

**Caribbean Centre for Renewable Energy
and Energy Efficiency
Project Preparation Facility Project
Concept Development Training**

Problem and Opportunity Analysis for Sustainable Energy Projects

Understanding the opportunity or problem

Situation analysis: needs assessment, stakeholder analysis and problem analysis

Assessment of organizational capacity

Situation Analysis

The purpose of a project situation analysis is to identify problems and/or opportunities in the project's focus area, identify causes of the problems, or capacity and constraints to take advantage of opportunities and develop solutions to resolve the existing situations or take advantage of opportunities.



Conducting the Situation Analysis

Situation analysis is conducted by using all available data such as national statistics, research, national plans and policies, international agreements, demand and use studies, GIS data, technology studies, survey results, and land use data.

Situational Analysis

The main elements of the situational analysis are:

- Data analysis and participatory assessment**
- Problem or Opportunity Analysis**
- Energy users and providers stakeholders Analysis**

Situational Analysis

Why is the situational analysis important?

- **Demonstrates logical link between identified problems and their causes**
- **Elaborates Opportunity**
- **Sets out the problem or opportunity in an economic, technological, cultural and/or social context, and proposes possible strategies**
- **Provides information and analysis on policy, institutional framework and infrastructure**
- **Provides justification to a donor for the financing of the project**

What are key data types and some examples

Geospatial data

- Land use
- Population
- Forests
- Terrain
- elevation

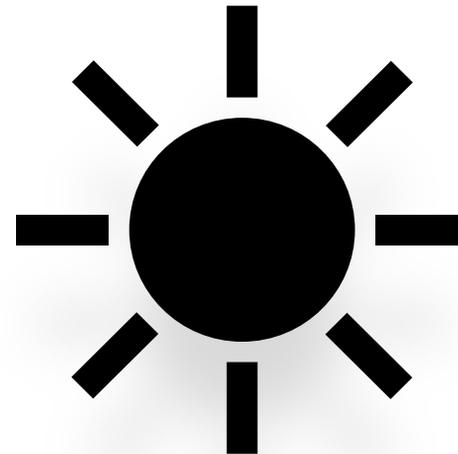
Renewable Energy Resource data

- Wind speed
- Solar irradiance

Opportunities

Increase in energy demand for Caribbean countries was estimated to grow at the rate of 3.7% annually resulting in an almost twofold increase in energy demand by 2018.

The tremendous potential for solar and wind energy is reflected in the following statistics - annual solar irradiation (the power received from the sun in a certain area) ranges from 1700 to 2300 kWh/m² and wind velocity averages five to nine m/s.



Sources of energy in the Caribbean in 2018

Overall, more than half of the energy capacity of 10 of 13 Caribbean nations comes from diesel or oil; only Belize (hydro-electric), Suriname (hydro-electric), and Trinidad and Tobago (natural gas) generate a majority of their capacity from other sources.” The heavy dependence of Caribbean countries on petroleum-based fuels combined with the exorbitant costs of generating electricity from the use of such fuels.

Conducting the Situation Analysis

- Conduct the situational analysis with the participation of all stakeholders providing sex disaggregated data to facilitate gender analysis
- Identify constraints and opportunities that are essential to expanding generation and or use of renewable energy
- Conduct a comprehensive technical potential analysis

Conducting the Situation Analysis

- **The Data Analysis should address the demographics, politics, economics, production capacity, technological and socio-cultural factors as well as international and country specific standards, regulations and commitments.**
- **A needs assessment will facilitate a better understanding of the actual and perceived needs of the target group.**

Conducting the Situation Analysis

A participatory needs assessment is advantageous for several reasons:

- a) Strengthens the assessment process**
- b) Builds interest in the outcome of the assessment**
- c) Includes the eventual beneficiaries in diagnosing the problems, understanding the opportunities and planning for the future**
- d) It promotes buy-in for the results of the situation analysis and commitment to the change or new systems.**

Techniques of Participatory Assessment

- **Interviews**
- **Observation**
- **Focus group discussions**
- **Workshops**

Problem and Opportunity Analysis

Problem or Opportunity Analysis involves careful review and analysis of the data collected and compiled in order to establish causal relationships

Some Definitions

Problem: “a matter or situation regarded as unwelcome or harmful and needing to be dealt with and overcome.”

Opportunity: “a set of circumstances that makes it possible to do something.”

Causes: the factors which lead to a specific situation which exist in the organization, firm, community, country or region.

Gender: Refers to behaviours, values and relative power and influence that society ascribes to the two sexes on a differential basis. It is an acquired identity that is learned, changes over time, and varies widely within and across cultures.

Some Definitions Continued

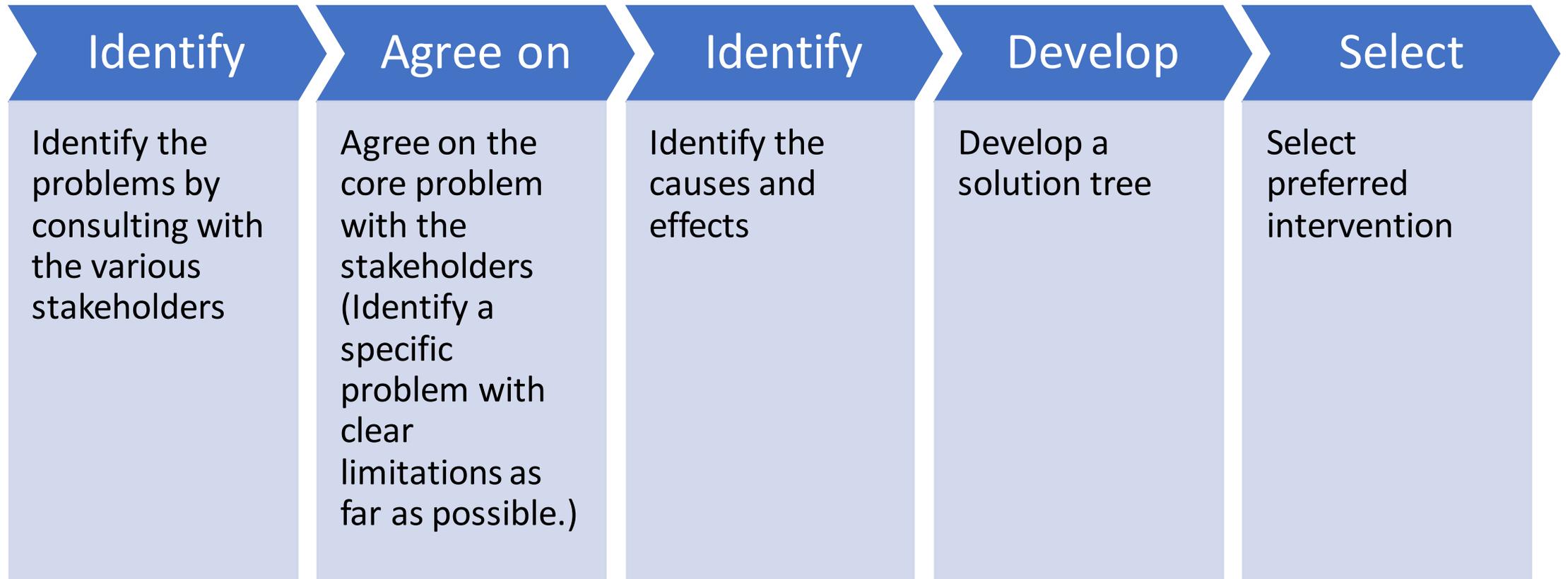
Gender Analysis: Asks how a particular activity, decision, or plan will affect, differently men and women in areas such as access and control: labour, property ownership, information and services etc. It must be undertaken at each stage of the development process.

Gender mainstreaming: refers to strategies for making women's as well as men's concerns and experiences an integral dimension in the design, implementation, monitoring, and evaluation of policies and programmes in all political, economic and social spheres – such that inequality between men and women is not perpetuated

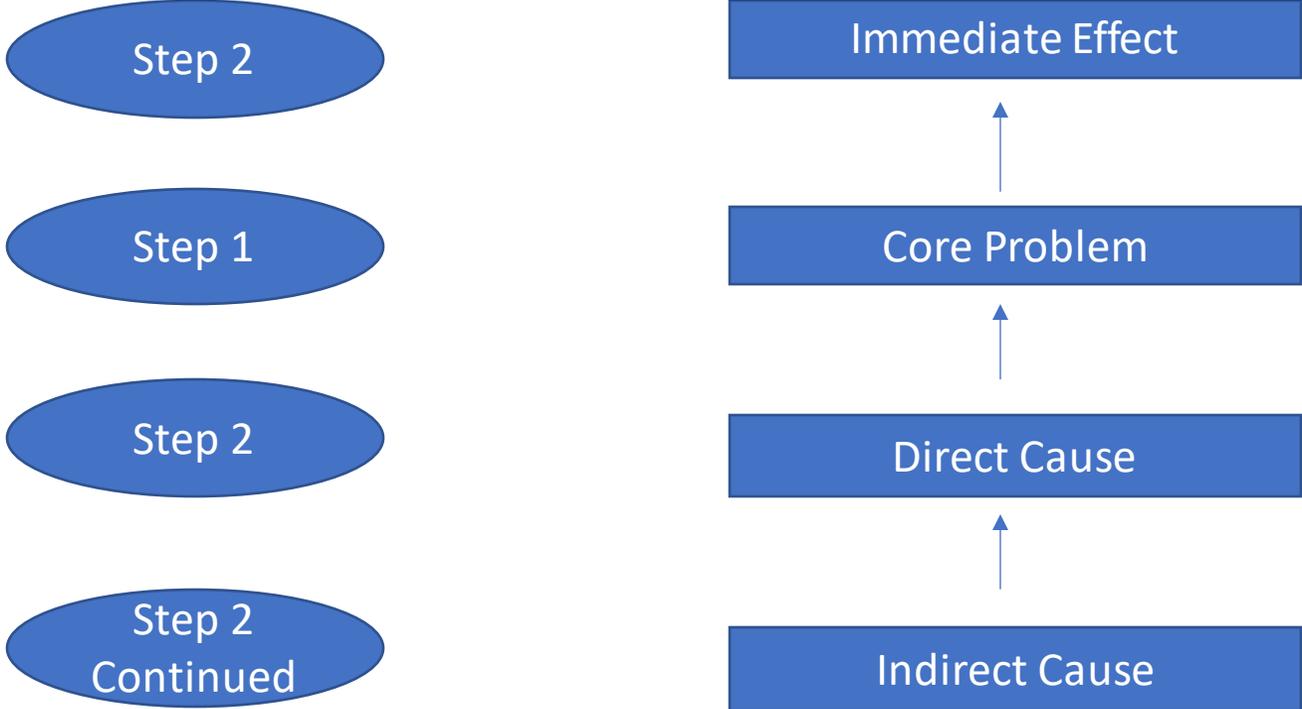
Developing Linear Causal Relationship for Problem Tree

The project developer uses the information collected to clearly define the core problem and the causes and effects and establish the linear relationship between them.

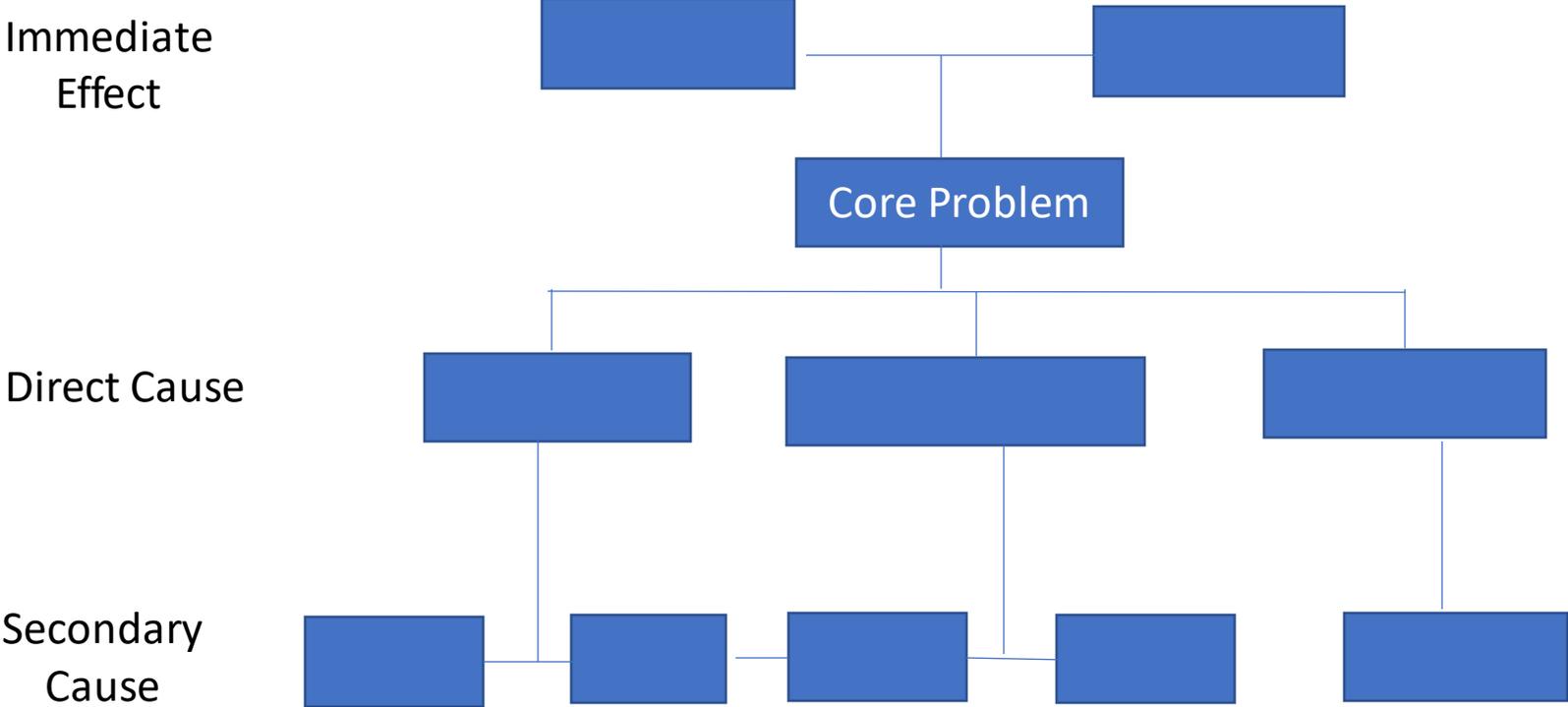
Problem Tree Steps



Developing Linear Causal Relationship for Problem Tree



Establishing cause and effect relationships



Completing the Problem Tree

- You will need to identify the problem in specific and manageable terms.
- The core problem should be expressed in negative terms.
- A hierarchy of cause and effect is established .
- The effects can be separated into immediate or interim effects and long-term effects.
- The next step is to develop the Objectives Tree.

Objectives Tree

- This involves flipping the negative statement from the problem tree.
- The Objective Tree demonstrates the means-end relationship between objectives

Example

“Lack of service” could be changed to “increased level of service” or “increased service”. *High cost of service* could be changed to *20% reduction in cost of service*

■ Any questions?

*Thank
you*

