

Multistakeholder Watershed Management Modes in a Changing Climate

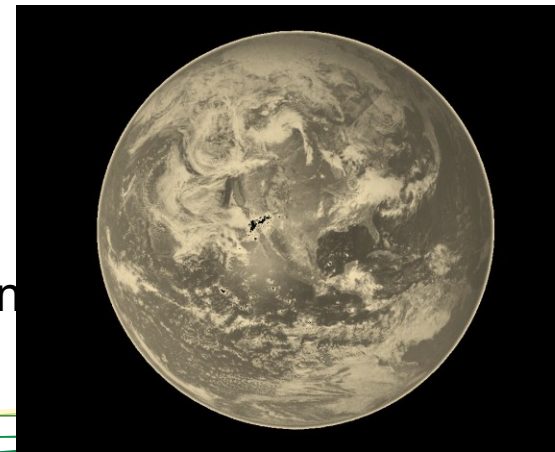
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Training-Workshop on Climate Change Adaptation in
Watersheds for Water, Food, and Environmental Security in
Southeast Asia, SEARCA, 17 October 2013



Overview of Presentation

- Introduction
 - Overview of Stakeholders in Watershed Management
 - Stakeholder Analysis as a Tool of Watershed Management
 - Participatory Vulnerability Assessment
 - Role of Stakeholders/Institutions in Watershed Management
-

Introduction

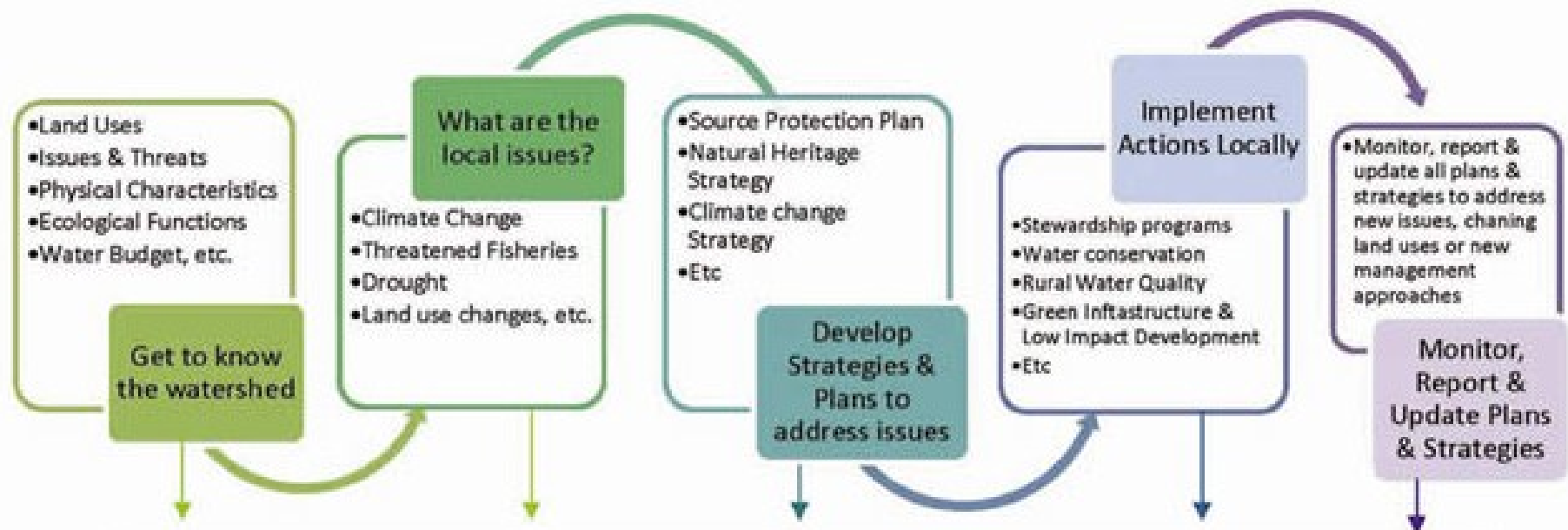
- Watersheds and the human population living therein are vulnerable to climate change
- Climate change adaptation involves variety of institutions and stakeholders
- Effective adaptation generally depends on stakeholders' participation and support



Introduction

- Watershed management initiative represents a collective effort to organize on behalf of interested stakeholders, concerned area citizens, and relevant public agencies
 - It is aimed to improve condition and related management regime of the water and natural resources within the watershed to produce the necessary ecosystems goods and services on a sustainable basis to improve human well-being
 - At the core of successful watershed management is therefore the active participation of the different stakeholders
-

Integrated Watershed Management Process



Stakeholder Input

To be successful, IWM requires collaborations and involvement of a wide variety of community interests and water users including municipalities, businesses, residents, agencies and landowners. They decide on the priority issues that need to be addressed, help to set goals, decide on what actions to take and implement locally.

Overview of Stakeholders in Watershed Management

Reality in Watershed Management

The New Nanny...



STAKEHOLDER

- ☛ any group of people, organized or unorganized, who share a common interest in a particular issue or system
- ☛ in watershed management, stakeholders may be viewed in a continuum which include highly varied groups from forest dwellers and fuelwood collectors at the local on-site level, to downstream communities, forest departments, national governments or even the international funding agencies at the global institutional level
- ☛ may also include nebulous categories such as “future generations”, the “national interests” and “wider society”



Stakeholders at different institutional levels and their environmental interests.

INSTITUTIONAL LEVEL	EXAMPLE STAKEHOLDERS	ENVIRONMENTAL INTEREST
Global and international	International agencies Foreign governments Environmental lobbies Future generation	Biodiversity conservation Climatic regulation Global resource base
National	National governments Macro planners Urban pressure groups NGOs	Timber extraction Tourism development Resource and catchment protection
Regional	Forest departments Regional authorities Downstream communities	Forest productivity Water supply protection Soil loss and degradation
Local off-site	Downstream communities Logging companies and sawmills Local officials	Protected water supply Access to timber supply Conflict avoidance
Local on-site	Forest dwellers Forest-fringe farmers Livestock keepers Women fuel collectors	Land for cultivation Timber and non-timber forest products Grazing and fodder Cultural sites

Other Labels for and Categories of Stakeholders

👤 actors or key actors

👤 key players

👤 key participants

👤 beneficiaries/primary beneficiaries



👤 stockholder

👤 major resource users

👤 interest groups

👤 entities affected by project/program



What are some of the categories of stakeholders?

A. In terms of effect in decision making

- **Active** - those who affect (determine) a decision or action
- **Passive** - those affected by the decision or action (positively or negatively)

B. Based on target beneficiaries of a project

- **Primary stakeholders** - the heart or interest and the intended beneficiaries of the project
- **Secondary stakeholders** - other groups which are not the intended major project beneficiaries

... some categories of stakeholders

C. According to relative influence or importance

- *Importance* - those whose needs and interests are the priorities of the project
- *Influence* - refers to the power certain stakeholders have over the success of the project

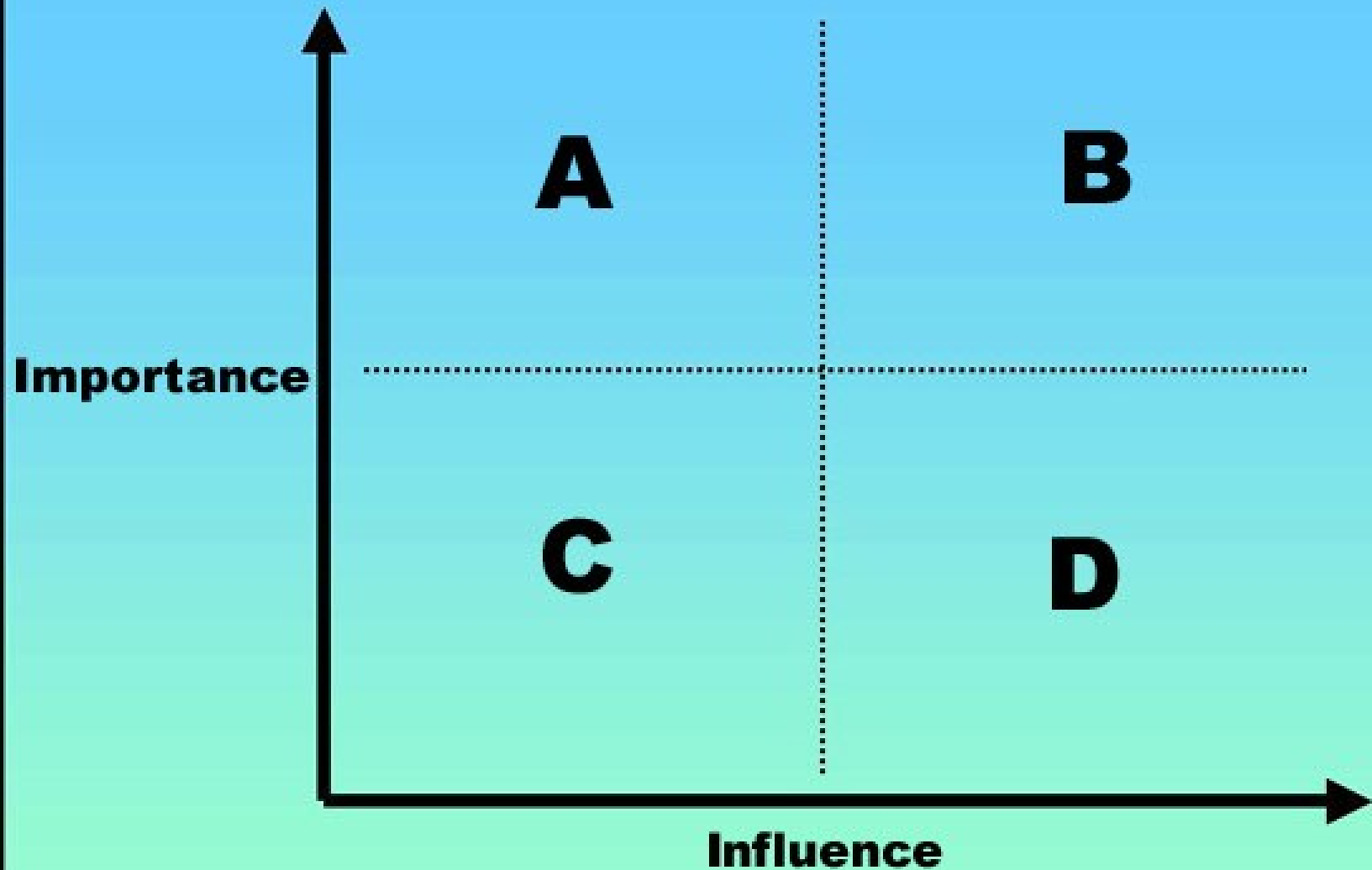


Figure 1. A system for classifying stakeholders according to importance and influence.

Sources: Grinble and Chan and K. Welland



... some categories of stakeholders

**D. According to the role of the different groups/
institutions involved or have interest in the
project area**

1. User groups within the community

**- groups that reside within the area and
direct users of local forest resources**

... some categories of stakeholders

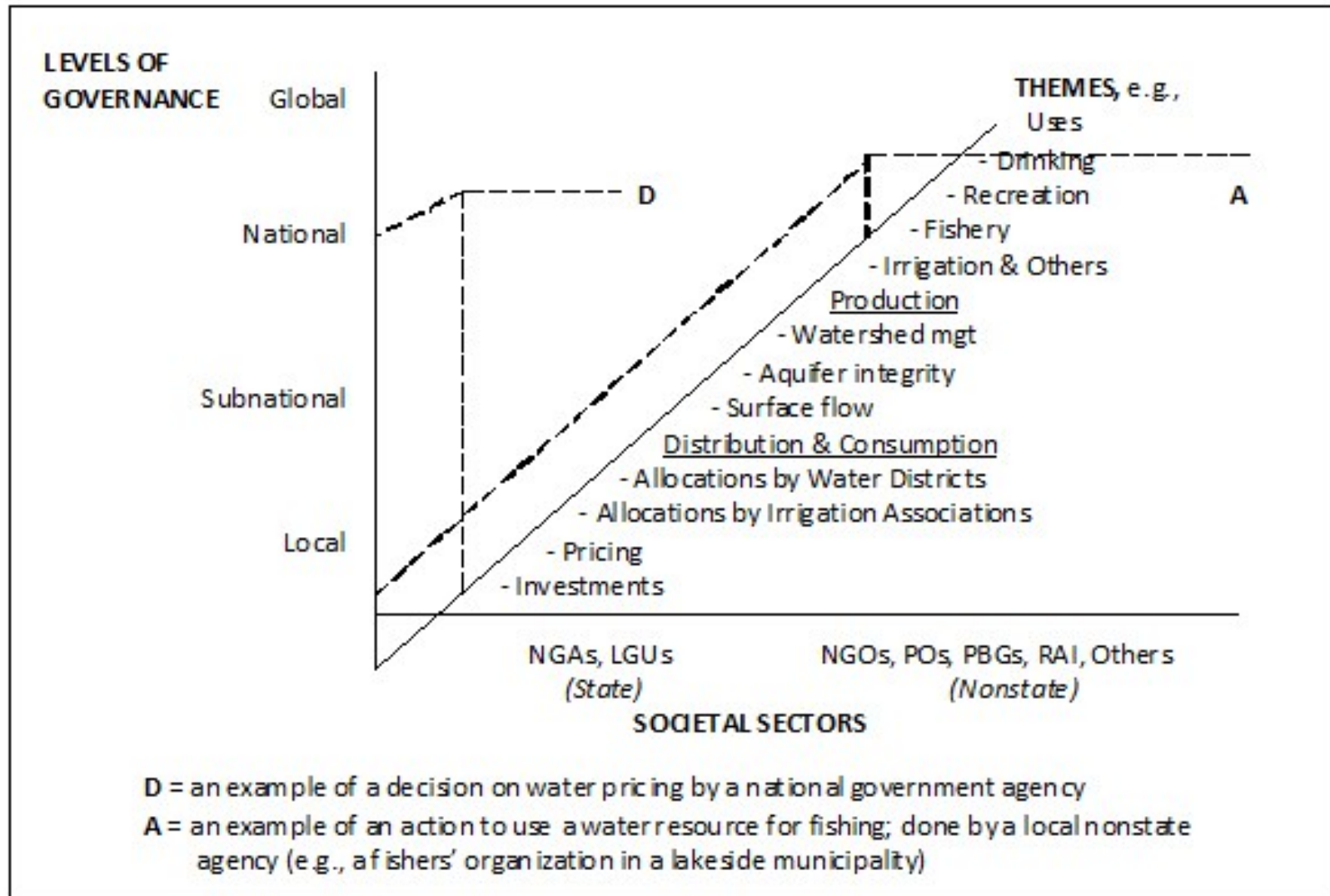
2. Mediating institutions - include state and civil society institutions such as:

- Internal state mediators (e.g. Brgy. Council),
- External state mediators (e.g. DENR)
- Civil society mediators (e.g. NGOs)

3. External economic interests – group with material interests in the local forest resources but not part of the local communities (e.g. timber buyers)



Numerous stakeholders operating at varying scales with different and oftentimes conflicting interests



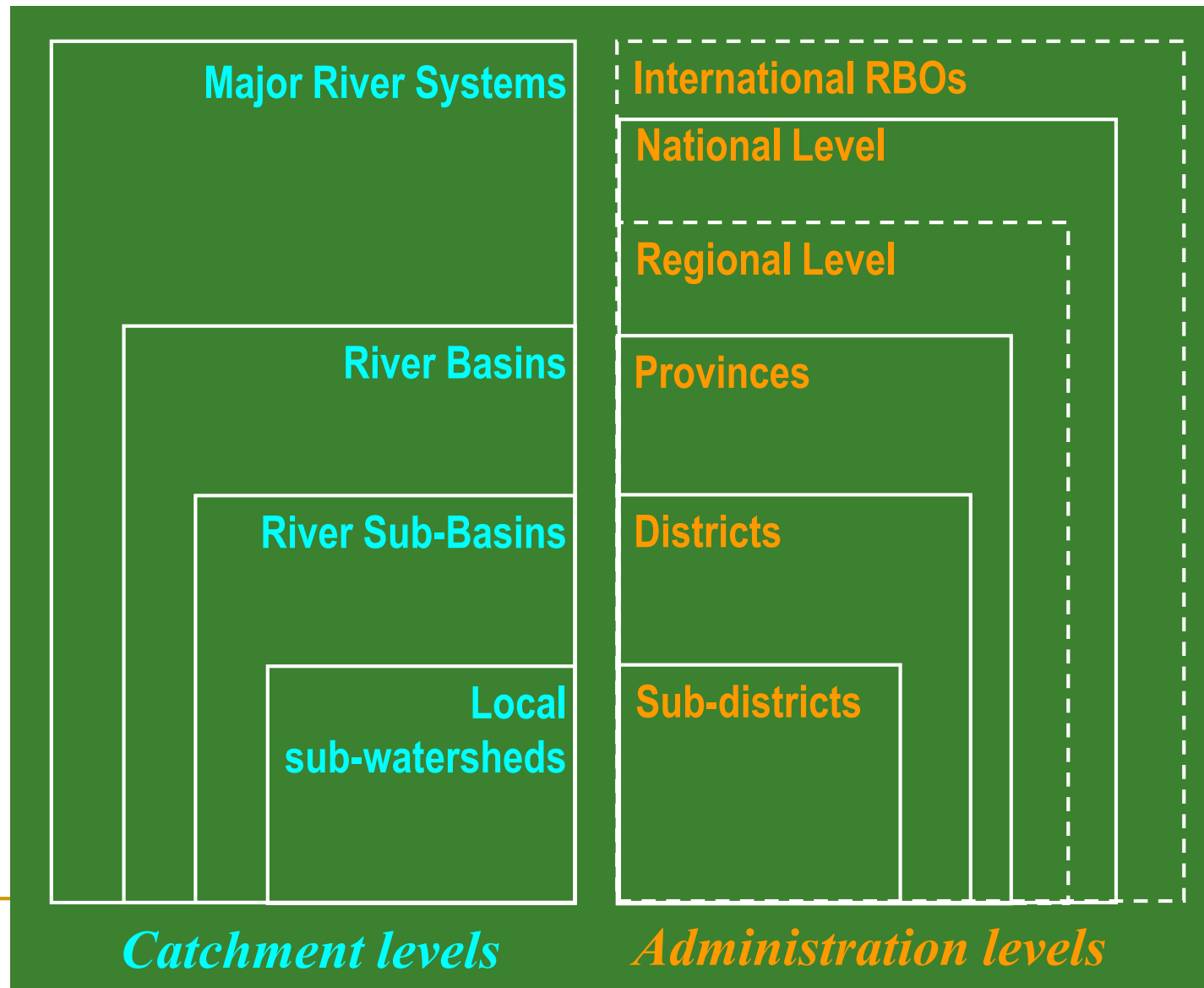
Three Dimensions of Watershed Governance (Malayang 2004)

River basin & administrative hierarchies

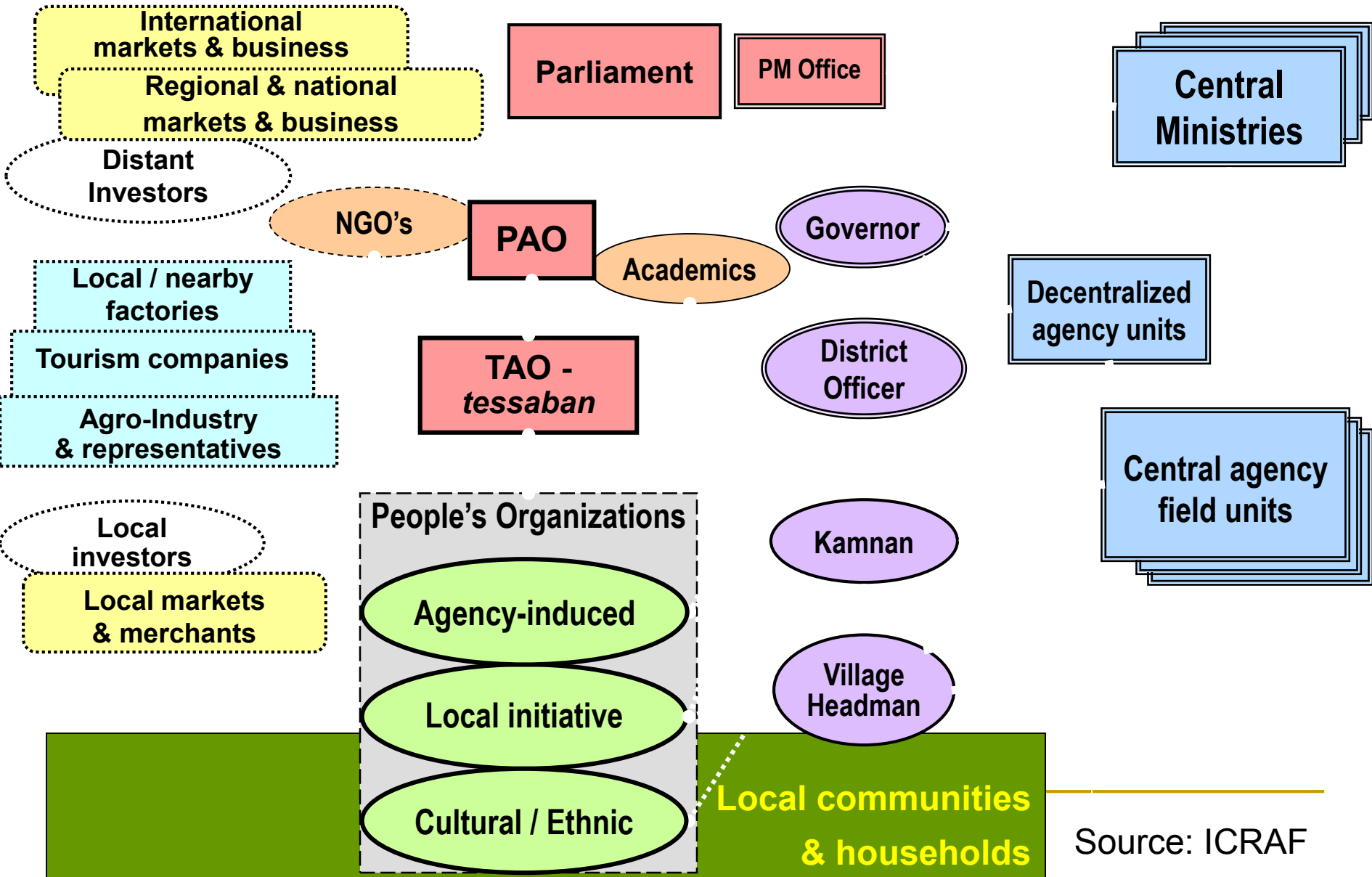
Hierarchies often have different types of boundaries

Various other types of spatial domains may be important in some areas

Source: ICRAF

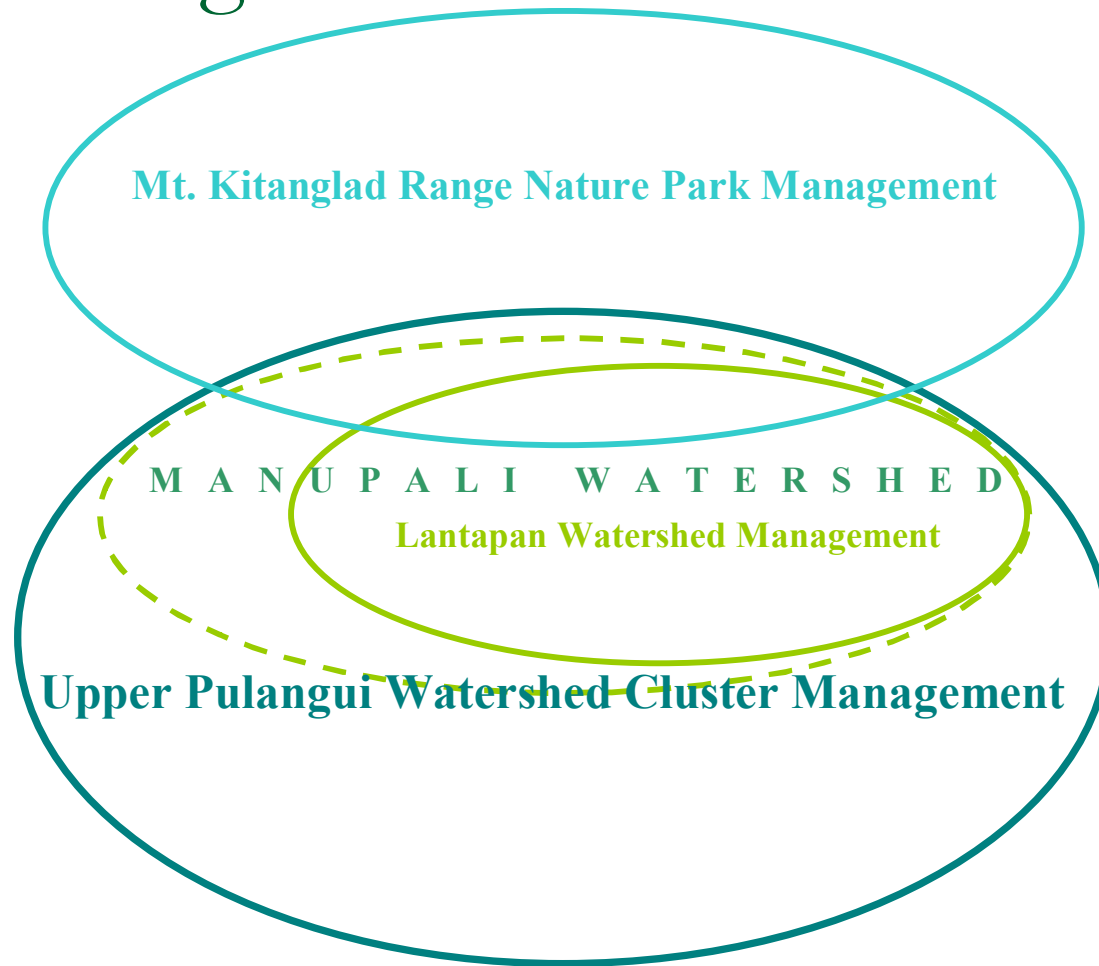


Institutional stakeholder context in sub-basins



Source: ICRAF

Multiplicity of actors in decision processes is a challenge



An example of a nested and interlocking water governance model (Source: Rola 2011).

Stakeholder Analysis as a Tool for Watershed Management



What is a Stakeholder Analysis?

- can be defined as a holistic approach or procedure for gaining an understanding of a system, by means of identifying the key actors or stakeholders and assessing their respective interests in the system.



Why is SA particularly important in watershed management?

1. *Presence of externalities*, i.e, activities done in the upper watersheds like intensive cultivation have its adverse impacts to the downstream communities.



2. *Unclear or open property rights* in many watershed areas – unclear/open property rights creates confusion in resource management, responsibilities and sharing of benefits hence need appropriate arrangements among various groups concerned



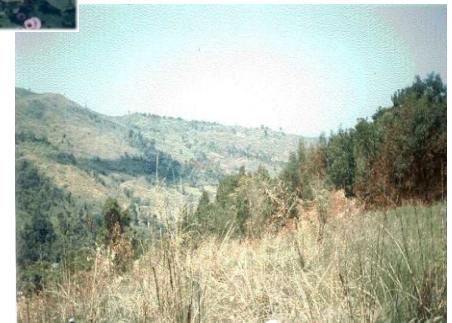
..SA, important in watershed management



3. *Different levels of stakeholders* – includes macro and micro interests and objectives and the need to consider them in decision making process

4. *Trade offs need to be made at the policy level over the use and management of resources*

– e.g., national policy objectives encourage conservation of forest for watershed values but local people are primarily interested in clearing forest lands for agriculture and other purposes.



What are the purposes of SA?

Governments and donor organizations is likely to use SA for two major practical purposes:

- ✓ *Improving the selection, efficiency, and effectiveness of policies and projects*

The explicit consideration of potential trade-offs between policy objectives and stakeholders' interests helps avoid the unexpected, facilitates good design, and improves the likelihood of good implementation.



- ✓ *Better addressing the distributional and policy impacts of policies and projects*

Explicit analysis of the interests of, and impacts of intervention on, different stakeholders (including the poor and less powerful) can help ensure that costs are borne and benefits realized by those intended.

What are the specific uses of SA in watershed management?

- 👍 **Ex ante appraisal of projects and policies;**
- 👍 **Ex post evaluation of projects and policies**
- 👍 **Monitoring and evaluation of existing policies and programs/projects**
- 👍 **General research on natural resource management and change, designed to increase understanding of general issues related to conservation and degradation**
- 👍 **Analytical support to on-going process of conflict resolution and cooperative management of a resource, village common property management**



GENERAL STEPS AND TECHNIQUES USED IN CONDUCTING SA

1. Identify the main purpose of the analysis

- What are the issues/problems that need to be addressed?**
- What are the objectives and intended outputs of the analysis?**
- How will the outputs be targeted?**

2. Constitute the SA team

- Involves interdisciplinary team with expertise on the system being analyzed**
- Participation of local communities of paramount importance**

GENERAL STEPS AND TECHNIQUES USED IN CONDUCTING SA

3. Develop an understanding of the system and its decision makers

- objectives
- target beneficiaries
- area coverage
- organizational structure
- main decision makers
- involvement of government agencies/groups
- source of funds
- other relevant information

GENERAL STEPS AND TECHNIQUES USED IN CONDUCTING SA

4. Identify principal stakeholders including their interests and characteristics

- + Key informant approach
- + Focal group approach
- + Demographic approach
- + Participatory approach through focus group discussions



Table 2. Types and composition of stakeholders in Brgy. Sooc, Bicol National Park.				
Forest User Groups Within the Community	Mediating Institutions			External Economic Interests
	Internal State Mediators	External State Mediators	Civil Society Mediators	
• Sooc Sagip Gubat at Buhay Org., Inc. (SSGBOI) • Senior Citizens Organization (SCO)	• Barangay Council • Sangguniang Kabataan Barangay • Agricultural and Fisheries Council (BAFC)	• Community Environment and natural Resources Office (CENRO) • Protected Area Superintendent (PASu) Office • Local Government Unit	• Bicol Cooperative Development Center (BCDC) • Sooc Coconut Farmer’s Organization (SCFO) • Women’s Club • Eco Scout • Bantay Gubat	• Kaing-neros • Illegal loggers • Ruben Ocampo

GENERAL STEPS AND TECHNIQUES USED IN CONDUCTING SA

5. Identify patterns and contexts of interaction between stakeholders

- + identification of allied stakeholders including the issues that cement their alliance
- + conflicts among stakeholders, causes of conflicts and how they affect watershed management
- + Power relations among stakeholders
- + Institutional relevance among stakeholders



Table 3. Alliances and relations of stakeholders

Members of the Alliance	Issues which Cement the Alliance
SSGBOI and Plan International	Plan International as source of fund
Plan International and BNPFI, PMDFI and SSGBOI	Anahaw reforestation project
DENR/PASu and SSGBOI	Information Education and Communication, training/seminars, plantation of anahaw
Congressional District and BNPFI and SSGBOI	135 ha reforestation project
DENR/PASu and Senior Citizen	30 ha reforestation project
DENR/PASu and Sooc Catholic Action	40 ha reforestation project
PCA, BAFC and SCFO	livelihood (animal dispersal, fertilizer, planting materials like pineapple and coconut)
MASUVECO and municipal LUG and Barangay Council	Malaria control, public information
Municipal LGU, Barangay Council and Women's Club	Training, livelihood project, and sewing machine
Plan International and BCDC	Credit for women

Table 36. Institutional Conflicts

Conflicting Groups	Source of Conflict
1. NGOs and PO vs. Illegal Fishpond Operators	Occupation of large portion of the mangrove area by the operators limiting the fishing ground of the local people
2. PO with assistance of the LGUs vs. Illegal fisherman and mangrove wood gatherers	Destructive methods being employed by the illegal fisherman and mangrove wood gatherers resulting to decreased productivity of the area and less catch for the legal fisherman

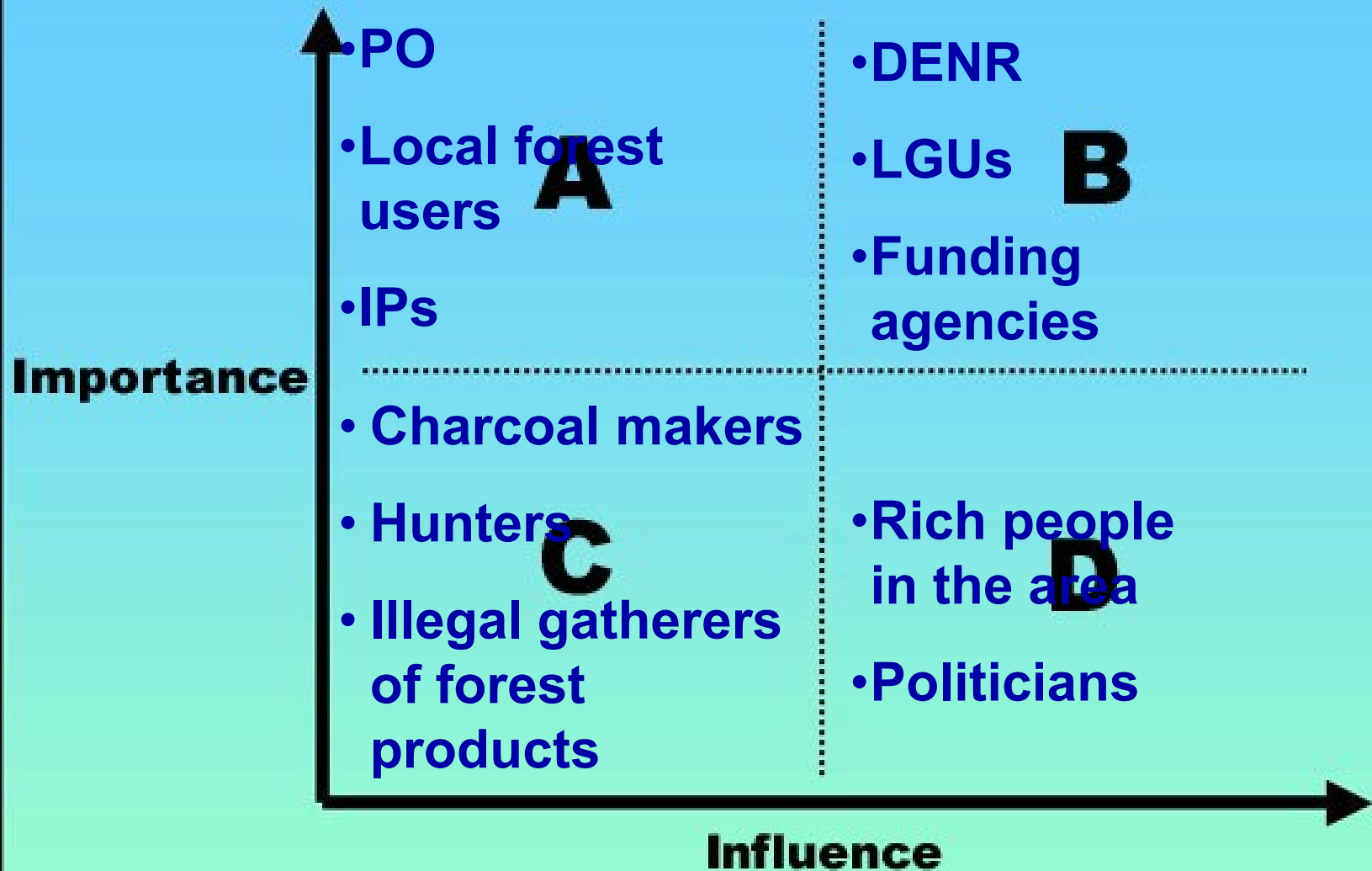


Figure 1. A system for classifying stakeholders according to importance and influence.

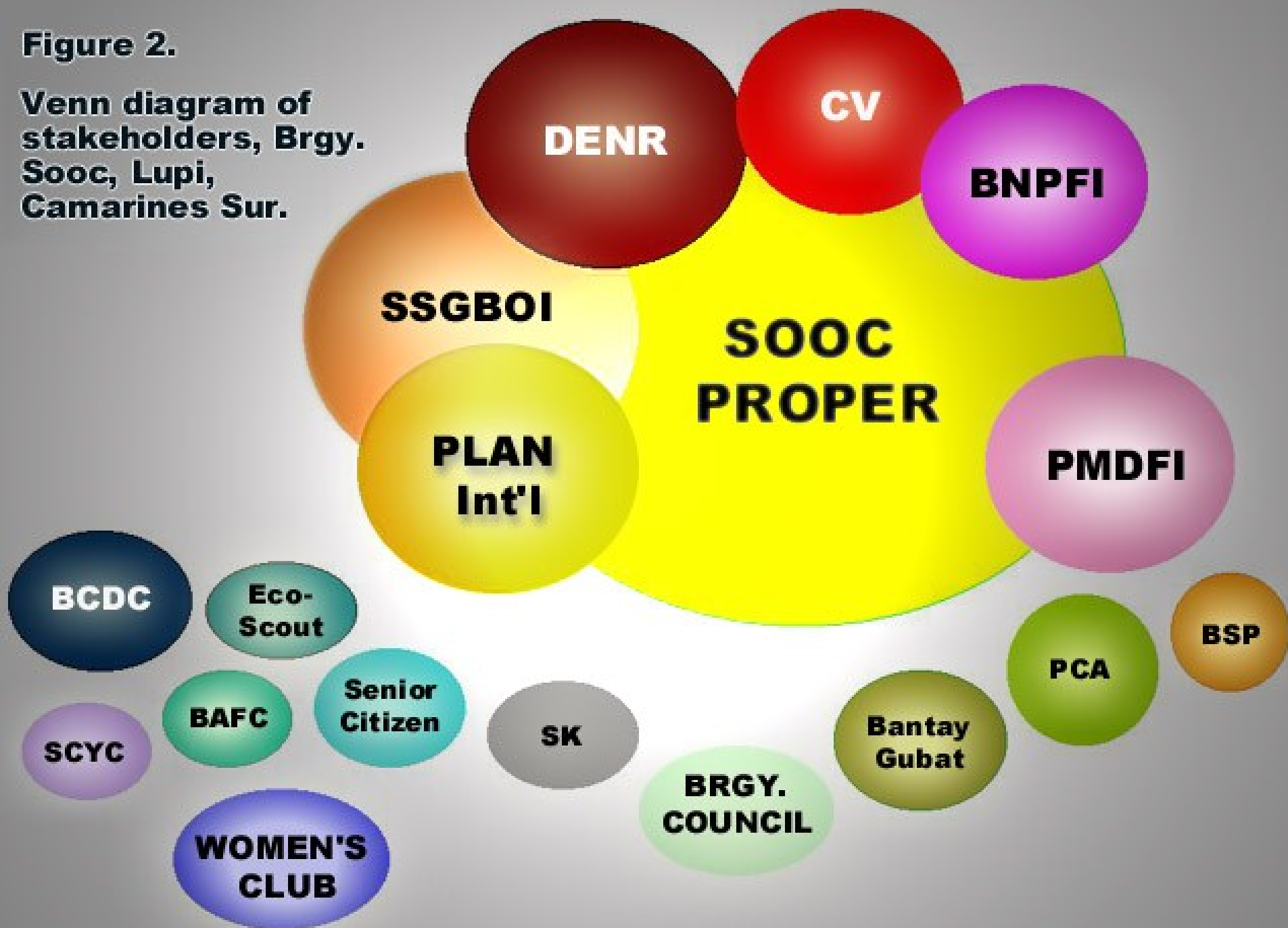
Table 4. Institutional relevance of stakeholders.

Group/ Institution	PR	D	EP	LK	FC	PX	PD	I	E	T	Ave.
SSGBOI	1	2	2	2	3	2	2	3	3	3	2.3
Senior's citizen	1	2	2	2	3	2	1	3	3	3	2.2
Congression al District	-	-	-	-	-	1	1	3	3	3	1.1
MASUVECO	-	-	-	-	-	1	1	3	3	3	1.1
PCA	-	-	1	1	2	1	1	3	2	3	1.8
LGU-Lupi	2	2	2	2	3	1	1	3	3	3	2.2
Checkpoint	-	-	1	-	1	2	1	2	1	2	1.0
PASu	3	3	1	1	2	3	1	3	3	3	2.3

Numbers 1, 2, and 3 refers to low, medium, and high levels of achievement, respectively, in relation to the following qualities: 1) PR – Pre-existing rights; 1) D – Dependency; c) EC – Economic Poverty; d) LK – Local Knowledge; e) FC – Forest-Culture Integration; f) PX – Proximity; g) PD – Power Deficit; h) I – Importance; i) E – Effectiveness; and j) T – Level of Trust.

Figure 2.

**Venn diagram of
stakeholders, Brgy.
Sooc, Lupi,
Camarines Sur.**



GENERAL STEPS AND TECHNIQUES USED IN CONDUCTING SA

6. Participatory action planning for sustainable watershed management



Table 5. Action Plan involving different stakeholders

Proposed Activities	Stakeholders Involved	Mechanism for Implementation
Livelihood Program	Barangay Council Municipal of Bay Cooperative of Brgy. Bitin, other LGU's and Samahang Kababaihan	Training Seminars
Watershed Protection	Watershed Protectors Residents of Barangay Bitin	* Information Drive about the value and uses of Watershed and on how to maintain it * Encouragement of Community Participation
Tree Planting Campaign	Barangay Council Municipal of Bay Chevron Residents of Brgy. Bitin Watershed Protectors	* Fund Raising Events to be able to buy seedlings * Active Participation of all stakeholders
Forest Conservation	Barangay Council Municipal of Bay Chevron Residents of Brgy. Bitin Watershed Protectors	* Integrative, Development, Participatory and People Oriented Programs * Community-Based Forestry Management

Community-based monitoring of watershed services

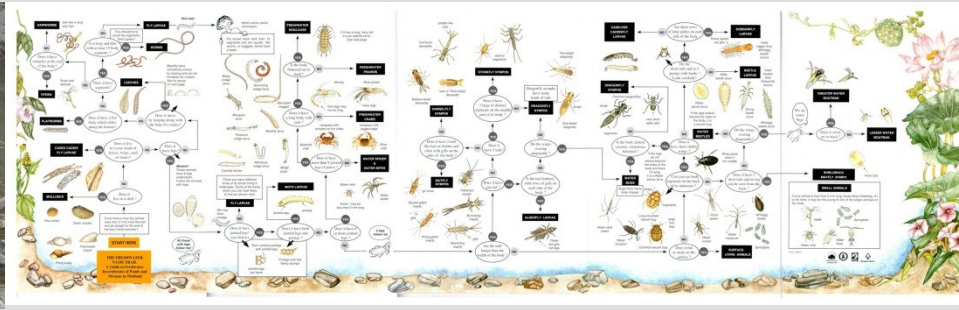
Rainfall, temperature & humidity



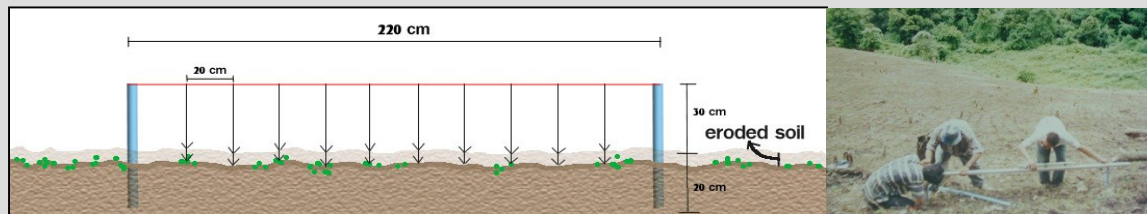
Streamflow

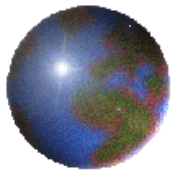


Water Quality using Biological Indicators



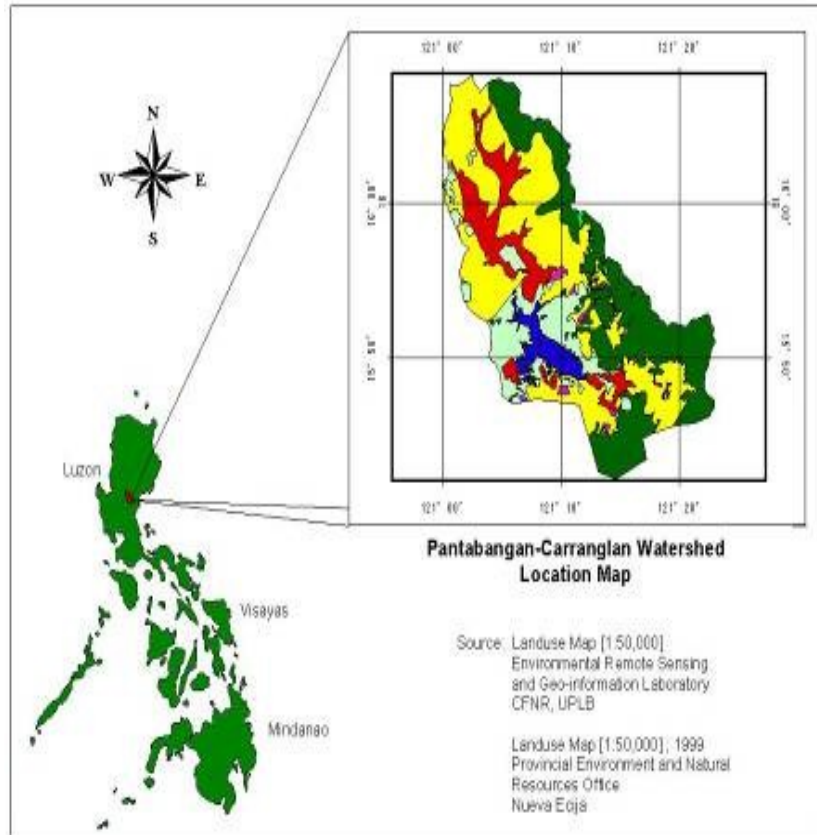
Soil Erosion and Deposition

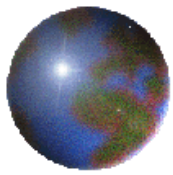




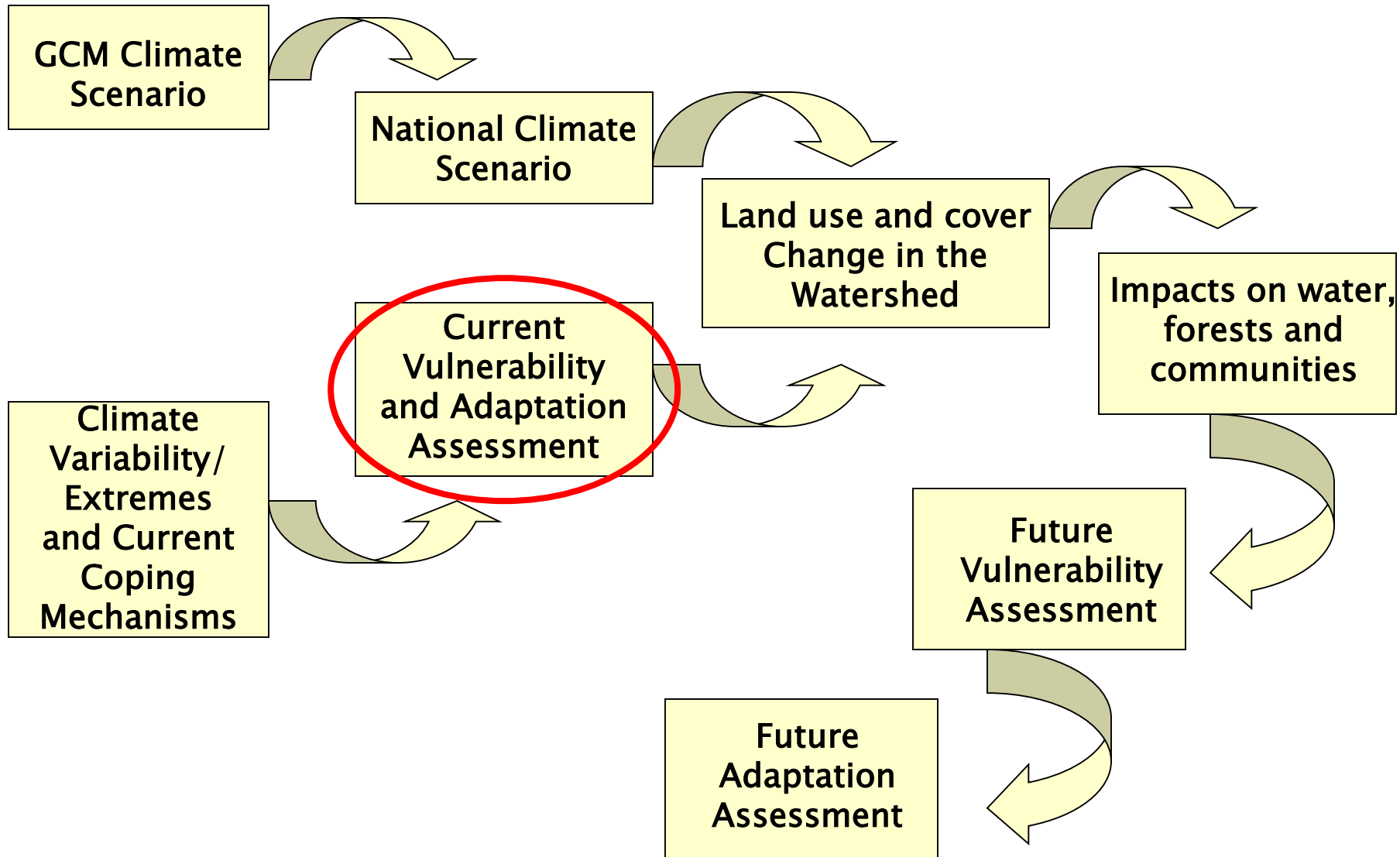
Participatory Vulnerability Assessment

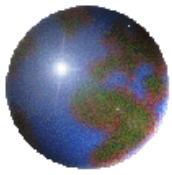
The Case of Pantabangan-Carranglan Watershed





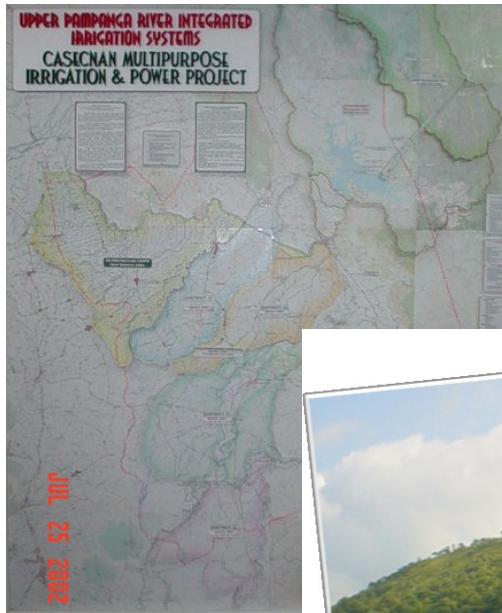
General Framework/Methodology of AS 21

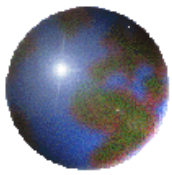




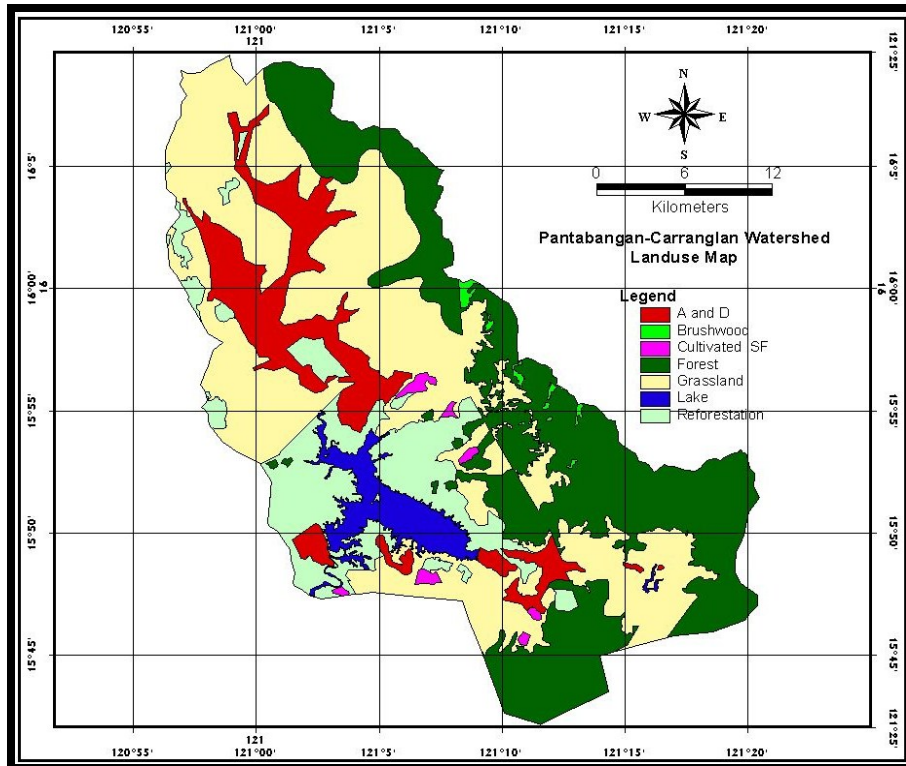
GENERAL SITE DESCRIPTION

- ❖ **Provides water primarily for hydroelectric generation and irrigation purposes**



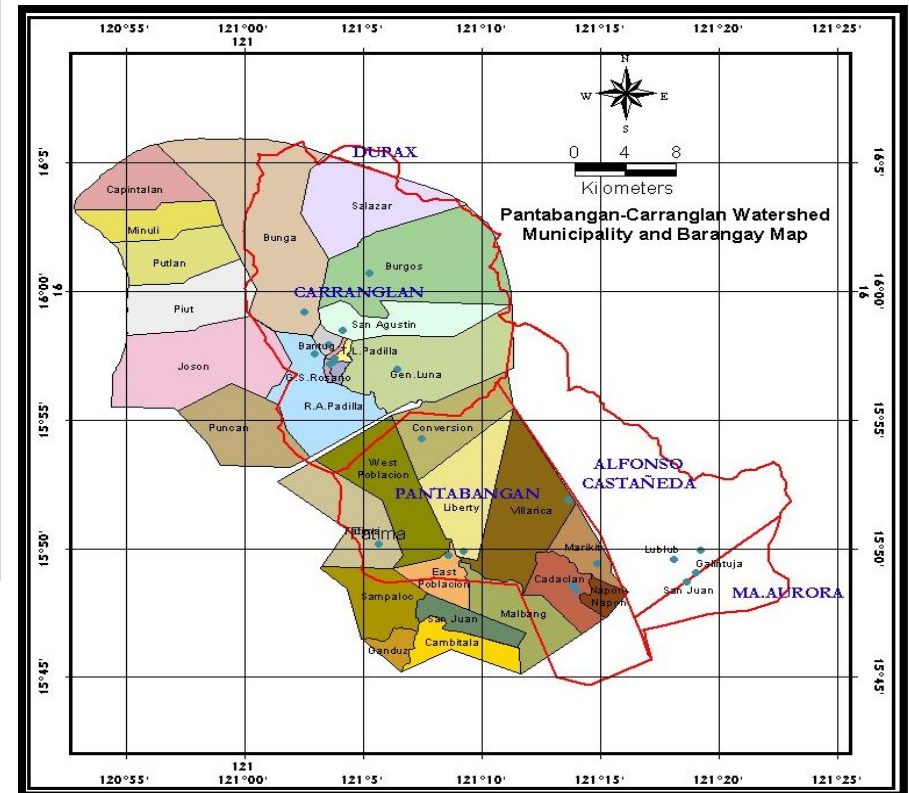


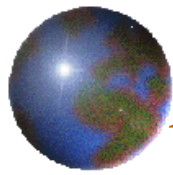
GENERAL SITE DESCRIPTION



Land use Map

Municipality and Barangay Map





ASSESSMENT PROCESS

1. Awareness generation among various stakeholders



NPC/NIA Briefing, Pantabangan



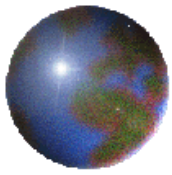
National Orientation, Manila



DENR Briefing, Philippines



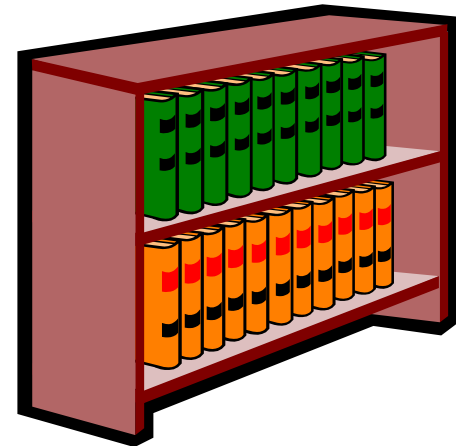
CLSU Briefing for LGU, Philippines



ASSESSMENT PROCESS

2. Gathering secondary information

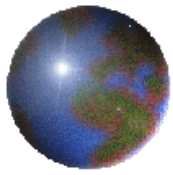
- Demographic characteristics
- Socio-economic characteristics
- Geographic factors
- Governance structure





Time line analysis





ASSESSMENT PROCESS

3. Field study

Identification and analysis of adaptation strategies

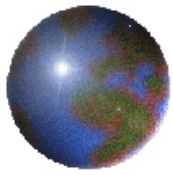


Household interviews



GPS reading of vulnerable areas





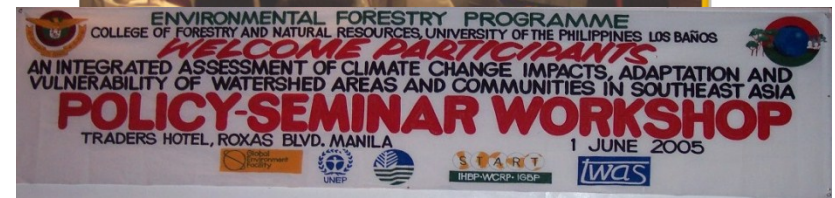
ASSESSMENT PROCESS

4. Data encoding and analysis

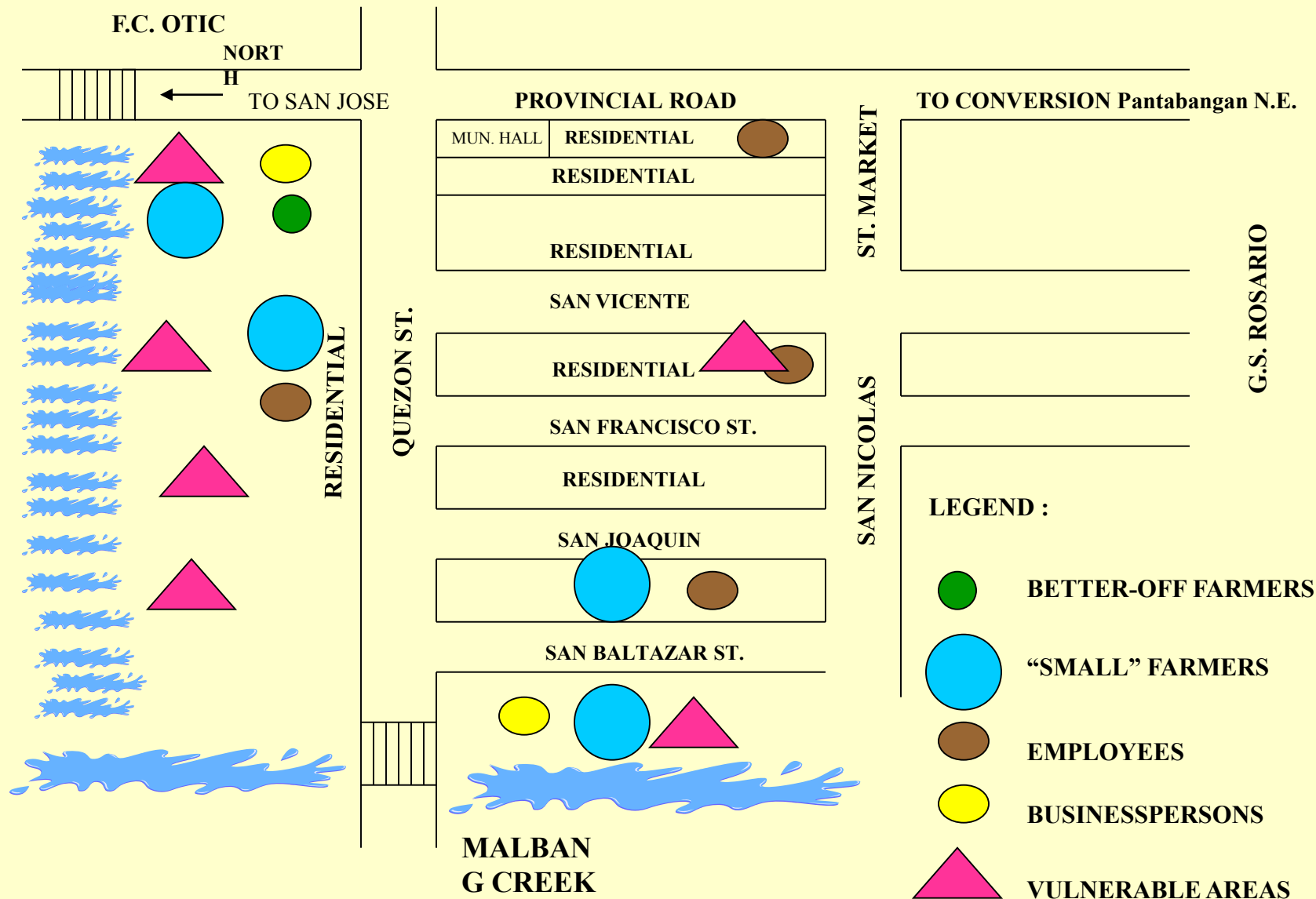


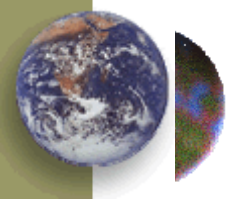


- To validate findings and engage stakeholders in adaptation planning
- To generate interest and support among various sectors on climate change initiatives and strengthen the research-policy link

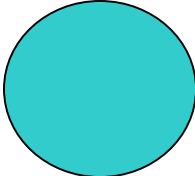
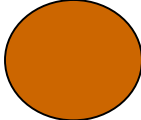
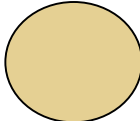


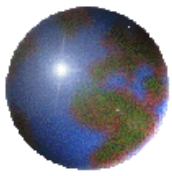
Location of vulnerable people and places in Brgy. D.L. Maglanoc, Carranglan using participatory mapping





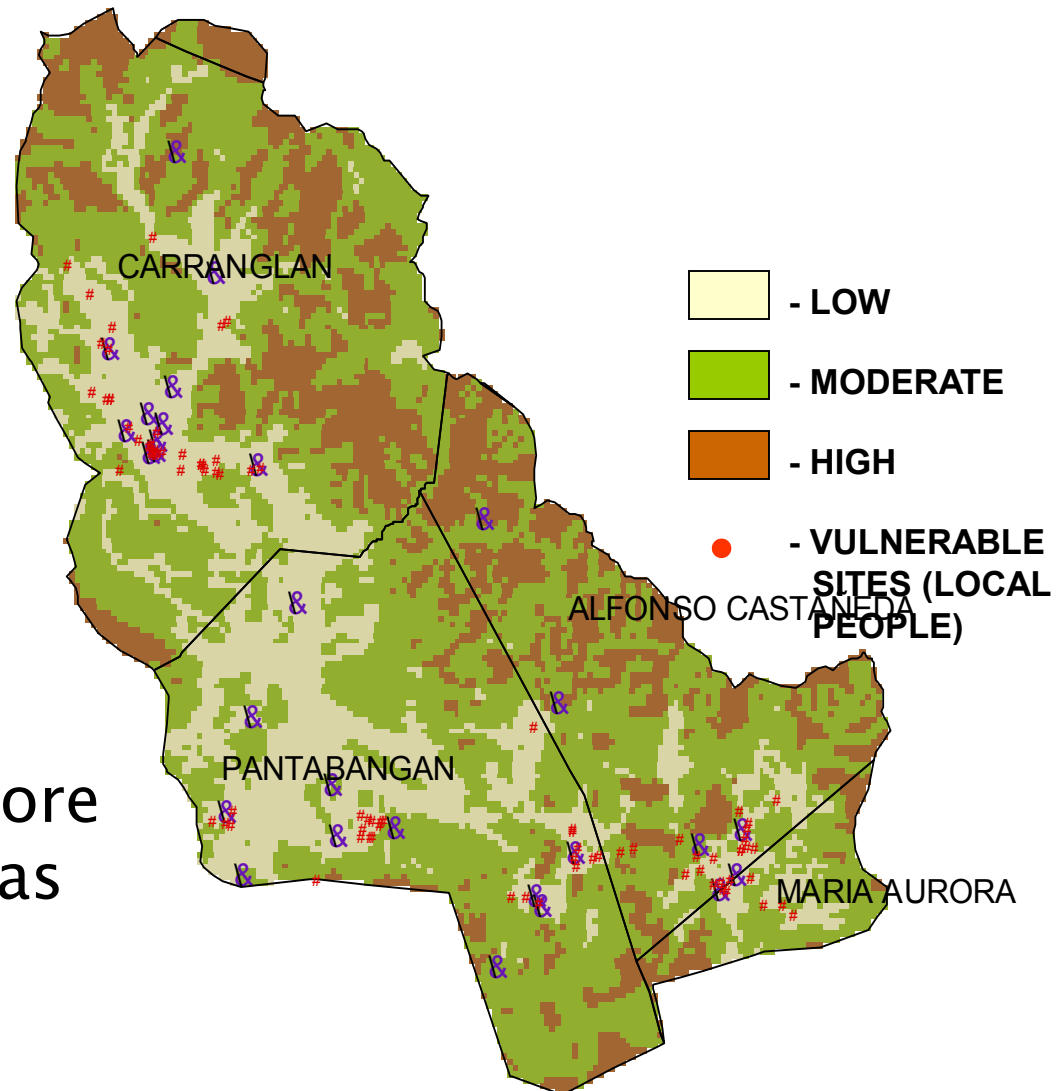
Impacts and Vulnerability of Various Socioeconomic Groups to CV&E

Groups	Impacts	Degree of (-) Impacts	Vulnerability
Better-off farmers	↓ production & income; ↔ food, livelihood, health		Better coping mechanism - low vulnerability
 “Little” farmers	↓ production, food, livelihood, health; more debt		Poor coping mechanism – high vulnerability
Employees	↑ price of commodities		“Average” coping mechanism – moderately vul.
Business- persons (small-scale)	↓ in sales		“Average” coping mechanism – moderately vul.



VULNERABILITY MAP BASED AND BIOPHYSICAL AND SOCIAL PARAMETERS

- Most of the forest and brushland areas are classified as highly vulnerable
- More than 65 per cent of the entire watershed being classified as moderately vulnerable and more than 25 per cent as highly vulnerable



Summary of Adaptation Practices of Various Socioeconomic Groups based on results of FGDs

Socioeconomic Groups	Examples of Adaptation	Perceived Effectiveness	Recommendations
Poor farmers	High interest loan; plant vegetables along river bank; rotate irrigation water	Some effective; others not	Establish cooperative; don't allow entrance of imported products; prioritize poor farmers in livelihood projects
Average Farmers/ fisher folks	Plant vegetables along river bank; Engage in other sources of livelihood	Mostly Effective	Provide marketing assistance/support; provide other sources of livelihood
Employees/ small entrepreneurs	Avail of government loans; store food supply and other farm inputs	Mostly Effective	Institute "price watch" to protect consumers from prices
Rich farmers	Store food grains & farms inputs; lend money /farm inputs to poor farmers	Effective	Lend money to poor farmers with low interest

Role of Institutions/Stakeholders Watershed Management in the Context of CC Adaptation

Types of Institutions/Stakeholders and their Roles

Three general types of institutions and stakeholders that facilitate climate change adaptation:



Civic



**Public or government
(state)**



Private

Types of Institutions and Stakeholders and their Roles (Philippines)

Institutions/ Stakeholders Category	Composition	Role
State (Central Government)	<u>Legislative</u> ■ House of Congress <u>Executive</u> ■ Climate Change Commission ■ DENR ■ Other line agencies and institutions ■ Govt financial institutions	■ Enact laws ■ Policy-making body, coordinate, monitor, evaluate programs ■ IMS, develop/implement CC investment programs ■ Advisory, coordination and technical support ■ Provide financial packages for climate-related projects

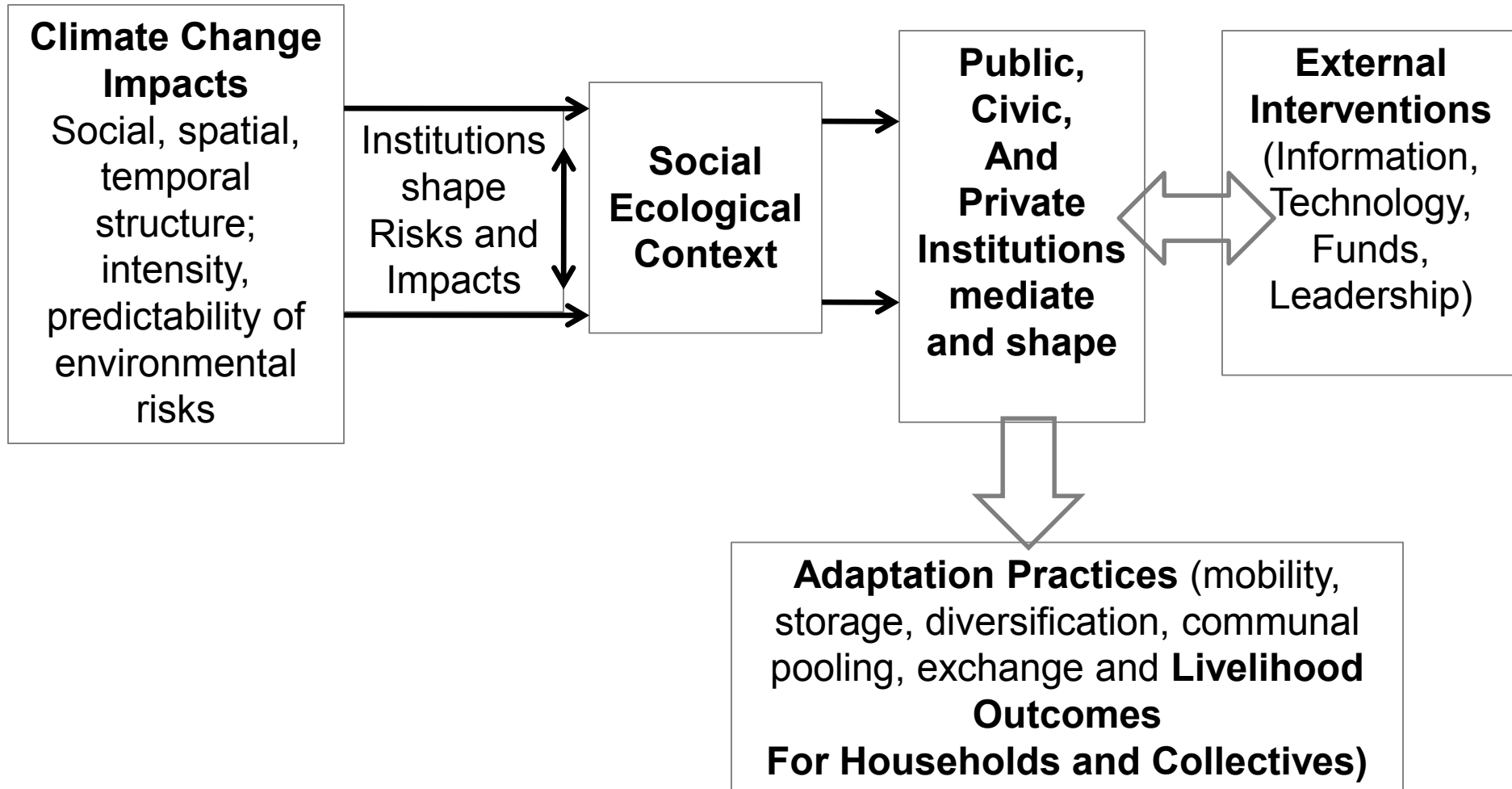
Types of Institutions and Stakeholders and their Roles

Institutions/ Stakeholders Category	Composition	Role
State (local government unit)	Provincial, municipal, cities and barangay LGUs	■ Political decisions & policymaking ■ Mgt of local development ■ Provision of basic services ■ Develop, implement and review local climate change plans
Private sector and donor organizations	Private companies Private banks Donor organizations (ADB, GTZ, WB, JICA, etc.)	■ Financial investment on climate change-related projects like CDM, REDD, adaptation projects ■ Technical Assistance

Types of Institutions and Stakeholders and their Roles

Institutions/ Stakeholders Category	Composition	Role
Civil society	Academe/Research NGOs/Civic organization POs/communities Media	■ Generate knowledge and scientific info; human resource development, IEC, policy advocacy, technical assistance ■ Mobilizing groups, organizing and educating communities, policy advocacy, development work ■ Implement plans at the community level, early warning system, IEC ■ IEC, early warning system

Ways by which institutions shape climate change impacts and adaptation outcomes

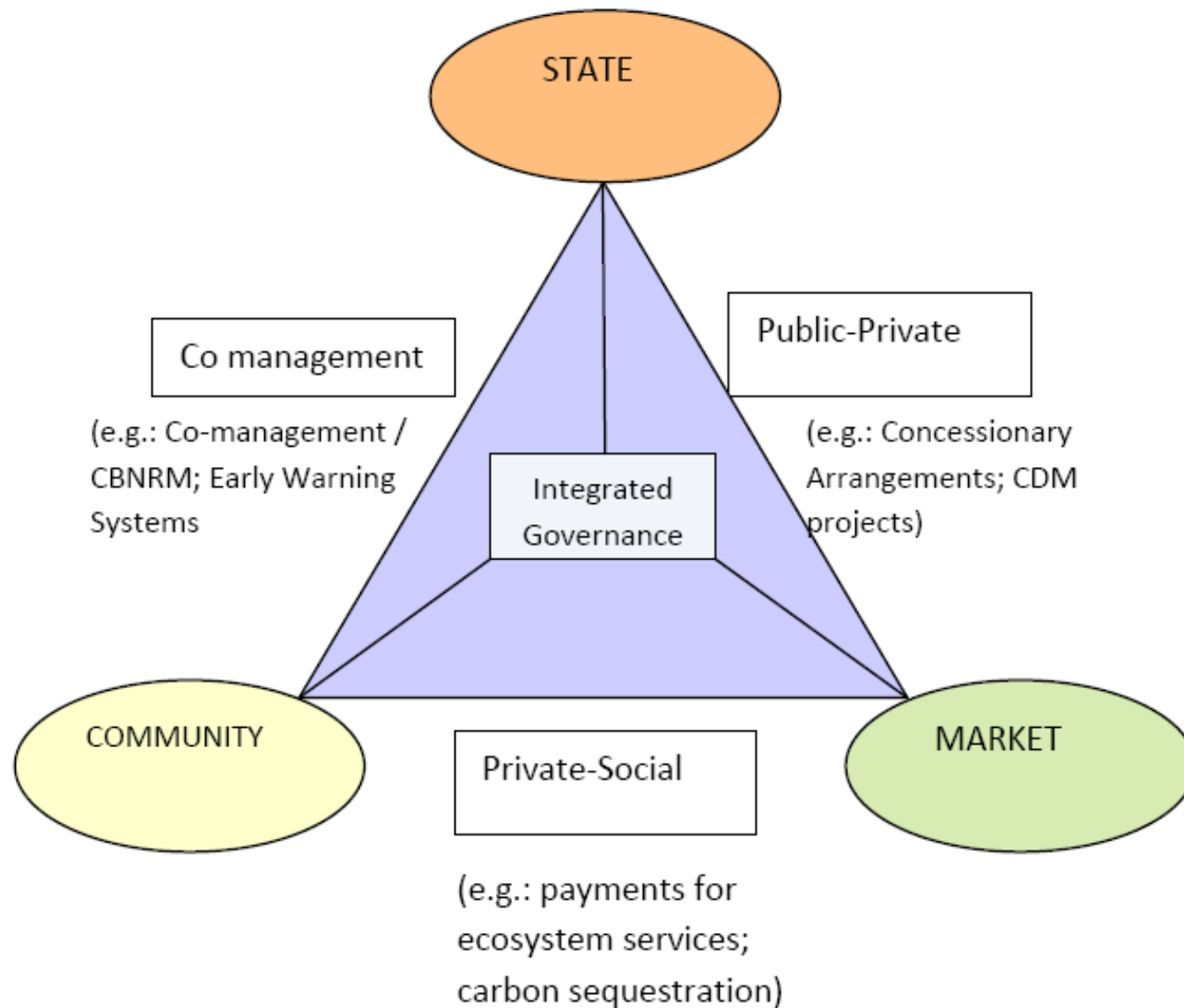


Source: Agrawal, McSweeney and Nicolas Perrin

Institutions' and Stakeholders' Partnership

Rationale for forging institutional partnerships in climate change concerns:

- Climate change issues beyond the capacity of single institution/sector to address
- Climate change impacts respects no geographic boundaries and socio-economic status
- Adaptation strategies require multi-sectoral/multi-stakeholder approach due to tradeoffs involved in adaptation actions across different sectors



- Schema of collaborative institutional arrangements for environmental action —
in the context of climate change (Agrawal and Lemons 2007).

Institutions' and Stakeholders' Partnership

National level partnerships

- Promoting public awareness and policy advocacy on the importance of watershed management in curtailing climate change
 - Mainstreaming climate change in watershed policies and programs
 - Institutional capacity building on climate change matters in the context of watershed management
-

Institutions' and Stakeholders' Partnership

Local level partnerships

- Mainstreaming climate change in local watershed policies, plans and activities
- Integrated assessment of climate change impacts, vulnerability and adaptation in watersheds
- LGU adaptation planning
- Implementation of adaptation plan
- Monitoring and evaluation

Keys for Success of Watershed Management Organizations

1. Group composition that promotes collaboration and participation among stakeholders

- ❑ *member composition should match the scale and nature of the issue they wish to address*
- ❑ *watershed groups should strive to attract and maintain a diverse membership, representative of the diverse interests operating within a watershed*
- ❑ *balance between diversity and group size is important to effective and efficient decision-making*

Keys for Success of Watershed Management Organizations

2. Group operations in terms of:

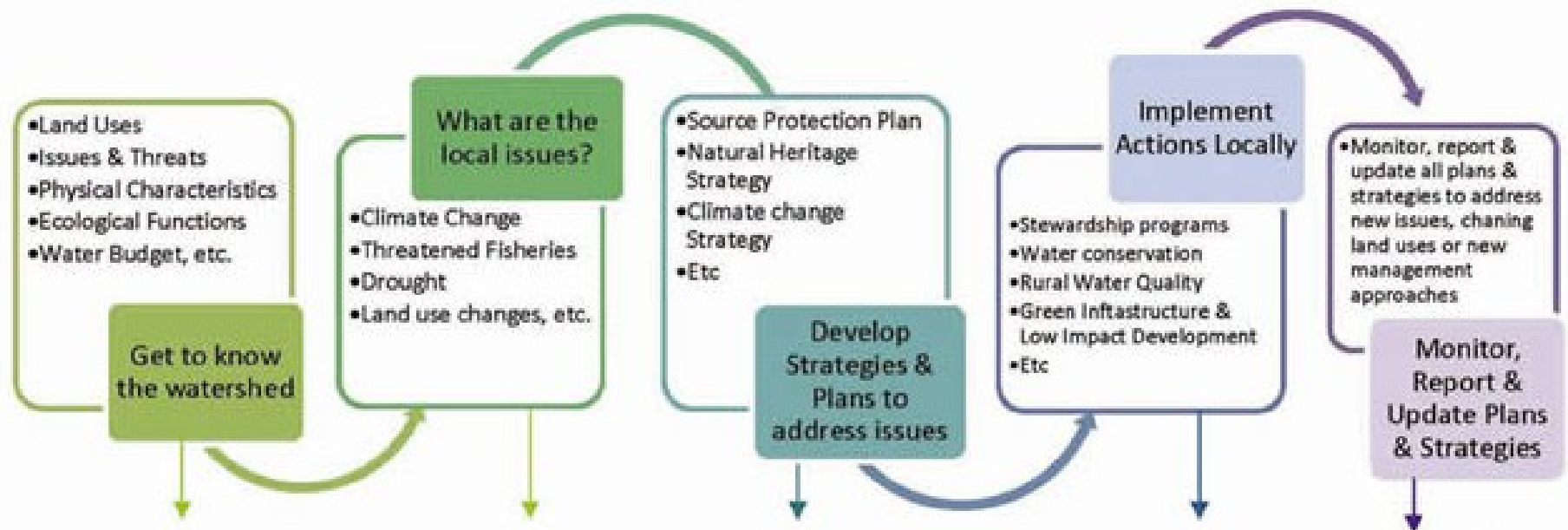
- ❑ *membership and retention*
- ❑ *creation of clearly defined action plan*
- ❑ *effective leadership*
- ❑ *technical competency*
- ❑ *adequate funding*
- ❑ *strong social capital*
- ❑ *appropriate scale at which to focus activities*

Keys for Success of Watershed Management Organizations

3. ***Political and institutional framework***

- ❑ *learn to work within existing political context and institutional landscape*
- ❑ *Appropriate legislation and policy mechanisms should be on place*
- ❑ *Establishment of partnerships with different institutions*
- ❑ *institutional framework ideally offers both incentives and regulations*

Integrated Watershed Management Process



Stakeholder Input

To be successful, IWM requires collaborations and involvement of a wide variety of community interests and water users including municipalities, businesses, residents, agencies and landowners. They decide on the priority issues that need to be addressed, help to set goals, decide on what actions to take and implement locally.

A pair of hands is shown from the bottom, gently cradling a small, realistic model of the Earth. The globe displays continents in shades of brown and green, and oceans in deep blue, with white clouds swirling around it. The background is solid black, making the globe and hands stand out. The text 'Thank you for listening!' is superimposed in the center of the globe in a large, bold, red font.

**Thank
you for
listening!**