to identify clear and manageable goals and the strategy of how to achieve them. There are three stages in this analytic process: (1) the identification of the negative aspects of an existing situation with their "causes and effects" in a problem tree, (2) the inversion of the problems into objectives leading into an objective tree, and (3) the decision of the scope of the project in an analysis of strategies.

Keywords: Problem Tree Analysis, farmers, PRA tools

INTRODUCTION

In the context of agricultural and rural development, community mobilization, and project management, we often face a common dilemma: we see the symptoms of a problem, but we struggle to identify its true cause. We treat the fever without realizing the infection, or we patch a leaking roof while ignoring the cracked foundation. This is where Problem Tree Analysis, a flagship tool of Participatory Rural Appraisal (PRA), becomes indispensable. It is a simple, visual, and highly

participatory method that helps farm communities and agriculture practitioners move beyond symptoms to map out the root causes and far-reaching effects of a central issue. At its core, Problem Tree Analysis (also known as situational analysis or root-cause analysis) is a structured exercise. It transforms a vague, overwhelming problem into a clear, hierarchical diagram that resembles a tree (Mukherjee, 1993). It has three distinct parts:

- The Roots (Causes): The underlying reasons why the problem exists.
- The Trunk (Core Problem): The central issue the community wants to solve.
- The Branches (Effects): The direct and indirect consequences of the problem.

Originally popularized through PRA, which emphasizes local knowledge and bottom-up planning, this tool flips the traditional expert-led model by allowing the farming community itself to build the tree along with expert guidance, ensuring the analysis is accurate, relevant to the farmer's problem at the field level.

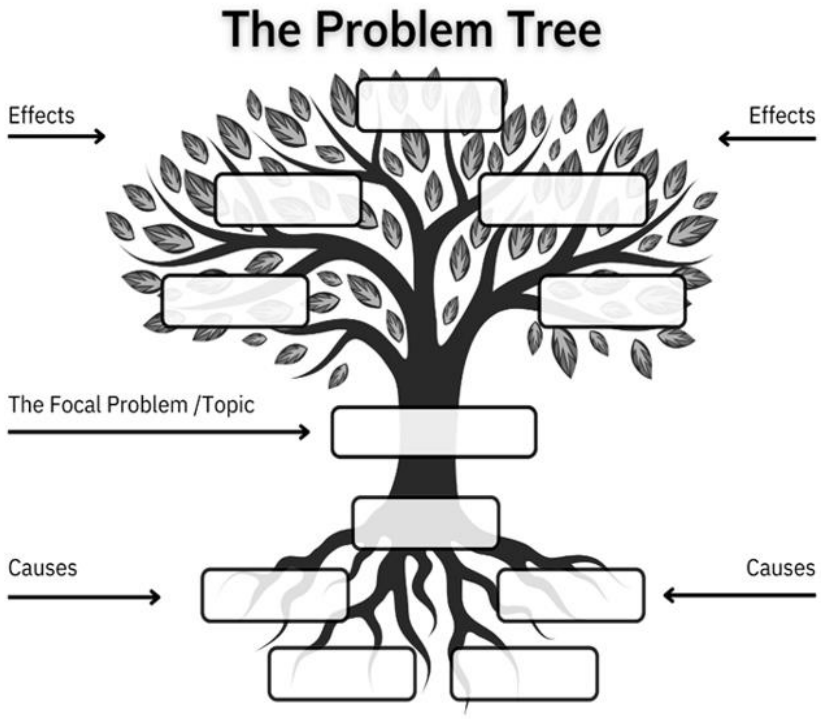

Fig 1: Structural Framework for Problem-Tree

Traditional problem-solving often jumps to solutions too quickly, but a Problem Tree forces a necessary pause. It offers several unique advantages, especially within a PRA framework (Chambers, 1997). First, it differentiates causes from symptoms, preventing village level extension functionaries from treating effects as if they were the root disease. Second, by using simple visuals such as cards, markers, and a wall, even non-literate farmer-members can participate equally, ensuring that everyone's perspective is valued. Third, it reveals interconnections, showing that problems are rarely isolated; for example, a single root cause like poor soil fertility may lead to multiple effects including low yields, malnutrition, and migration. Finally, it provides a logical

roadmap for action, as once the tree is built it can be easily transformed into an Objective Tree by turning negatives into positives, which becomes the direct blueprint for a project plan.

Fig 2. Preparation of Problem Tree Diagram of village by agricultural graduates through PRA

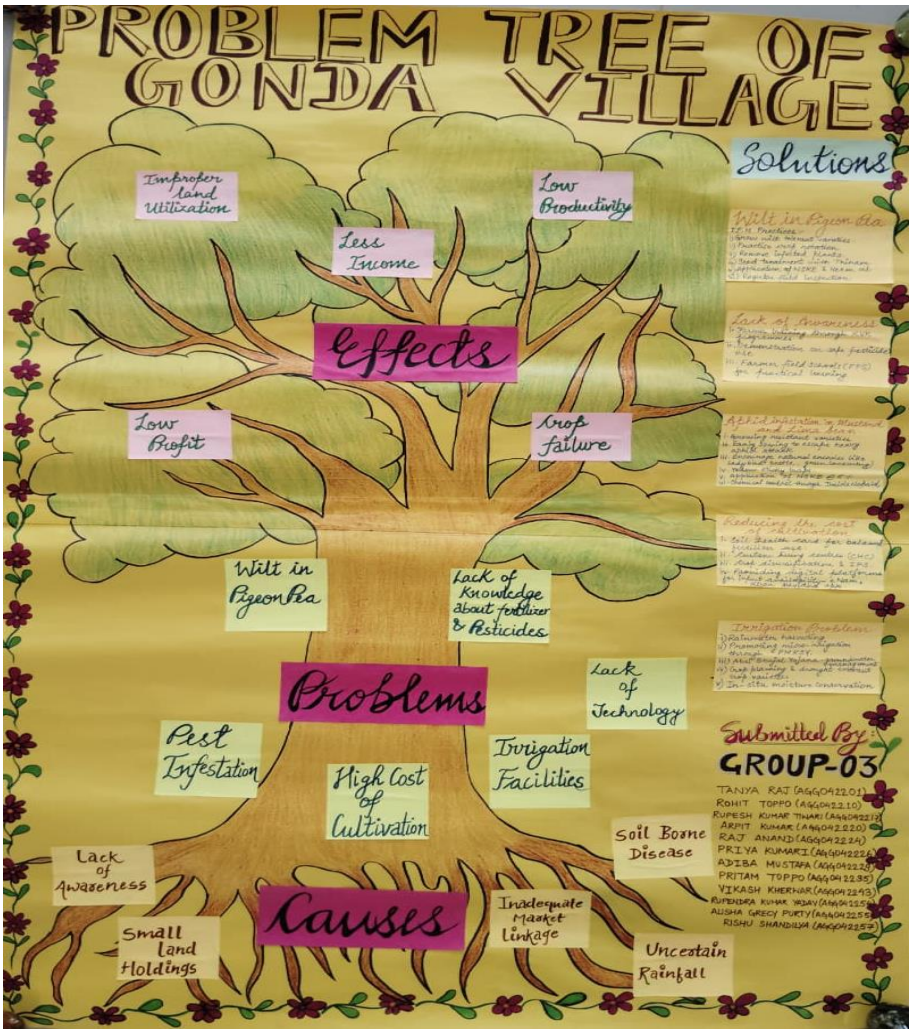

Fig 3. Problem Tree Analysis of Village (Gonda) in Garhwa District of Jharkhand

Building a Problem Tree is best done with a diverse group of six to fifteen farm community members, a facilitator, a large wall or paper, and sticky notes. The first step is to identify the trunk by asking the group to agree on a single, central problem that is both current and specific, avoiding vague statements like "poverty" or solution-oriented phrases such as "lack of irrigation pumps." A well-defined core problem might be "low rice yield per hectare during the rainy season." Next, the group finds the roots by asking "Why does this problem exist?" and then digging deeper with repeated "why" questions until the underlying causes are revealed. For instance, low yield may be due to poor soil fertility, which results from no access to organic fertilizer, which in turn exists because livestock numbers have decreased following a disease that killed local cattle. After the roots are mapped, the group identifies the branches by asking "What happens because of this problem?" Low rice yield might lead to less household food supply, which causes children to go hungry and lose concentration in school, ultimately leading to high dropout rates and poor future employment prospects. Finally, the group arranges and connects all the cards, placing the core problem in the centre, causes below it as roots, and effects above it as branches, then drawing arrows to show the chain of causation while encouraging debate if disagreements arise.

To see this method in action, consider a practical example of child malnutrition in a rural village. The core problem is identified as a high rate of acute malnutrition in children under five. The roots, or causes, include direct factors like poor maternal nutrition, inadequate food intake, and high rates of diarrhoea, along with underlying causes such as households being unable to afford diverse foods, reliance on only maize cultivation, and a distant clean water source. Basic causes may include lack of non-farm income, climate change shortening growing seasons, and the absence of a local health post. The branches, or effects, range from immediate consequences like frequent illness, low energy, and stunted growth to long-term outcomes such as poor cognitive development, failure to thrive in school, reduced adult productivity, and at the community level, increased healthcare costs and perpetuation of the poverty cycle. This tree immediately shows that a simple food distribution program would fail unless it also addressed water access, crop diversity, and income generation.

The true power of this tool lies in its transformation from a Problem Tree to an Objective Tree, which becomes the action plan. Once the Problem Tree is complete, you simply negate each statement to create a solution-oriented diagram. For example, the problem of low rice yield becomes the objective of high rice yield; the root cause of poor soil fertility becomes the solution of improved soil fertility management; and the effect of child malnutrition becomes the goal of reduced child malnutrition. This Objective Tree then serves as the logical framework for a project proposal, showing exactly which solutions address which causes and which outcomes will result (Theis and Grady, 1991). However, practitioners should avoid common pitfalls such as drawing the tree behind closed doors instead of with the community, confusing means with ends (for example, calling "lack of training" a root cause when the real cause is that farmers lack knowledge of pest control).

CONCLUSION

Problem Tree Analysis is more than just a diagram or PRA tool that is used to analyse a central problem by identifying it’s root causes and resulting effects; it is a shift in mind-set that forces extension development functionaries, NGOs, and community leaders to resist quick solutions and instead dig deep to uncover the roots of problems before proposing solutions. This helps in

understanding the issue clearly and finding appropriate solutions. When used sincerely in a PRA context, it empowers farming communities to realize that they are not passive victim s of their problems, and by understanding the architecture of their challenges, they become the architects of their own solutions, which is the very heart of participatory development.

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