Problem Tree Analysis

What is it?

The Problem Tree method is a planning method based on needs, however it is not a mechanical translation of problems into objectives. While going through the process, taking the different steps, there is continuously room for opportunities, new ideas and contributions from the involved parties. Problem Tree Analysis should be followed by actual project planning, e.g. with the Logical Framework approach. Alongside, or interwoven with the steps of Problem Analysis (at target group level) and project planning (for the target group), one should analyse the capacity and intentions of stakeholders and the wider institutional context, so that relevant and realistic choices can be made on who does what.

> **Participatory methods**
>
> *'The better and more participatory the method for identification, the more likely it is that different aspects of poverty and inequality among the poor will appear, such as those of gender, age, class and ethnicity. It also gives particular insight in the distribution of power within the target groups. The challenge is how to manage these differences and address the varying needs, interests and opportunities with them' (from Building bridges in PME).*
>
> *A successful outcome of using participatory methods depends on the familiarity of the facilitator with the method, the attitude of the facilitator and the implementers and the amount of time that is reserved to do the identification and planning. Particular efforts are made to involve <u>all</u> members of a community into participatory action planning.*

What can you do with it?

Basic (sub-) questions

- address the real needs of the beneficiaries

Results

- This process will result in an 'image of reality', enabling the formulation of projects that comprise objectives that have been accepted and supported by all parties concerned. Information collected through these methods can be used as input for a project planning workshop.

How to use it?

Process

A properly planned project addressing the real needs of the beneficiaries is necessarily based upon a correct and complete analysis of the existing situation. The existing situation should be interpreted according to the views, needs, interests and activities of parties concerned. It is essential that all those involved accept the plans and are committed to implement them. The Problem Tree Analysis belongs to the family of *participatory* planning techniques, in which all parties involved identify and analyse the needs together. Participatory methods aim to create ownership and commitment among the involved parties (e.g. beneficiaries, implementing organisations, local governments).

Three stages in the analysis process in the Problem Analysis method will be discussed:
- the **analysis of problems** related to the subject (the image of reality);
- the **analysis of objectives** (the image of a future, improved situation);
- the **analysis of strategies** (the comparison of different chains of objective).

There are several complementary methods to analyse a situation:
- expert studies giving answers to questions as experts conceive them;
- interviews with representatives of concerned groups and organisations providing perceptions as existing within that particular group or organisation;
- a meeting, in which representatives of all parties concerned, including experts, discuss the same questions in a participatory way, often leading to an analysis, which is shared by all (e.g. Participatory Rural Appraisal).

1   Problem analysis

The problem analysis is of major importance with regard to project planning, since it strongly influences the design of a possible intervention(s). It is the basis and the justification for the project design. The problem analysis includes:
- verification of the subject of analysis;
- identification of problems related to the subject; make and inventory of all problems perceived by all participants in the workshop;
- establishment of a cause-effect hierarchy between the problems;
- visualisation of the cause-effect relations in a diagram.

It is important that all participants get the chance to express the problems they experience. After discussion and clarification by the 'problem owner' all problems should be respected.

It is important to determine whether the different groups of people perceive the problem in the same way; if not the problem should be reformulated or split. For example, if the problem mentioned is 'our family income is not sufficient', for a woman it could mean that she cannot buy vegetables and meat, whereas for the man in the family this could mean that he is not satisfied about the yields.

Do's and Don'ts in formulation of problems

Don'ts:		Do's:
No big balloons or big vague concepts, e.g. no infrastructure	**but**	Be precise, e.g. there is no paved road from Chittoor to Mahabubnagar
No absent solutions (danger: you block alternatives), e.g. we have a lack of money and thus children don't go to school	**but**	Instead, the problem is: school fees are not affordable
No non- existing problems, e.g. no existence of NGOs (in former dictatorial countries possibly a problem in the past)	**but**	The problem now is that there is no knowledge on how to run an NGO
No formulation of interpretations, e.g. the government is lazy	**but**	The government does not issue licenses
And further: explain abbreviations and jargon		

After a common understanding of all problems is reached, the analysis is presented in the form of a diagram, or a problem tree. A problem is never an isolated negative perceived situation, but relates to other problems. In the problem tree the relations and hierarchy among all identified problems is expressed. Each stated problem is preceded by the problem(s) which cause(s) it, and followed by the problem it causes itself. For example: the rice production in the low lands is decreasing due to the irrigation water not reaching the fields and due to the fact that there is an irregular supply of inputs for rice production. The problem of a decreasing rice production itself contributes to the problem of food shortages.

2   Objectives analysis
After the problem analysis follows the analysis of objectives. This analysis includes:
- the translation of the negative situations in the problem tree into a realised positive state (the objectives) for example, 'low rice production' is converted into 'improved rice production';
- verification of the hierarchy of objectives;
- visualisation of means-end relationships in a diagram.

Also in this step it is of importance that all stakeholders are involved. While transforming problems into objectives and verifying the hierarchy, discussion and feedback on the objectives is done. This helps building consensus amongst the stakeholders. It might also be necessary to reformulate some of the problems.

Next, often the objective tree shows many objectives that cannot all be reached at once. Therefore, choices will have to be made. Certain objectives seem unrealistic, too ambitious or not feasible within the context of a possible intervention, so that other solutions need to be generated for the problem concerned. However at this stage of the planning these choices are not yet made. Still all possible ways (objectives) to achieve the desired future situation are considered.

3   Analysis of strategy (see further 'Strategic Options' tool)

After having formulated the desired future situation the selection of possible interventions starts. To analyse the strategies for implementation the following steps are taken:

- identification of the different possible groups of objectives contributing to a higher objective (clustering);
- choice of a strategy for the intervention, choosing the scope of the project (scoping).

In the process of clustering and scoping it is important to realise that the aim is to contribute the maximum possible to an overall objective, keeping in mind the priorities of the beneficiaries, and the limitations and possibilities of the implementing organisation.

In the diagram of objectives, the different objectives sharing the same nature can be considered to be clusters. The clustering should be based on common sense and should be of practical value in the planning stage. The clusters should be neither too broadly nor too narrowly defined. It concerns the identification and selection of potential alternative strategies towards realising all or some of the objectives. Clusters are made based on similarity of possible future activities, region or required expertise.

In the demonstration case these clusters are irrigation system, agricultural inputs, soil fertility and immigration. For each of these clusters a different type of expertise is needed.

Out of the clusters, one (and often more) will be chosen and used as the strategy to achieve a future desired situation: the aims of the intervention. This is called scoping, or choosing a strategy. Based on a number of criteria, the most relevant and feasible strategy is selected. Unrealistic objectives should be excluded and objectives that certainly should be included should be prioritised. The criteria have to be chosen and agreed upon by all stakeholders. Examples of possible criteria:

- priorities of beneficiaries
- expertise and experience of implementing organisation
- duration of implementation
- urgency
- contribution to overall objectives
- inter-linkages between clusters
- positive/negative side-effects
- sustainability
- fit with mandate of implementing organisation

- donor policy
- fit with mandate of government authorities, sectoral policies
- contributions of different stakeholders
- available human resources, institutions
- available budget
- shift in power relations
- gender and social diversity aspects
- likelihood of success

Groundwork

Preparatory phase

1   Define the subject
The first thing to do is to define the subject based on which the exercise will be done. The subject is the framework for the discussion; no more and no less. The relevance of the subject is to be discussed with the stakeholders (social actors that have a relation to the subject). As soon as stakeholders are identified and invited to participate, the subject is checked and a consensus on it should be reached. The subject needs to be understood by all parties. Care should be taken that the formulation as such does not unintentionally exclude certain (target) groups.

2   Stakeholder analysis (see also the 'Stakeholder analysis' tool)

It is important that all stakeholders get a chance to express their experiences and ideas for the (new) project. Ideas from all different perspectives should be respected and used. Not only individuals can be stakeholders, also organisations that have a social relation the subject need to be involved. The active participation of old and young women and men, married people, single headed households, landless, higher class and lower class, etc. means that a representative group out of the beneficiaries is taking part in the process of project development and implementation.

Depending on the setting, the following actors may be involved in the preparatory and analysis phases:
- local communities, the 'problem owners'
- donor organisation
- implementing or grassroot organisations, NGOs
- local government officials
- facilitator who will do the moderation of the workshop

Follow up

Planning should continue with:

- Developing the logical framework (in 'Logical Framework' tool)
- Assessing and documenting assumptions and risks (in 'Assumptions' tool)
- Defining targets, benchmarks and (in 'Indicators' tool)
- Operational planning: Budgeting (no tool)
- Operational planning: Who does what (in 'Participation matrix' tool)

Requirements and limitations

All stakeholders should participate in the scoping. This way, their commitment can be obtained and, very important, their understanding for the choices made. Scoping is about assessing with whom you are suited to do what, and what can better be left (to others). This is why you may integrate some institutional and organisational analysis tools at this stage. They give you an overview of current capacities and aspirations, so you consider both your own capacity and those of others in deciding what you will define as within or outside the scope of your project.

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Example: Demonstration case
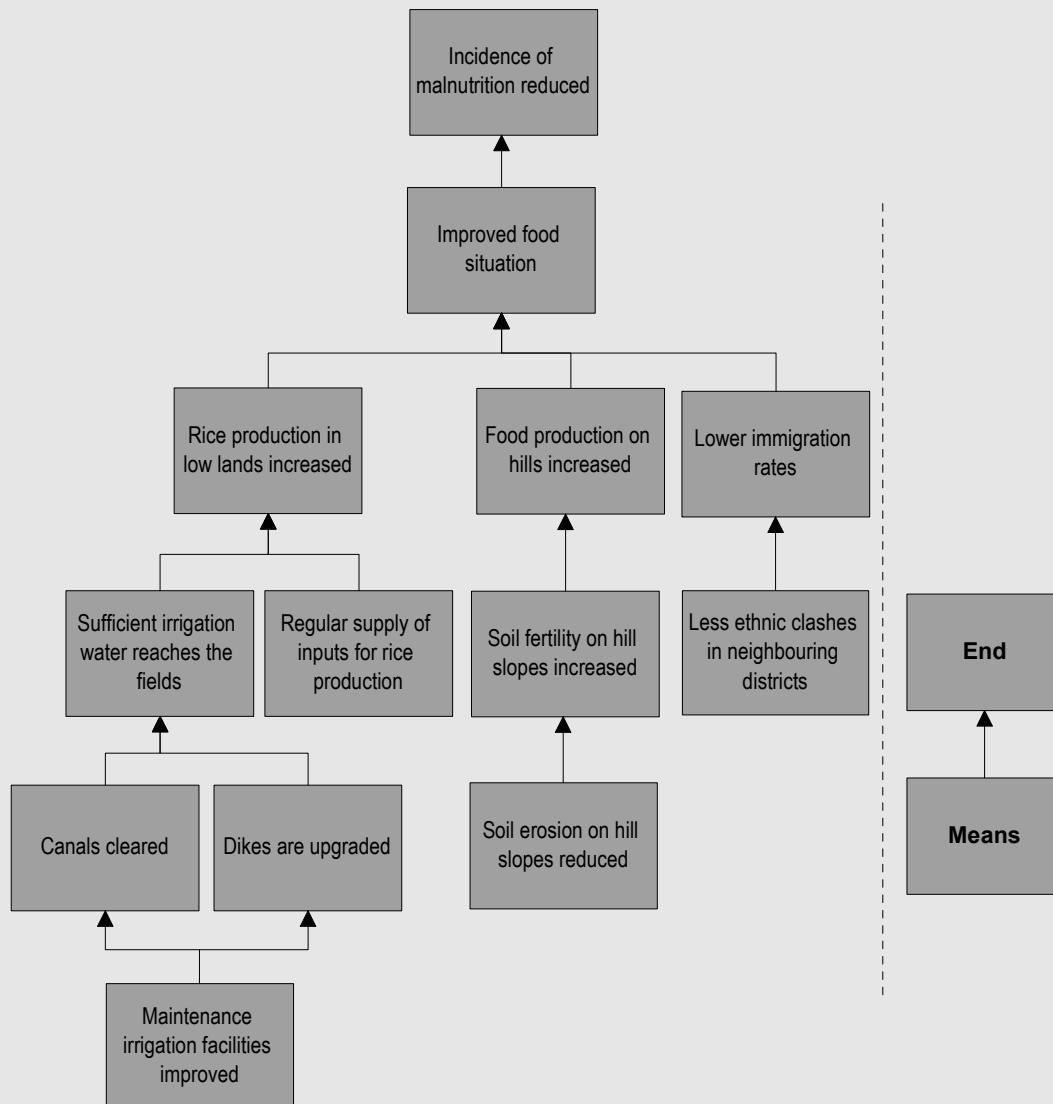
Problem inventory
Subject of the workshop is food security, the possible problems mentioned in relation to this subject are:

- Food production on hills decreasing
- Ethnic clashes in neighbouring districts
- Food shortages
- High incidence of malnutrition
- Canals are blocked

- Rice production in low lands decreasing
- Poor maintenance of irrigation facilities
- Dikes are degraded
- Soil fertility on hill slopes is decreasing

- Soil erosion on hill slopes
- Irregular supply of inputs for rice production
- High immigration rates
- Irrigation water does not reach fields in desired quantity

Diagram of problems
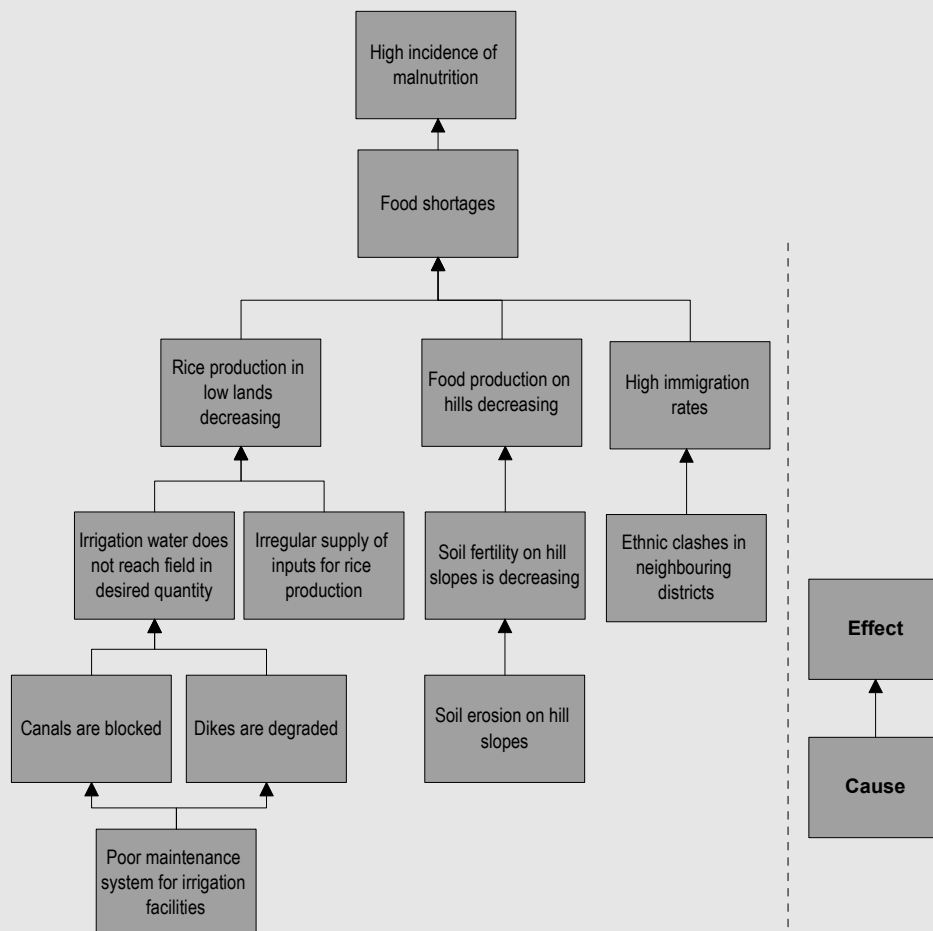
Demonstration case: Diagram of objectives

```
                    ┌──────────────────┐
                    │  Incidence of    │
                    │  malnutrition    │
                    │    reduced       │
                    └────────▲─────────┘
                    ┌────────┴─────────┐
                    │  Improved food   │
                    │    situation     │
                    └────────▲─────────┘
```

Rice production in low lands increased	Food production on hills increased	Lower immigration rates

Sufficient irrigation water reaches the fields	Regular supply of inputs for rice production	Soil fertility on hill slopes increased	Less ethnic clashes in neighbouring districts	**End**

Canals cleared	Dikes are upgraded	Soil erosion on hill slopes reduced	**Means**

Maintenance irrigation facilities improved

This diagram, or objective tree, provides a general and clear view on the desired positive future situation.

It is possible that problems are identified of which it is completely unrealistic to formulate an objective. E.g. it is not possible to transform 'heavy rainfall during rainy season' into 'no heavy rainfall during rainy season', in the first instance the problem will be maintained. At a later stage when the project planning is done, one can think of measures to cope with the heavy rainfall, like proper drainage system or dikes to protect. Important to realise is that while transforming problems into objectives one should remain realistic (is it feasible?).

Demonstration case: Clustering
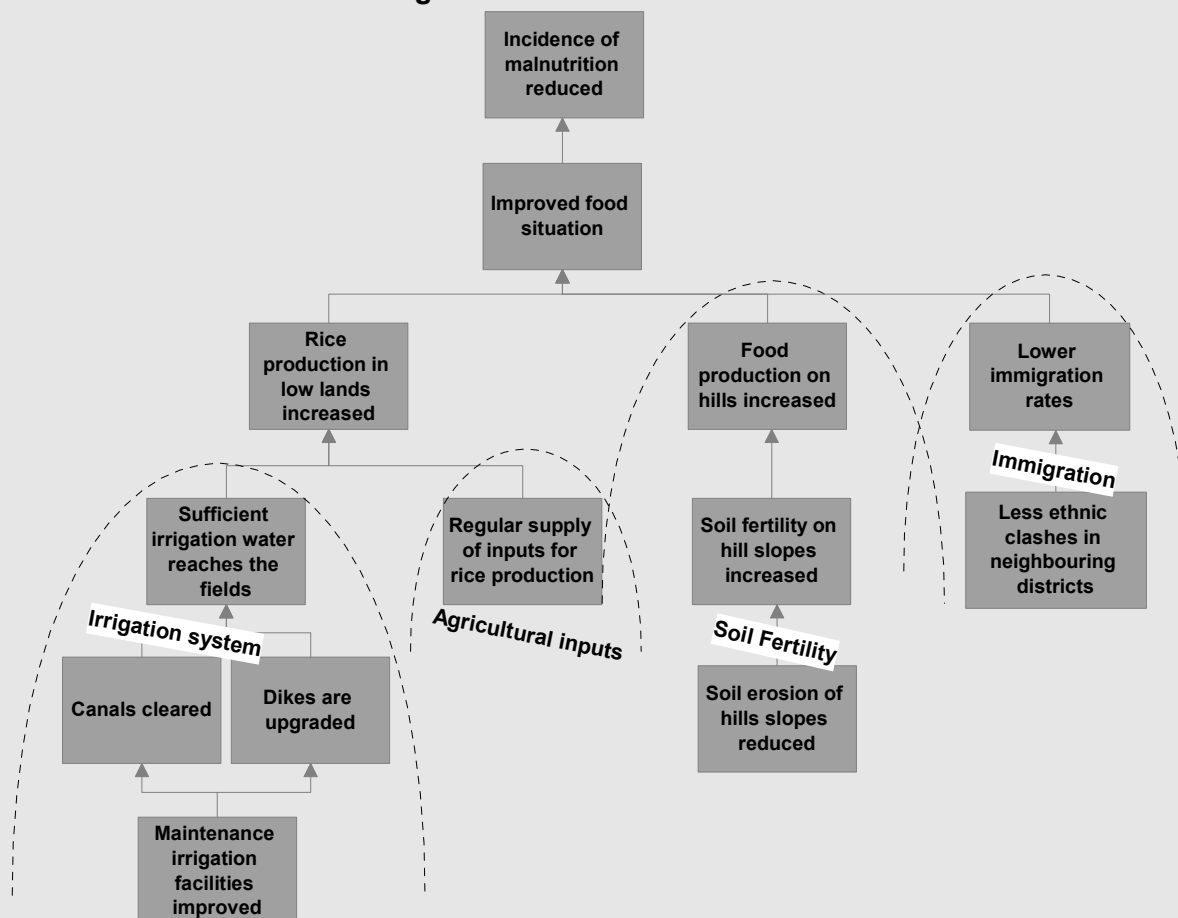
Demonstration case: Scoping

Using different criteria in selecting one or more clusters the following decisions were taken:

- Irrigation system: the beneficiaries indicate that this is a cluster that requires urgent intervention. Working on irrigation issues suits the policy of both the local government and the implementing agency. Besides the implementing organisation has a vast experience in similar projects.

- Agricultural inputs: in the workshop it was indicated that the suppliers of agricultural inputs intend to have a more regular supply, especially when the farmers are willing to pay a little more. When there will be sufficient water, the production will increase and thus the farmers will have more income to invest in agricultural inputs.

- Soil fertility: working on soil fertility issues requires a special expertise and it is known that the local government and the agricultural university run a successful project on soil fertility management.

- Immigration: this is probably the most sensitive and difficult cluster to deal with. The beneficiaries and the implementing organisation do not see any chance for them to try and work on this issue. It is typically a task for the politicians and the government.

Therefore this is not taken up in the implementation of the new project. It's simply not feasible.

Conclusion: the project will focus on the irrigation system cluster.

Steps in the analysis and planning process at target group level

The below overview gives the steps that have to be taken to complete a planning process. The different steps serve as the basis for the subsequent chapters in this tool, as well as the 'Logical Framework' and 'Assumptions' tool.

Preparatory phase

0. Define the subject
Define the subject of the OOPP workshop

0. Stakeholder analysis
Analysis the parties that have an interest in the subject

Analysis phase

1. Problem analysis
- Check the subject with the stakeholders
- Make an inventory of all perceived problems
- Check whether these problems are commonly understood
- Build the problem tree (cause-effect relations)

2. Objectives analysis
- Convert the problem tree into an objective tree
- Check consistency of means-end relations, if necessary reformulate objectives

3. Analysis of strategy
- Divide the objective tree into clusters (clustering)
- Select the clusters which will be included in the intervention (scoping)

At this stage also use institutional analysis tools