Module 2: Problem Analysis, Goal Setting, Logical Framework

Session 2.1: Problem Analysis

Topics:	• What is Problem Analysis
	• Process of Problem Analysis and Process Analysis Diagram
Summary:	This session introduces one of the two parts of situation analysis for a project conducted either before or following stakeholder analysis, i.e., problem identification and analysis. The necessary steps in the problem analysis process will be presented and practiced by using a problem analysis diagram
Key Words:	Problem identification, analysis, problem analysis diagram
Objectives:	To be able to Identify and analyze problems for project design
Outcomes:	Participants will learn the process of problem analysis and how to use problem analysis diagram to describe the causes and effects of the core problem that the project will be designed to address
Methods:	Presentation delivered by RP; group work
Materials:	PPT, Flip charts (White board), markers, color papers, scissors, tape
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− **What is Problem Analysis**

Problem analysis is one of the two diagnostic processes in situation analysis. A thorough problem analysis provides an understanding of the main problems and binding constraints (e.g., economic, cultural, sociopolitical, environmental, and gender equality related) surrounding the issue or issues the project will address; and the causes of the main problems and their effects on the lives of people (including women and men of all ages, ability, socioeconomic status, and ethnicity); communities; and organizations. Once completed, a good problem analysis informs a relevant project design and provides a clear rationale for why it is important to invest in the project.

− **The Process of problem analysis**

• Problem analysis should be undertaken in a participatory manner, in consultation with key stakeholders identified during the stakeholder analysis (Module 2). Furthermore, stakeholder analysis should continue during the problem analysis stage.

• A good problem analysis incorporates data and information from different sources. Start with any research and data that already exist, including studies and analyses of the

issue, and documentation from previous projects addressing the same or a similar issue, especially evaluation studies. Refer also to key strategic frameworks such as the ADB country partnership strategy, national development strategies and plans, and national and subnational sector strategies and plans. Complement and validate this document-based information with information collected directly from key stakeholders and subject matter experts via interviews, meetings, and/or focus groups, and from site observations by the project team.

Step 1: Identify an initial set of problems surrounding the issue

- Brainstorm a few problems related to the issue, drawing on documented data and information and inputs from key stakeholders.
- When stating a problem, ensure the following:
  (i) State the problem as a negative condition or reality, not in terms of specific things being unavailable or the solution being absent.
  (ii) Be specific and clear. For example, "rural road maintenance by district road authorities does not meet national quality standards" is better than "poor quality of maintenance."
  (iii) Ensure ownership by a stakeholder or group. Problem identification focuses on what is happening and to whom. This should involve discussions about whether particular groups are affected more than others. A good problem statement is described from the perspective of those it affects.

Step 2: Identify direct causes

- Identify the major causes of each problem by asking "what causes this to happen?" It is often helpful to think in terms of categories of causes, such as policy constraints, institutional constraints, capacity weaknesses, or social or cultural norms.
- Repeat to identify more direct causes as problems and asking, "why has this happened?" Place the direct causes of each of these problems below. Continue to drill down until the analysis is exhausted and specific root causes are identified. The number of problems shown in the diagram is not restricted and will vary based on the nature and complexity of the issue being analyzed.

Step 3: Identify direct effects

- Starting from the problems at the top of the problem analysis diagram, identify the direct effects by asking the question, "What are the effects of this problem?" for each problem statement. Formulate the answer as a problem statement and place it above the problem statement it is linked to.
- Continue to specify effects until the final effects are reached.

− **Step 4: Review and refine**

- Refine the problem analysis diagram by reviewing the interrelationships between each problem statement. To check the logic, ask the question, "Why does this occur?"
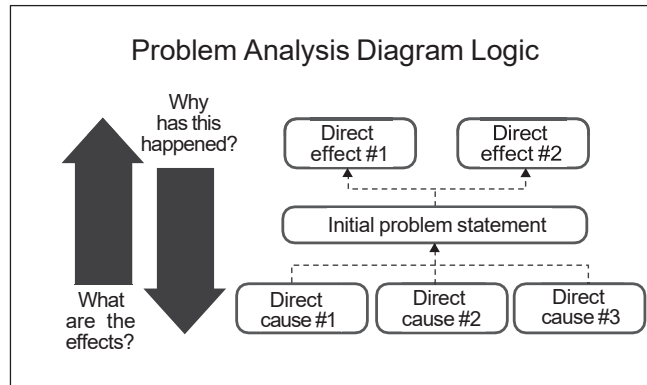
If there are two or more causes combining to produce an effect, they are placed at the same level in the diagram. Cause-effect arrows are used to connect the levels of the problem analysis diagram.

− **Example of a problem analysis diagram**
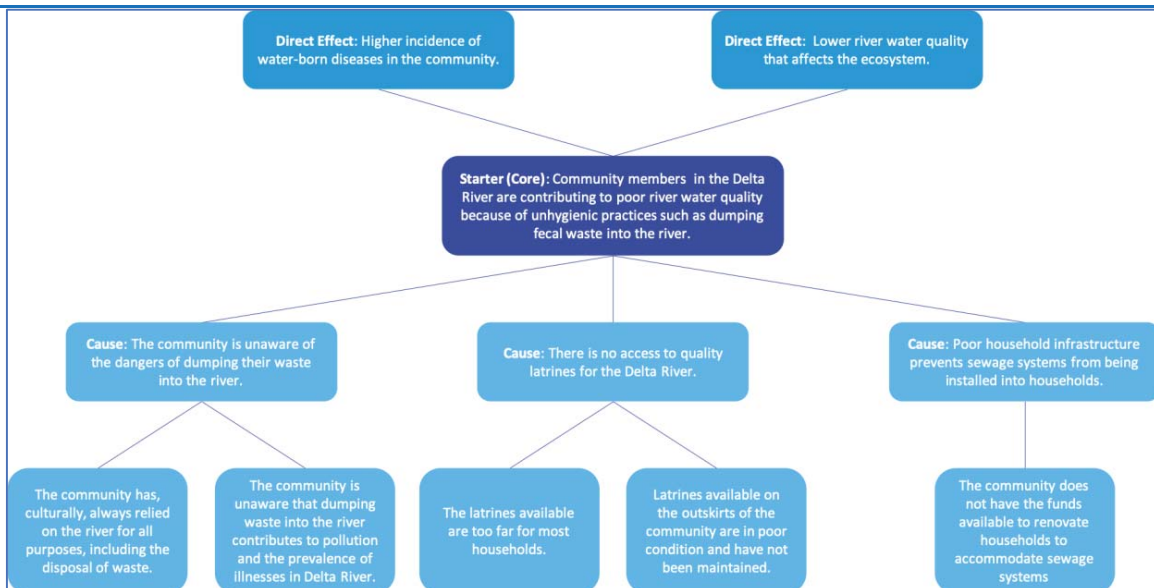
Group work on problem analysis:

1. Participants will discuss as a group to analyze a specific problem and develop the problem analysis diagram
2. The diagram will be used for subsequent sessions and development into a concept note.

Session 2.2: Future State Analysis/Solution Development

Topics:
- Developing solution for problem identified
- Goal setting
- Considerations on scoping the project

Summary: This session introduces the process of developing solution to address problem identified and analyzed, which constitutes the goal of a project or intervention. The session also provides considerations on defining the project scope as a range of outcomes can be possible to tackle a specific issue but there are certainly constraints (internal and external) of achieving every single one of the desired results.

Key Words: Future state analysis, Objective tree, project scope

Objectives: To be able to
- Formulate clear objectives from problems identified and analyzed for a project
- Understand the criteria in scoping of a project

Outcomes: Participants will set project objectives to address a specific problem in the context of interest

Methods: Presentation delivered by RP; class exercise

Materials: PPT, Flip charts (White board), markers, color papers, scissors, tape

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− **Solution Development**

- The findings of a thorough situation analysis (align with country/region context and priorities, stakeholders and problem analysis) are the foundation from which the project team can develop the right solutions to achieve the desired development results.
- Moving from situation analysis to solution development involves identifying and analyzing desired results and scoping a package of effective solutions that is realistically implementable given the resources available.
- Like problem analysis, these steps should be undertaken in a participatory manner, in consultation with key stakeholders identified during the stakeholder analysis.

− **Goal setting by objective tree**

- Once a problem tree (analysis diagram) is completed, the next step is to develop an objectives tree that begins to identify the potential interventions that could take place to "fix" what is broken in the problem tree.
- In its simplest form, the objectives tree is a mirror image of the problem tree – where each statement in the problem tree is transformed into a positive objective statement.

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While the problem tree displays cause and effect relationships, the objective tree shows the "means-to-end' relationships.
- Using the previous example, the objective tree diagram follows:
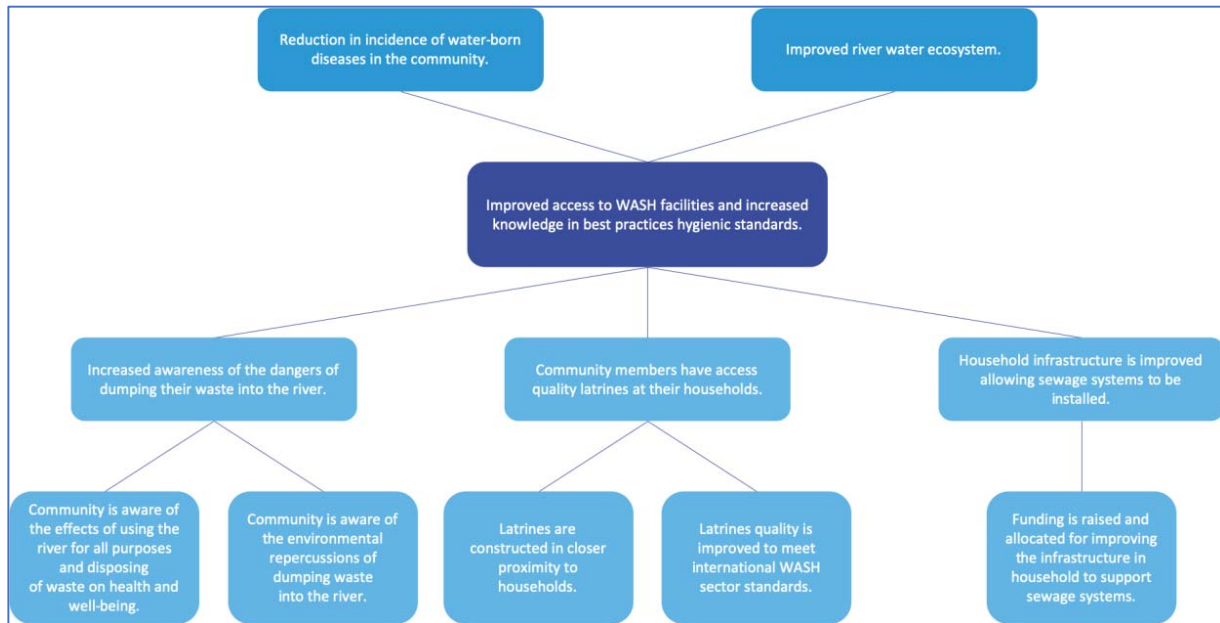
- At this point, the project should consider two critical strategic questions:
  o Which elements of the objectives tree will be included in the project intervention?
  o Which elements will not be included in the scope of the project?

− **Considerations in future state analysis**
- In practice, future state analysis might identify a broad array of potential interventions for a project, it is seldom the case that an organization can implement all the activities outlined in the future state analysis.
- At this point, the project team should consider the components described in the following table when determining which intervention(s) to pursue and what will be in scope and what will be out of scope.

Category	Guiding Questions
Needs Prioritization	What needs received the highest level of emphasis during the assessment/analysis? Addressing which needs would appear to have the highest potential for impact?
External Program Considerations	Who else is working in the proposed area of intervention? What are their program strengths? What existing activities complement the objectives tree analysis?

Appropriateness	Is the proposed approach acceptable to the target population and key stakeholder groups? For example, would a reproductive health program be appropriate and consistent with religious and cultural norms?
Institutional Capacity	What are your organization's strengths? What are your implementing partner capacity levels?
Resource Availability	Is funding available? Is there potential for growth? What opportunities exist to leverage resources?
Cost-Effectiveness	Is the rate of return for the investment acceptable?
Technical Feasibility and Sustainability	Can the proposed work be realistically accomplished? Can the work of the project be sustained and maintained over time?
Internal Program Considerations	What are the strategic priorities for your organization in the region? Country? Other? What are the program strengths of your organization? What priorities does your organization have with regard to geography? Beneficiaries? Other?
Portfolio Considerations	Does the project 'fit' within the larger portfolio of projects in the organization?

Group work on goal setting:

1. Participants will refer to and build upon the problem analysis diagram from last session to develop an objective tree
2. The objective tree will inform the next session in results analysis

Session 2.3: Logical Framework and Theory of Change

Topics:
- Logical Framework as project intervention logic
- Theory of Change

Summary: This session gives a detailed overview of the logic of a project premised on systematic analysis of stakeholders, problems, and objective setting. The logical framework is used to illustrate and present the connection between different levels of results, and how they can be achieved from one level to the next through measuring the change and taking into consideration of external factors called assumptions.

Key Words: Project intervention logic, logical framework, logical framework model, result chains, assumptions, indicators, means of verification, theory of change

Objectives: To be able to
- Understand project logic and elements of logical framework
- Present project results at different levels

Outcomes: Participants will learn how to formulate a project logical framework

Methods: Presentation delivered by RP; individual exercise

Materials: PPT, Flip charts (White board), markers, color papers, scissors, tape

Contents:

− **Project Intervention Logic: Logical Framework**

- Once the intervention to pursue has been identified, it is time to outline how it will lead to the outcomes desired. This is where **logical framework** comes into play.
- The **logical framework** identifies and communicates the logical relationships in a project by tracking the vertical and horizontal reasoning that connects the levels of the matrix. The relationship between the elements on each level of the logical framework illustrates the vertical logic that will result in the achievement of the project's ultimate goal.

− **Basic Logical Framework Model (4-level)**

- While there are many versions of project logical frameworks, below describes a basic four-level logical framework model that includes the following deliverables:

1. **Activities** are actions taken through which inputs (financial, human, technical, material and time resources) are mobilized to produce the deliverables (training, constructing, etc.) of a project for which staff can be held accountable and which, when aggregated, produce outputs.

2. **Outputs** are tangible and non-tangible deliverables resulting from project activities. They include products, goods, services and changes (e.g., people trained with increased knowledge and skill; quality roads built) that aggregate and contribute to outcomes.

3. **Outcomes** are what the project expects to accomplish at the beneficiary level (e.g., use of knowledge and skills in actual practice over time; transportation of goods on constructed roads over time) and contribute to population-level changes (reduced malnutrition, improved incomes, improved yields, etc.) that aggregate and help bring about accomplishment of goals and impact over time.

4. **Goals** are the highest-level desired end results or impacts (transformation, sustainability, livelihood, well-being, etc.) to which the project contributes (the ultimate objective in many logical frameworks). An example of this would be a sector-level goal or program level outcome.

− **Vertical Logic: Chain of results**

- Most of the undertakings and control in project management lie in the activity and output levels. Logical framework ensures that if **vertical logic is sound** and your horizontal logic (to be discussed later) remains, the project outcome will be achieved.
- This intervention logic builds upon the work you did in the **Future State analysis** in that it provides a direct line from the selected intervention to contributing to the core problem.

	Project Description	Indicators	Means of Verification	Assumptions
Goal	If the OUTCOMES occur; Then this should contribute to the overall GOAL			
Outcome(s)	If the OUTPUTS are produced; Then the OUTCOMES can occur			
Outputs	If the ACTIVITIES are conducted; Then OUTPUTS can be produced			
Activities	If adequate RESOURCES / INPUTS are provided; Then the ACTIVITIES can be conducted			

− **Horizontal Logic: Assumptions**

	Project Description	Indicators	Means of Verification	Assumptions
Goal				
Outcome(s)				If the horizontal logic is followed AND
Outputs				assumptions hold true, then the project will
Activities				likely succeed.

- Having defined the project goal, outcomes, outputs, and activities, the next question is "What could potentially interfere with the project's vertical logic? (usually outside the project's control)' At each level of the logical framework, there are **external factors** that may affect the success of the project, these are the assumptions.
- **Assumptions** complete the horizontal logic of the logical frame and must remain true in order for the activities to lead to the outputs and the outputs to lead to the outcomes. An assumption is a hypothesis about necessary conditions, both internal and external, identified in a design to ensure that the presumed cause-effect relationships function as expected and that planned activities will produce expected results.
- **Examples of assumptions:**

Objective	Assumption
Outcome: Increased economic empowerment of farmers through improved barley crop yields.	
Output: Farmers provided with quality barley seeds to plant.	Weather conditions remain favorable for seed germination. There are no droughts or floods.

Objective	Assumption
Outcome: Improved nutrition for the most vulnerable children.	
Output: Children are provided with 3 nutritionally complete meals per day.	There are no underlying health conditions preventing children from absorbing the nutrients in the 3 complete meals per day.

- It is important to really think about the assumptions in the logical frame. If these conditions do not hold true, the success of your project will be compromised.
- Assumptions are usually **positively phrased and are directly related to your project activities, outputs, outcomes, and goal.** The assumptions are also a great way to start thinking about the risks in your project. Think of them as an **"if-AND-then"** relationship. If we complete our outputs AND our assumptions hold true, then we will achieve our outcomes.

Individual exercise on results chain:

1. From the previously formed project objective, practice formulating a chain of results including activities, outputs, outcomes and impacts.
2. Think and write down at least two assumptions connecting the horizontal logic of any part of the result chain

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— **An illustration of a Project Logical Framework**

	Description	Indicators	Means of Verification	Assumptions
Goal	To improve the quality of river water in the Delta River.	% reduction in the presence of pollutants in the Delta River.	Water Quality Tests	No need for assumptions at this level
Outcome(s)	Improved access to quality latrines for the Delta River community.	% increase in the use of latrines by the end of the project in comparison with before the project. % of community members who express satisfaction with the distance, quality, and condition of the latrines by the end of the project.	Survey Data Focus Group Discussions with Community	There are no additional sources of pollution in the Delta River. Latrines are maintained by the municipality to ensure they continue to function at the highest quality possible.
Outputs	1.1. Quality latrines are constructed 1.2. Local municipality trained on the maintenance of the latrine. 1.3. Delta River community advocates trained on value and use of latrines.	1.1. # of latrines constructed within 50 meters of households by the end of phase 2 of the project. 1.2. # of municipality staff trained on who demonstrate knowledge of technical maintenance of the latrines by the end of the project. 1.3. # of community advocates trained on and demonstrate knowledge of the usage and value of latrines by the end of phase 1.	1.1. Engineering survey data 1.2. Training attendance sheets and pre / post assessment 1.3. Training attendance sheet and pre / post assessment.	1.1. Access to the latrines and awareness of benefits will ensure that the community uses the latrines. 1.2. Municipality staff remain in their position and transfer the knowledge of maintenance to new staff members. 1.3. Community advocates have enough power and influence to convince the community to use the latrines.
Activities	1.1.1. Latrine specifications and locations are confirmed in coordination with the engineering team. 1.1.2. Build the latrine cap and structure. 1.1.3. Install the latrine structure and conduct a quality check.	Inputs: Latrine construction materials, WASH engineer, training curricula on latrine maintenance, advocacy materials		

— **Indicators: "Measure" of Change & Means of Verification (How to Measure)**

- An indicator is a quantitative or qualitative measure used to describe change. For the indicator to measure change, it must have a baseline (a measure or description of

current performance of the entity and/or a comparator) as an initial reference point. Baselines must be defined at or near the beginning of a project. Performance during project implementation is measured against a target (the improvements, change or achievement expected to happen during project implementation), taking into account the baseline.

- Indicators depict the extent to which a project is accomplishing its planned inputs, outputs, outcomes and goals. They communicate in specific, measurable terms the performance to be achieved at each level of change. Indicators also help to remove vague and imprecise statements about what can be expected from project interventions.

- The following table provides guidelines for indicator development at each of the logical framework levels.

Elements	Indicator Guidelines
Goal – _The ultimate objective or highest-end result or impact to which the project contributes	Indicators are longer-term impacts that are not specific to a single project. Rather, they are program, subsector, or sector objectives to which several other projects and variables will also contribute. Examples: transformation, sustainability, livelihood, and well-being.
Outcomes – _What the project expects to accomplish at the beneficiary level that aggregates and help bring about accomplishment of goals and impact over time	Indicators at this level are crucial but can be more difficult to determine. Change is sought among extended beneficiaries, target populations, collaborating institutions and local partners. Examples: use of knowledge and skills in actual practice over time; increased access, reduced malnutrition, improved incomes, and improved yields.
Outputs – _The tangible deliverables resulting from project activities and which are largely under project managements control – _that aggregate and contribute to outcomes	Indicators at this level are easier to specify than at the outcome level because they represent tangible goods and services to be delivered by the project. All outputs have to be accomplished by the end of the project's implementation period and according to the schedule included in the project plan. Examples: people trained with increased knowledge and skill; quality roads built, goods delivered and services performed.
Activities – _The actions taken through which inputs are mobilized to produce deliverables for which staff can be held accountable – _and which, when aggregated, produce outputs.	Not all organizations develop indicators at the activity level. Indicators at this level are almost directly related to the description of the activity itself. Examples include: staff activities, actual expenditures compared to budget, use of equipment, training components and construction components.

- Performance Indicators should be SMART:
  - o **S**pecific – Indicators must be specific and focus on the change that is expected at each level. What or who is changing?
  - o **M**easurable – The indicator must be quantifiable and measurable. Can the indicator be assessed objectively and independently?
    - Quantity – the expected numerical representations of what is to be achieved;
    - Quality – the narrative or pictorial description of the expected achievements;
    - Location – the geographic boundary of the expected achievements.
  - o **A**chievable – Indicators must be attainable within the constraints of the project triangle (budget/resources, time/budget, and scope/quality).
  - o **R**elevant – Indicators must accurately measure the change the project aspires to generate. Does the indicator practical and cost-effectively measure the outputs, outcomes, and/or goal?
  - o **T**ime-bound – The indicator should identify a specific time and date. By when will the indicator be achieved? Can the indicator be achieved within the established timeframe?

- Means of Verification (MOV) are the sources from where we get the information to measure our indicators. Means of verification should be cost-effective and should directly measure the indicators. The best advice for indicators and MOV is to keep it simple. The more complex the indicator, the more complex (and subsequently, challenging to measure) the MOV.

− Theory of Change

Theory of Change (ToC) generally refers to mapping the pathways of change by starting from the highest-level results statements, working backward step-by-step to identify what needs to change before the situation described in the level above can be achieved or occur. It fills the gaps between what the project does and how these lead to the desired goals. Some reminders when preparing theory of change:
- Review and refine the cause-and-effect pathways ensuring there are no leaps in logic between statements.
- In each results statement, make sure to name the stakeholders involved and their changed behavior, performance, or situation.
- Often, we tend to focus on what the project must do to create the desired change. This trap of jumping to project activities should be avoided because it prematurely narrows creativity in project design down to the familiar menu of activities.
- To avoid the activities focused trap: the results statements must be changed statements. They should not say what the project is doing. For example, avoid a statement like "train staff in organization X"; instead use "staff of organization X have improved knowledge of Y topic." This approach spurs innovation by encouraging teams to brainstorm various strategies for bringing about the desired changes.