Guide 2.B1 Problem tree analysis – Procedure & Example

Problem tree analysis helps stakeholders to establish a realistic overview and awareness of the problem by identifying the fundamental causes and their most important effects. The main output of the exercise is a tree-shaped diagram in which the trunk represents the focal problem, the roots represent its causes and the branches its effects. Such a problem tree diagram creates a logical hierarchy of causes and effects and visualizes the links between them. It creates a summary picture of the existing negative situation.

This document is adapted from Lüthi, Morel [1] and JICA [2]. It explains how to develop a problem tree in 6 steps and gives practical hints.

A step-by-step approach is defined hereafter.

Steps	
STEP 1.	Identify existing problems
STEP 2.	Define the core problem
STEP 3.	Formulate the causes of the core problem
STEP 4.	Formulate the effects
STEP 5.	Draw a tree-diagram
STEP 6.	Review the logic and verify the diagram

STEP 1 – Identify existing problems

Through a brainstorming session, make a list of existing problem within the problem area/domain of interest.
Note that:

- A problem is not the absence of a solution, but an existing negative state or situation
- Make a distinction between existing, impossible, imaginary or future problems

STEP 2 - Define the core problem

From the list of existing problem, you should define which one is the core problem. The core problem, which will be the trunk of your tree, is the focal problem or central point of the overall problem.

STEP 3 – Formulate the causes of the core problem

The causes of the core problem will be the roots of your tree. They are the reasons why the core problem exist.
Note that:

- The problem defined in Step 1 can sometimes also be the causes of the core problem.

STEP 4 – Formulate the effects

Once you defined the cause, you can start thinking of the effects or consequences of the core problem. They will be represented as the branches of your tree.

STEP 5 – Draw a tree-diagram

Now you have all the elements to draw your problem tree!
Note that:

- The focal problem is placed at the center – Trunk of the tree
- Causes are places below – Roots of the tree
- Effects are placed above – Branches of the tree

You can see examples of problem trees on solid waste and sanitation on pages 3 and 4.

STEP 6 – Review the logic and verify the diagram

Once your problem tree is finalized, you should review the logic and verify is all the elements are there and placed in the right location. If necessary, you can make adjustments.

Typical questions to check on the consistency of your problem tree are:

- Are these causes sufficient to explain why this problem occurs? Are we missing some other causes?

ADDITIONAL INFORMATION:

- **Useful material:** flip chart, markers, post-it notes, cards, scotch, tape or pins
  Note that writing each problem/cause/effect on a separate post-it or card during Step 1 allows for later re-arranging in a cause-effect logic

- **Allow for discussion, debate and dialogue:** A separate flip chart might be useful for solutions, concerns, decisions and other related ideas from the discussion.

  Questions to guide the discussion might include (CLUES, 2011)
  - *Does this represent the reality? Are the economic, political and socio-cultural dimensions to the problem considered?*
  - *What are the most serious consequences? Which are of most concern?*
  - *Which causes are easiest/most difficult to address? What possible solution or options might there be?*

References:

1. Lüthi, C., et al., *Community-Led Urban Environmental Sanitation Planning: CLUES*, Eawag-Sandec, Editor. 2011.
2. JICA, *Guidebook for Environmental Education on Solid Waste Management in Africa*. 2019.

EXAMPLE OF PROBLEM TREE (JICA, 2019)

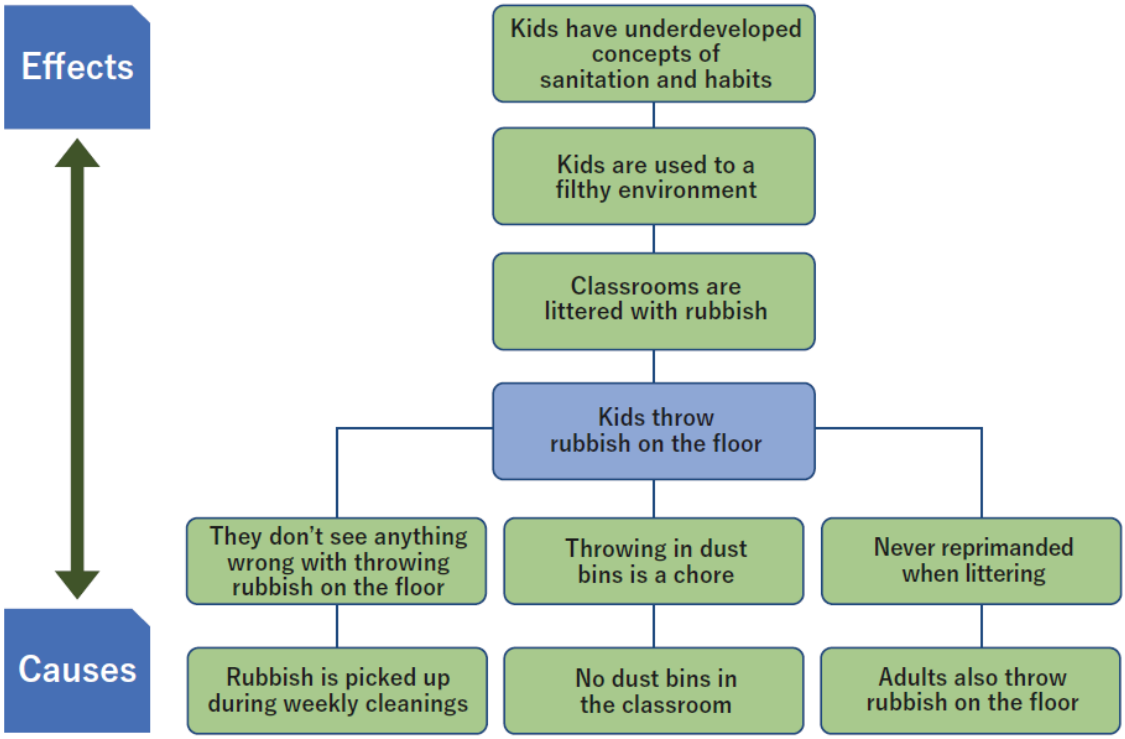

Figure 1: Example of problem tree analysis on solid waste for elementary school (JICA, 2019)

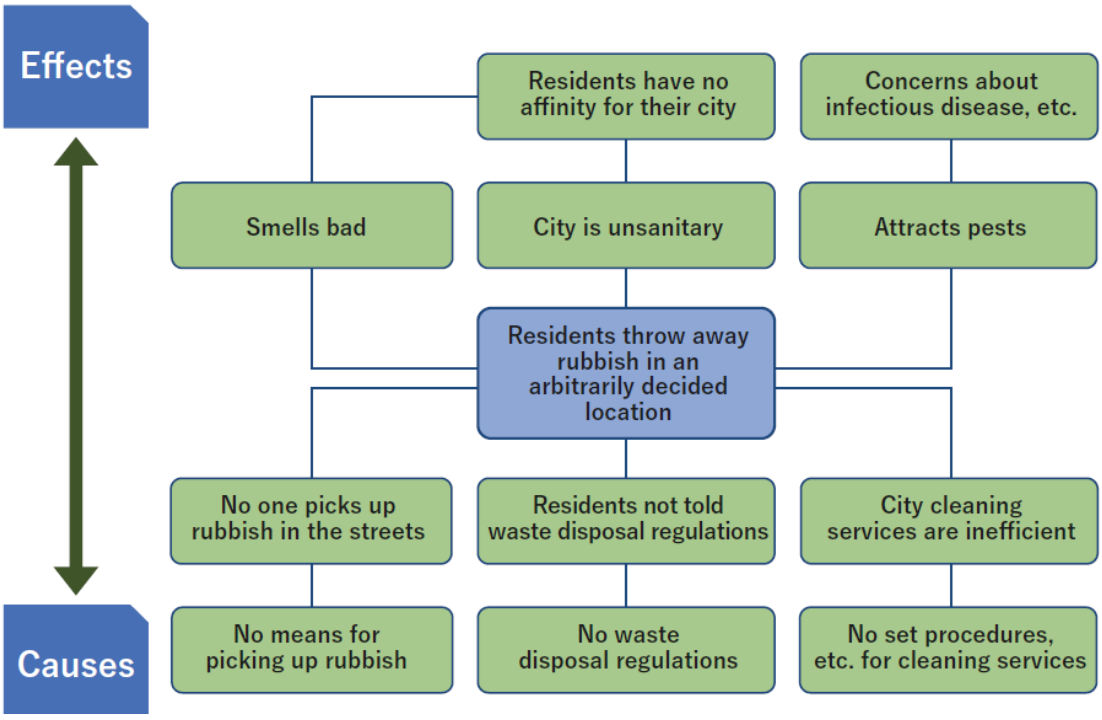

Figure 2: Example problem tree analysis on solid waste for a city (JICA, 2019)

EXAMPLE OF A PROBLEM TREE (CLUES, D8.1 – Sanitation)

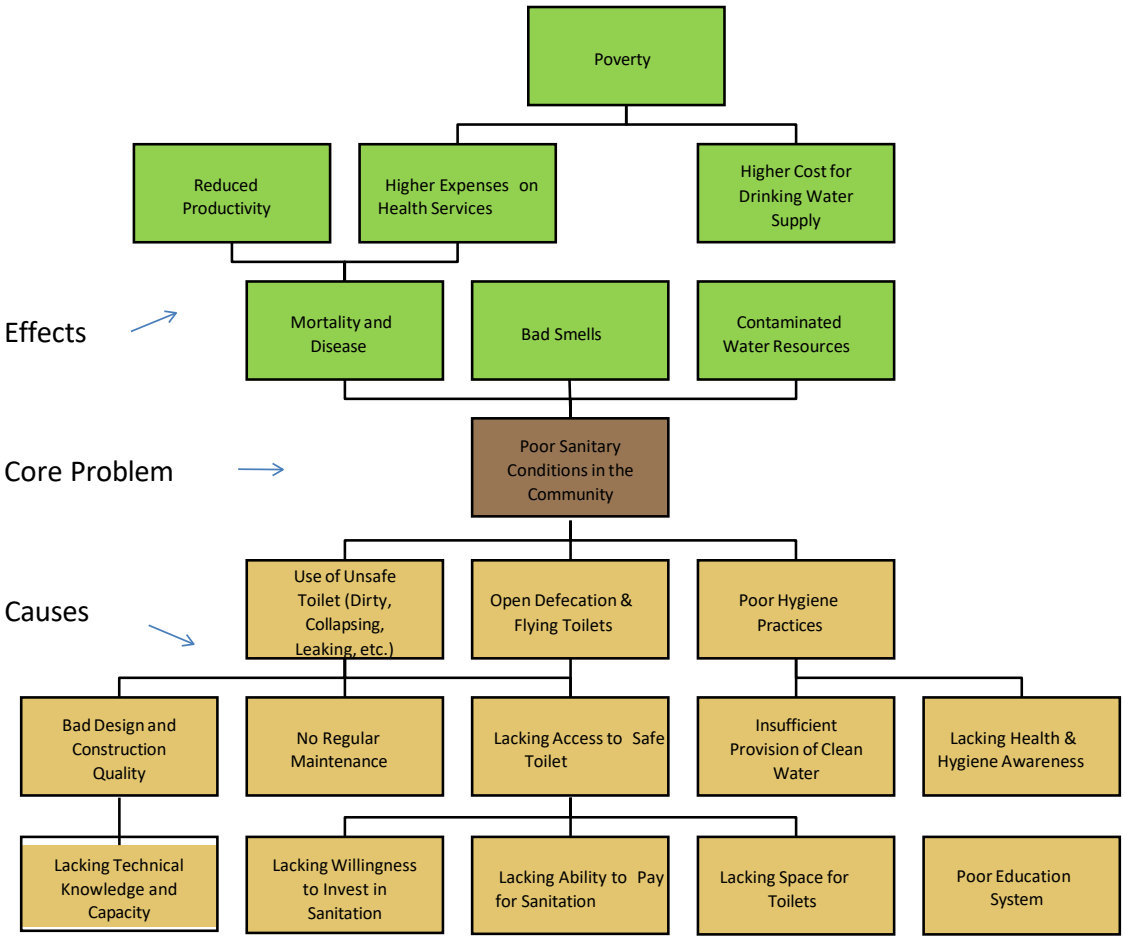

Figure 3: Hypothetical problem tree for a typical urban community with poor sanitary conditions (CLUES,2011)