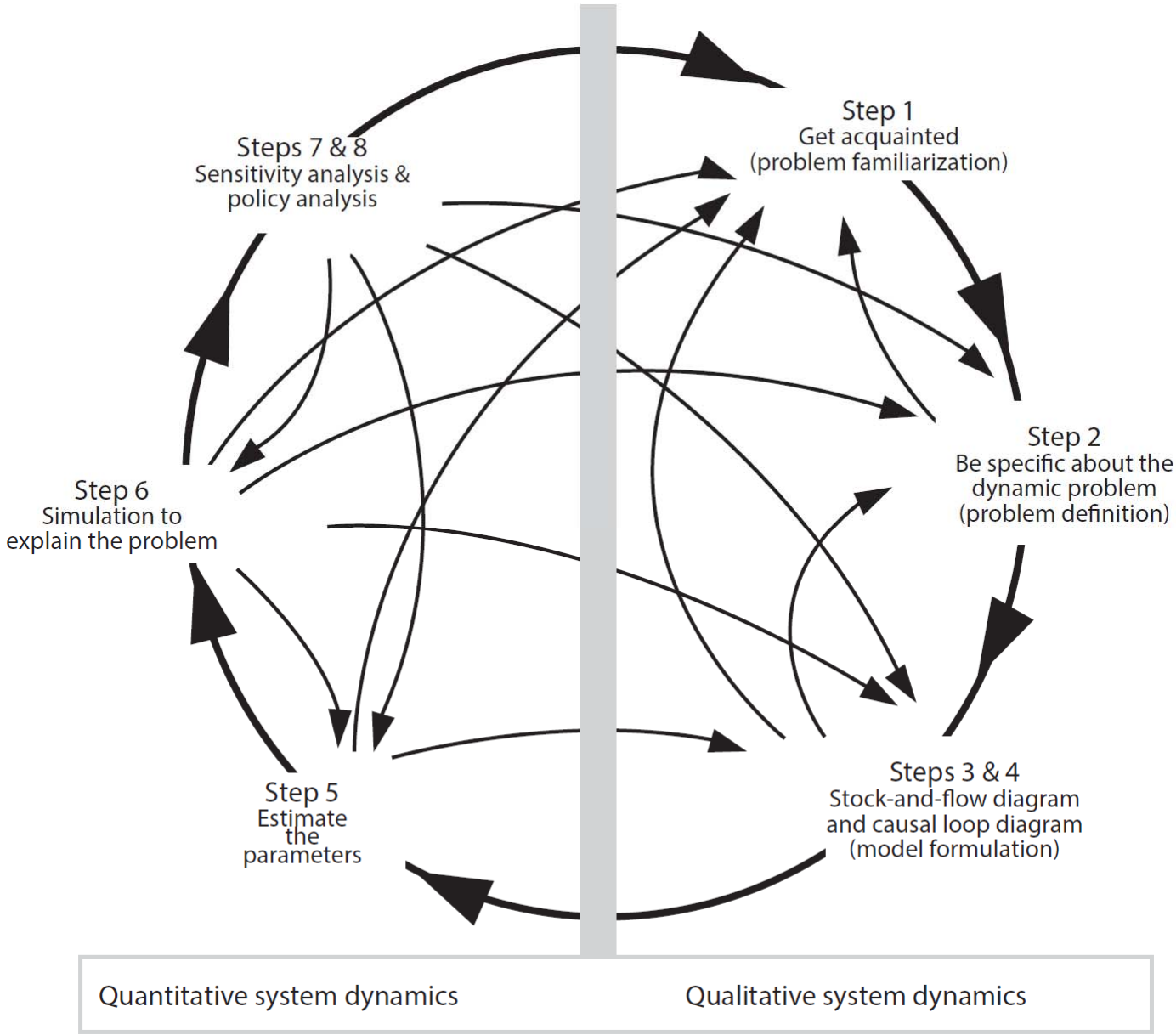

Step 1
Get acquainted
(problem familiarization)
Step 2
Be specific about the
dynamic problem
(problem definition)
Steps 3 & 4
Stock-and-flow diagram
and causal loop diagram
(model formulation)
Step 5
Estimate
the
parameters
Step 6
Simulation to
explain the problem
Steps 7 & 8
Sensitivity analysis &
policy analysis
Quantitative system dynamics
Qualitative system dynamics

Holistic Community Appraisal

Learn about the community and the context of the project

Develop community baseline in a participatory manner

How the locals explained it

How the project leader understood it

How the team designed it

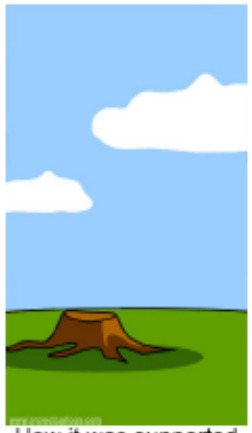
How the reports described it

How the project was documented

How the project was billed

When it was delivered

What was installed



How it was supported ny local NGO

How it performed under load

How fixes were applied

What the village really needed

Underlying Assumption

People in the community are willing and can afford to invest time and energy in the process

- Socio-Cultural Factors and Conditions
  - How do the community members cook their meals?
  - What type of roles do women play in local society?
- Technical Factors and Conditions
  - Does the community have access to electricity? If so, where does it come from?
  - What type of technology is present (i.e. computers, cars, etc.)?
- Economic Factors and Conditions
  - How do the community members make a living and earn money?
  - How do they prioritize typical expenditures (i.e. food and water over entertainment)?
- Political Factors and Conditions
  - What type of relationship does the community have with the local, regional and national government?
  - Is there some sort of social hierarchy?
  - What does the power/authority structure within the community look like?
  - Is there a local chief/mayor/sheik/committee of elders etc?
- Environmental Factors and Conditions
  - What happens to wastewater?
  - What is the local geography like (by a river, in a desert, on a mountain etc.)?
- Community Health Factors and Conditions
  - How often are members of the community sick? What are common symptoms?
  - Do they have access to clinics and/or doctors?
- Institutional Factors and Conditions
  - Have there been or are there now any NGOs or other service based organizations active in the area and/or community?
  - Is there a potential for any partnerships between the team, the community and any local or regional NGOs?
- Educational Factors and Conditions
  - What kinds of schooling do children receive (i.e. public education, home schooling, etc.)?
  - What levels of education do children typically complete (i.e. high school, college etc.)?

Topic	Indicators
Water Availability	• percentage of households with safe domestic water sources (wells, taps, etc.) • average walking time from house to source of safe drinkable water • average number of liters per capita available in the household in difference seasons • hourly capacity of springs in different seasons • depth of the water table as measured in different seasons in a sample of wells • regularity of stream flow (overflow after rainfall? dry in summer etc.) • average time spent daily for watering cattle in different seasons • percentage of productive units having access to irrigation systems • surface of irrigated land plots • length of irrigation systems
Water quality (human use only)	• turbidity, chemical pollution bacterial pollution • number of fecal coliforms per ml in different water sources and seasons • salt concentration per ml in different water sources and seasons • frequency and appropriateness of chlorinization of wells, tanks and piped-water systems • percentage of households satisfied with the taste and appearance of water in different seasons
Functioning of water supply systems	• number of days per year in which household wells or taps are not functioning • percentage of households relying on domestic water harvesting systems • presence and function of local water committee controlling maintenance and support for water supply • number and availability of local mechanics with training to repair wells or taps • liters lost per minute due to major leakages in the supply system • seasonal differences in depth of water table

Holistic Appraisal

- Outcome
- Participatory Action Research (PAR)
- Building a support team
- Collecting data (I and II)
- Designing the appraisal
- Carrying the appraisal
- Analyzing and presenting data

Participation

- A condition by which local knowledge, skills and resources can be mobilized and fully employed
- Participatory Community Development: The "beneficiaries" sit in the driver's seat; no pre-cooked expert recipes.
- From development as "growth" to development as "transformation"

1. Building a Team

- Team members need to be selected based on their sensitivity to culture, technical expertise, and the unique skills they bring to the group.
- A right balance of men and women. The team as a whole needs to show a variety of expertise and interest to match the type of appraisal.
- Representatives of NGOs, governmental organizations (GOs) and community based organizations (CBOs).

Challenges and Biases

- Working with local populations is not easy due to many factors (cultural, religious, economic, gender, etc.) and preconceived ideas.
- Communication can be difficult
- Participation takes time and resources and requires patience and sensitivity
- Only the voices of a few (mostly male members) special groups in the communities are often heard
- Only some communities in a region may be selected for a project

Biases: Spatial, project, Person, Seasonal, Diplomacy

2. Collect Data

Aspects	Examples of Information Needed
People	Who lives in the area? What is their structure and composition? What divisions exist? What is the basic profile in terms of things like health, education, employment, income and so forth? What is the patterns of leadership? What aspects of their belief systems, values and practices seem important? Do some groups have more power or influence than others?
Environment	Where are the physical and social boundaries of the community? What aspects of climate, topography, natural resources, or seasonal variations seem important? What outstanding natural features mark the area? How is environment connected with livelihood?
Infrastructure	What institutions, organizations, facilities or services exist? What is their relationship to local populations, now and in the past? What is likely to change in the future?
Resources	What important assets does this community possess, or have access to? These might include financial resources, intellectual resources, human resources, informational resources and so on. How are these assets held and managed? What rules govern their use?
Modes of Livelihood	What are the principal bases of the economy? How are people organized for work? How are they connected and/or differentiated? Are there extremes of wealth and poverty? What are current economic trends? How are resources and benefits distributed? How is time patterned?
Issues and Concerns	What things have engaged the time, thought, and energy of people here? What are people's main concerns or issues? How do they see these issues? Are there differences of opinion regarding these? What sorts of options are seen as acceptable or workable for dealing with them?
Principal Constraints	What factors or conditions lying largely outside the control or prediction of the community are important for understanding what is happening inside the community itself? How do people see these things? Have they changed over time?

Quality of Information

- Accuracy, validity: does the information show the true situation?
- Relevance: is the information relevant to user interests?
- Timeliness: is the information available in time to make necessary decisions?
- Credibility: is the information believable?
- Attribution: are results due to the project or to something else?
- Significance: is the information important?
- Representativeness: does the information represent only the target group or also the wider population?

Types of Data

- *Quantitative* data (hard data) tend to be objective, representative and more importantly specified in numbers and can be verified and replicated. Good at "predicting *what* will happen."
- *Qualitative* data (soft data) focus more on the "*why* things occur" and meaning, but cannot be described with hard, secure facts.

Techniques for Appraisal

- Observational Walks and Transect Diagrams
- Participatory Mapping
- Historical Mapping
- Interviews
- Focus Group Discussions
- Group Brainstorming and Role Playing
- Ranking Exercises
- **S**trengths, **W**eaknesses, **O**pportunities, **L**imitations (SWOL) or **C**hallenges (SWOC)
- Analysis of stakeholders and potential partners

3. Designing and Carrying Appraisal

Group and Members	Meeting Place	Key Interests
Mothers	Their Homes	Nutrition and Health of Children
Women Craft Workers	Homes or Market	Income Generation
Unmarried Women	Their Homes	Jobs and Family Support
Teachers	Schools	School Supplies, Income for School, More Teachers, Dependable Electricity, Water and Sanitation at Schools, Tele-education
Health Care Workers	Their Homes	Tele-medicine, Medical Supplies, Funding Mechanism, More Education
Subsistence Farmers	Their Fields or Homes	Landslides (Deforestation), Agricultural Education, Income Generation
Cash Crop Farmers	Their Fields or Market	Landslides (Deforestation), Empowerment for fair trade, Agricultural Education, Income Generation

Interest Group Matrix - Namsaling

What is to be investigated?	Who could participate in studying (who has interest)?
Health and nutrition of children	Mothers
Where supplies can be attained and how goods can be sold (potential buyer contacts)	Women Craft Workers
People's perception of hiring unmarried women, method of training for jobs, and ability of family to support unmarried women	Unmarried Women and Potential Employers
Potential for additional training, supplies teachers, tele-education, electricity, water and sanitation	Teachers
Potential for pre-natal supplies, additional training, tele-medicine and funding mechanism	Health Care Workers
Sustainable agricultural practices and income generation techniques	Subsistence Farmers
Sustainable agricultural practices, income generation techniques and fair trade agreements	Cash Crop Farmers
Potential for decentralized water filtration and latrines	All Residents

Action Research Matrix - Namsaling

4. Data Analysis

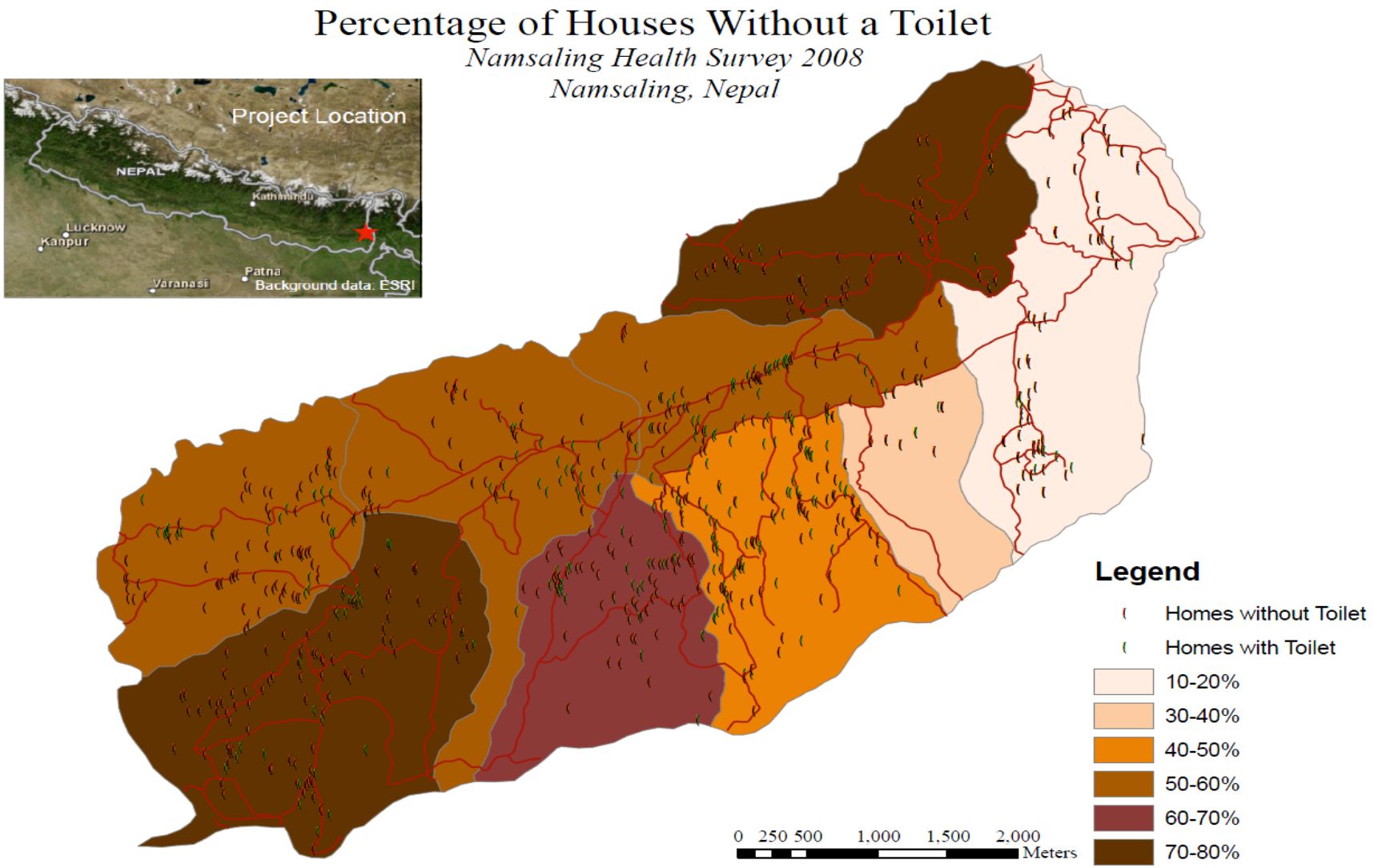
- The most significant issues, concerns, needs (not just wants) that the community is facing and their prioritization
- Perceived core problems and cause-effect relationship for each problem
- The community's available resources and assets (natural, human, social, economic, and infrastructure capital)
- Strength, Weakness, Opportunities, Threats (SWOT)

SWOT Analysis of Community Services

Topics to be investigated	Strengths	Weaknesses	Opportunities	Threats
Water Infrastructure	- Highly accessible	- Often broken	- Consistency - Maintenance	- Populatiom growth, people cheat the system - Terrain doesn't allow for certain technologies
Food Security	- Land is available for farming - Food available in stores/market	- Low crop in poor commu-nites (located in arid areas and on steep hillsides) - Lack of pur-chasing power	- Increase production - Improve nutrition	- Crops vulnerable to drough and heavy rain storms
Public Transportation	- It exists	- Only runs into town once a week	- More access to sell and trade goods	- Steep terrain and unreliable roads
Sanitation Infrastructure	- Water reuse - Access to latrines	- Poor solid waste management	- Infrastructure - Community attitude	- Socioeconomic inequality - Lack of education - Maintenance
Natural Disaster Planning	- Some attention from NGOs	- Lack of under-standing	- Understand the risk through education - Adoptiom of mitiga-tion techniques	- Science conflicting with religion - More immediate concerns/ low priority for commuity
Health Care	- Basi first aid is accessible	- Difficult to reach hospitals	- Family planning - Health education	- Lack of transportation - Habit change to improve health conflicting with culture, religion and values.

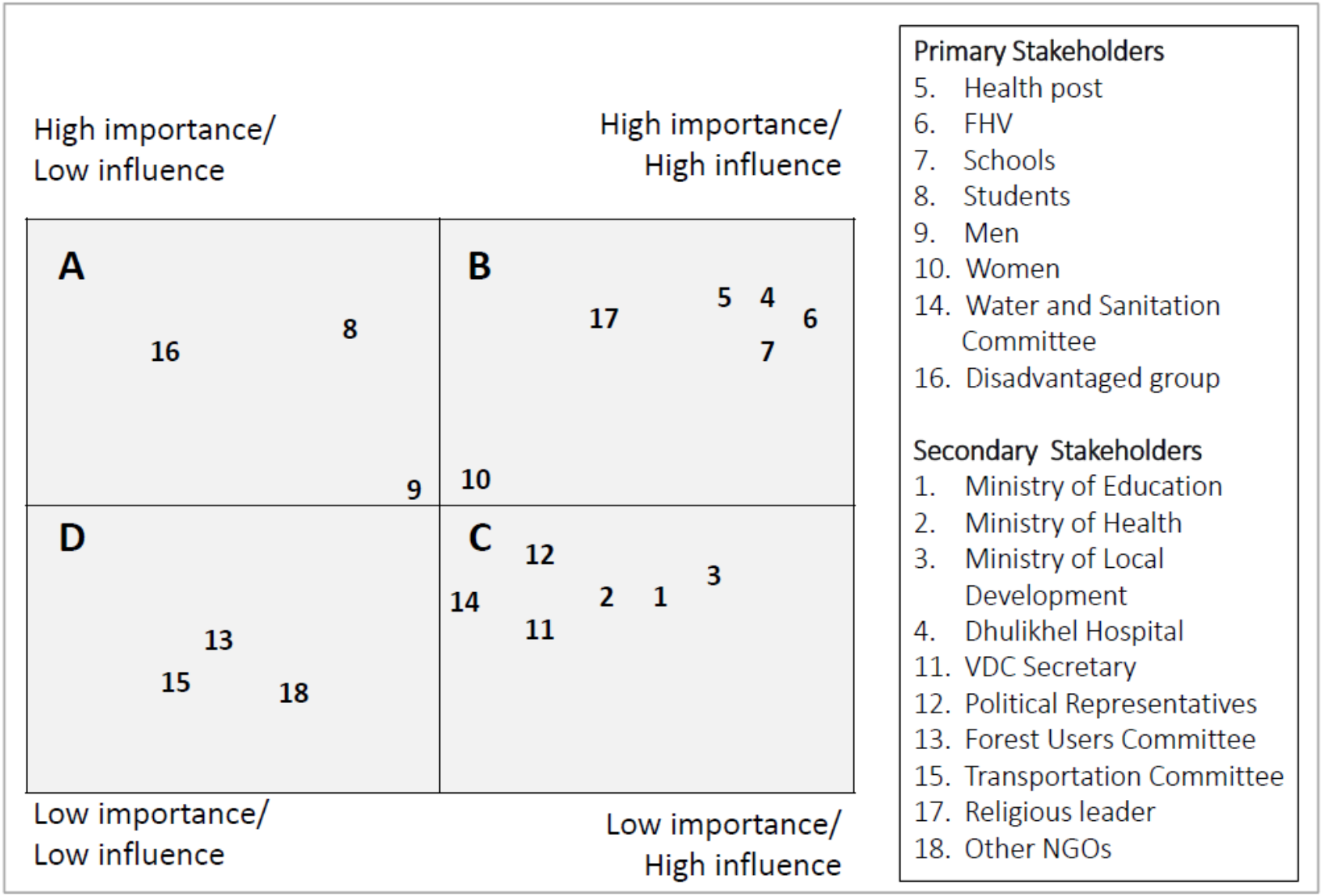
Carrying Out PAR

Participatory Mapping Exercise Example:



Stakeholder Analysis

Group	Strengths	Weaknesses	Influence for/by project
NCDC	• Based locally • Experience on localprojects • Cultural • Knowledge • Connected locally and internationally	• Communication ability is slow	• Mentors/coworkers/facilitator for implementing project • Resources of knowledge
Mothers	• Influence on youth and individual families • Can implement change in household	• Not educated • Unemployed • Can only influence within household	• Can pass on information to husband and children • Can gain training in common household health practices • Can assist in implantation of the project
Subsistence Farmers	• Knowledge of local agricultural practices and problems (deforestation)	• Uneducated	• Can help in implementation of project • Gain education about sustainable farming practices (cropplanting times, rotation and harvesting techniques)



Primary Stakeholders

5. Health post
6. FHV
7. Schools
8. Students
9. Men
10. Women
14. Water and Sanitation Committee
16. Disadvantaged group

Secondary Stakeholders

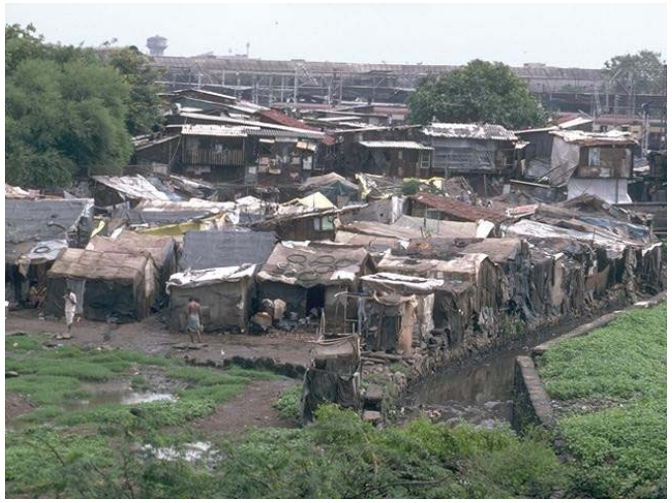
1. Ministry of Education
2. Ministry of Health
3. Ministry of Local Development
4. Dhulikhel Hospital
11. VDC Secretary
12. Political Representatives
13. Forest Users Committee
15. Transportation Committee
17. Religious leader
18. Other NGOs

Partner Analysis

- Who are the partners and their values?
- What level of experience and expertise can be expected of each partner including strength, weaknesses, opportunities and challenges?
- How a working partnership is likely to take shape? (i) Roles and responsibilities of different partners in proposed projects, (ii) information sharing, (iii) joint project planning; (iv) resource sharing, (vi) dealing with conflict; (vii) defining phase-in and phase-out strategy for all partners

Vulnerability Analysis

- Food and nutritional
- Health
- Habitat and Shelter
- Water and Sanitation
- Educational
- Economic
- Environmental
- Civil Society



Risk Analysis

Risk	Causes	Impact	Likeliness	Risk Level
Landslides	Heavy rainfall, poor rainwater control, deforestation	Severe	Unlikely	Medium
Flooding	Heavy rainfall, deforestation	Severe	Likely	High
River Overflow	Heavy rainfall, poor solid waste management	Moderate	Somewhat likely	Medium
Forest Fires	Carelessness in cooking, arson	Extreme	Very Unlikely	Medium
Deforestation	Over harvesting of trees	Severe	Likely	High
Contamination	Poor waste management	Low	Likely	Medium
Chemical Contamination	Overuse of pesticides	Low	Somewhat likely	Low
Earthquakes	Seismic Activity	Severe	Somewhat likely	Medium

Impact						
	Extreme	Medium	Medium	High	High	High
	Severe	Low	Medium	Medium	High	High
	Moderate	Low	Low	Medium	Medium	High
	Low	Low	Low	Low	Medium	Medium
	Negligible	Low	Low	Low	Low	Medium
		Very Unlikely	Unlikely	Somewhat Likely	Likely	Very Likely

Problem Identification

- Clearly identify the what, who and where in the problem statement.
  - The "what" defines "the condition the project is intended to address"
  - The "who" defines "the population affected by the condition.
  -The "where" states "the area or location of the population."

Examples

- Acute respiratory problems in 43% of households in rural Ayaviri;
- Inadequate housing in a (specific) Indian Reservation in Montana;
- No access to potable water for 42% of the Loreto community;
- No toilet of minimum hygienic standards are available for 70% of the rural population of Loreto;
- Electricity is only available to 24% of the town of Ayaviri and is unreliable;
- High incidence of communicable diseases in the northern part of the village of Namsaling;
- Flooded latrines during the rainy season in the low elevation part of the village of Salinas.

Causes and Consequences

(Subject (Who), verb, object)

- Community xyz is exposed to high levels of turbidity and E. Coli due to using surface water
- Children often die of dehydration due to diarrheal diseases
- Children miss many school days per year due to recurring health problems
- Farmers cannot bring goods and products to markets because of bad roads
- The neighborhood is not safe at night due to a lack of security Women are in danger when using the sanitation facilities in the refugee camp at night

Problem Identification

- Are the problems identified the most critical ones?
- Are the problems identified capturing the concerns of both men and women, marginalized and vulnerable groups?
- Are the problems identified addressing the *current needs* of the community, and not its wants, and future desires?

Problem Rankings

Stakeholders	Rank			
	1	2	3	4
Households	Water	Energy	Road	Agriculture
Schools	Water	Sanitation	Access	-
Store Owners (3)	Road	Water	Sanitation	Health
Youth	Sanitation	Water	Road	Energy
VDC Leaders	Water	Health	Road	Energy
Adult Focus Group	Road	Water	Agriculture	Sanitation