

## SECTION 2.2

# INTEREST GROUPS INVOLVED WITH THE USE OF WATER RESOURCES/ENVIRONMENT

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### 2.2.1. INTRODUCTION

In the past, water resource planning was concerned mainly with the perceived adequacy of institutional arrangements and infrastructure developments. Recently, however, concern has come to focus on intangibles, such as the notion of quality of life, aesthetics and, to some extent, spiritual values. One of the implications of this change in perception is that non-physical factors like environmental amenities have become more important in water resources planning. For this reason, the environmental impact assessment (EIA) of the subject area is now an integral part of water resource planning. However, the concept of EIA has not been clearly delineated as yet, nor can it be easily and concretely defined. For the purposes of this paper the aim EIA is defined as the identification of the existing comprehensive conditions in the subject area, the prediction of the likely impacts of policies, plans and programs and the presentation of mitigating measures for any foreseen negative effects. More generally, EIA seeks to provide the decision-maker with better information on which to make his decision.

Although most of the decisions made in the planning process should be based on the results of a reliable environmental assessment, three factors may limit an assessment's reliability in relation to water resource developments:

1. The existence of complexity in the water resource environment and with water resource planning which incorporates the concept of environmentally sound management.
2. The existence of uncertainty among those elements used in decision- making.

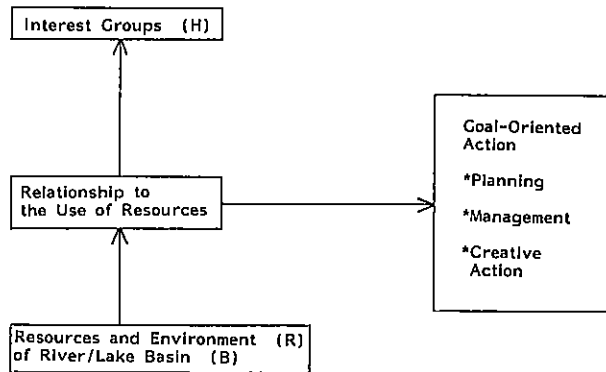
3. The existence of different interest groups involved with water resources planning and management and the role of local community participation in plan formation for water resources.

This paper attempts to examine the rationality of local community participation and interest group involvement with the use of water resources/environment (Nakagami 1983).

### **2.2.2. THE UTILIZATION SYSTEM OF WATER RESOURCES/ENVIRONMENT**

Understanding of the socio-economic context of river/lake basins has undergone profound changes throughout history. Transportation along rivers has declined and consequently this has reduced social and cultural interaction between the upstream and downstream communities.

The use of a river or lake basin as the territorial unit of planning has so far remained immature with limited application. In order to fully develop the philosophy of river/lake basin management as well as relevant planning methods, it is essential to establish a set of rules for managing river/lake basin resources/environment with a systematic inventory of their uses. A simplified systems diagram showing the utilization of river/lake basin resources/environment is presented in Fig. 2.2.1.



**Figure 2.2.1** Utilization System of Resources and the Environment As human history reveals, conflicts of interests among individuals or groups of people (H) emerge over the use of resources (R) -- water, land and forests -- in any river/lake basin (B). In order to ensure the rational and efficient use of river/lake basin resources, goal-oriented actions such as planning and management should be promoted in an innovative/creative manner.

To be more precise, planning for a river/lake basin involves the clarification of the planning goals, who undertakes the planning exercise, the major planning variables involved, where the planning is directed, how long the planning period is, and what method of planning is to be used. On the other hand, management involves decisions aimed at minimizing the gap between the planned actions and the current state of resource use. Finally, creative actions involve a task of discovering, in an innovative manner, a possible break away from the present situation where creation of new resources is increasingly called for as a result of resources depletion and changes in production methods and lifestyle.

In order to enhance the economic value of resources and the environment, it is necessary to define an optimal state of resources/environment-use as well as to develop a system whereby that state can be achieved. For the purpose of addressing these tasks, a clear understanding of the relationship between resources/environment and man is essential. In addition, a rational rule of decision making among interest groups has to be established in order to guide the resources/environment-use practices to an optimal state. What is called for is therefore not to seek an advantageous position over others with regard to resources/environment-use, but to search for a long-term collective management approach directed at conserving the river/lake basin.

Man-water relations change as the local lifestyle and the method of production changes. Also, the manner in which water is used varies according to the form in which water resources are made available (such as lakes, rivers and groundwater).

The manner in which people come into contact with water varies in accordance with the size of settlements. Moreover, the relationship between human society and the water environment has evolved over time. Changes in the water environment often give rise to direct and indirect conflicts of interest among individuals and/or groups. As a result of this process, interest groups are formed.

In recent years, a number of interest groups have formed centering around public projects. Their goals and objectives are many and varied. In order to reflect the views and opinions of these interest groups in the process of public decision making, a coherent goal acceptable to all and a principle of collective action have to be established. However, as the goals of interest groups change in response to the group dynamics that take place under the strained situation, it may not be possible to define a unified principle of action agreeable to all groups concerned. Thus it is extremely difficult for interest groups to come up with a set of unified yet distinct views and actions towards public policies including river/lake basin management.

Under certain circumstances in a particular river/lake basin, however, it may be possible to establish a common principle of action among interest groups. While it will certainly enlarge the scope of planned actions and policy tools to be applied, it necessarily involves the difficult task of making a decision acceptable to conflicting interests involved with plan formulation. An optimal state of resources/environment-use in a river/lake basin from the socioeconomic viewpoint may be realized through consensus forming among interest groups concerned.

This, however, requires the institutionalization of mechanisms of social consultation through which the views and aspirations of different interest groups can be synthesized and reflected into public decision making. In order to make such a mechanism effective, the following three points should be given due consideration:

1. An agreement must be made beforehand among interest groups on the role of decision making with regard to the use of resources/environment in a river/lake basin;
2. Every effort must be made to come up with a unified goal of resource/environment use among interest groups as well as coordination with other goals in order to reduce conflict;
3. Every effort must be made to realize information sharing among interest groups so as to enable them to make a collective decision on the rate of resource/environment use.

In order to resolve the problem of multiple interests in a rational manner, impartiality (fairness) must be ensured among interest groups concerned while making sure that realistic policies are formulated and concrete proposals of action articulated. In cases where each of the interest groups involved is capable of independently making decisions, the situation must be seen in a dynamic social context. Under such circumstances, a simple mechanical method of deriving an optimal solution is no longer viable. Technological progress coupled with development activities undertaken under the policy of regional development have certainly given rise to changes in the region-specific environmental conditions.

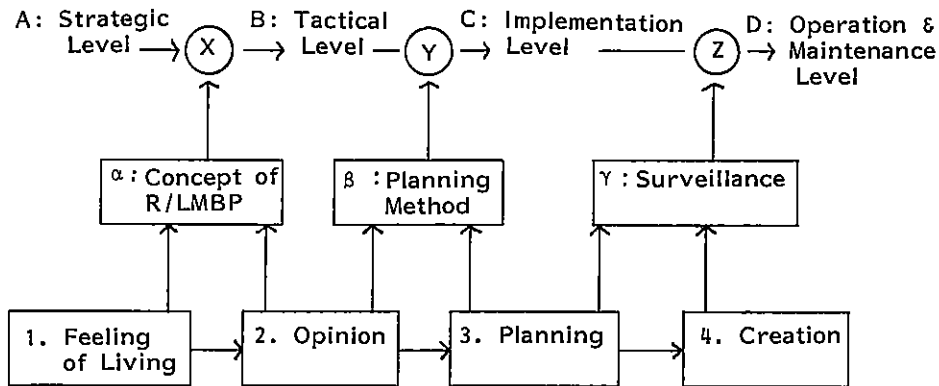
A proper understanding of these change processes analyzed in relation to the performance of interest groups within the socioeconomic structural context may serve as the first requisite for harmonizing the resource-use practices in a river/lake basin with policy efforts towards environmental conservation.

The second requisite is to develop a system capable of reflecting people's views and opinions in the process of river/lake basin management and planning, thereby ensuring that the method of consensus formation will be accepted as a common sense method. The prospect of realizing a harmonious balance between development and environment may basically depend on the extent to which our efforts are made in carefully observing the environmental changes as well as in devising integrated approaches to problem-solving (Nakagami 1989).

### **2.2.3. THE PROCESS OF POPULAR PARTICIPATION IN PLAN FORMATION**

The viability of river/lake basin management and planning (RLBMP) may be enhanced, provided a consensus is reached among the interest groups concerned. Fig. 2.2.2 shows a process of popular participation in RLBMP. As RLBMP acts through A: strategic level, B: tactical level, C: implementation level, and D: operation and maintenance level, the focus of popular participation also shifts from conceptual aspects, and eventually to monitoring and surveillance aspects (Nakagami 1989). There are stages in the planning process where people's views and opinions are crucial. Taking the planning process given in Fig. 2.2.2 as an example, decisions are to be made at stages x, y and z in the light of people's views and opinions. However, popular participation takes various forms. What form of popular participation is to be

adopted largely depends on the perception of decision makers.



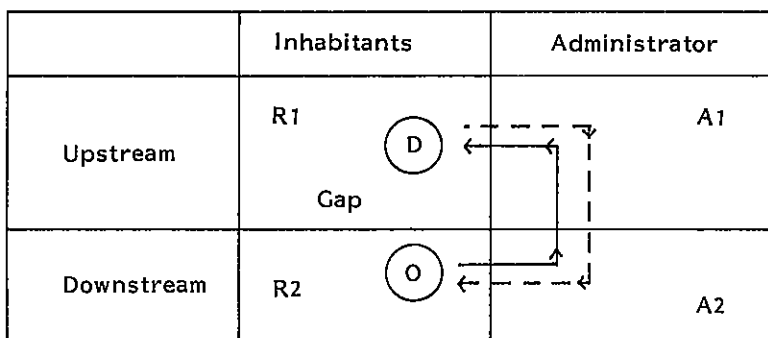
**Figure 2.2.2** Popular Participation in RLBMP

An attempt is made below to examine the role of the local population in the process of RLBMP. Those who are concerned with RLBMP may be divided into four groups as given in Fig. 3 in accordance with their functional attributes (local people and government agencies: both national and local) as well as their locational attributes (upstream and downstream). Within this framework, let us assume a situation where: 1) R2 has a plan to develop water resources (O) for the purpose of promoting economic and social development. In view of the adverse effects on the community life and productive activities of R1, 2) R1 submits a claim (D) to improve infrastructure and social services in the watershed community.

In order to materialize the claim submitted by R1, A1 may request A2 to cover the costs. If the costs have to be eventually shouldered by A2, the relationship between A1 and A2 communities may become tense with the result of weakening solidarity among them. Under these circumstances, it is difficult to harness, among the local population, a collective sense of sharing resources and the environment in the river/lake basin. At the same time, collective actions cannot be taken towards RLBMP. Hence the government sector has to take a leading role in RLBMP.

In order for the local population to play a leading role in RLBM, the following conditions should exist between R1 and R2:

1. The adverse effects of water resources development on the upstream community must be fully recognized by the people in the downstream community. This implies the need to generate relevant information be shared by all in the entire basin community;
2. Efforts must be made to harness, among all in the basin community, a common understanding about urgent policy issues such as water resources development and conservation. Without this common understanding, unified goals of RLBM cannot be formulated; and
3. Efforts must be made to facilitate dynamic interaction between the upstream and downstream communities in order to articulate issues and problems to be addressed through RLBM. This implies the need to establish a permanent organization for promoting such upstream community interaction (Nakagami 1989).



Claim from R2 to R1  
 Claim from R1 to R2  
 The Consciousness Gap between R1 and R2

**Figure 2.2.3** Consciousness Gap Process of RLBM

## **2.2.4 INTERACTION AMONG INTEREST GROUPS INVOLVED WITH THE USE OF WATER RESOURCES/ ENVIRONMENT OF LAKE BIWA**

The objective of the Lake Biwa development project has shifted from that of electric power development (1950s) to water resource development (1960 - early 70s), and finally to a multi-purpose one (water use, flood control, environmental conservation).

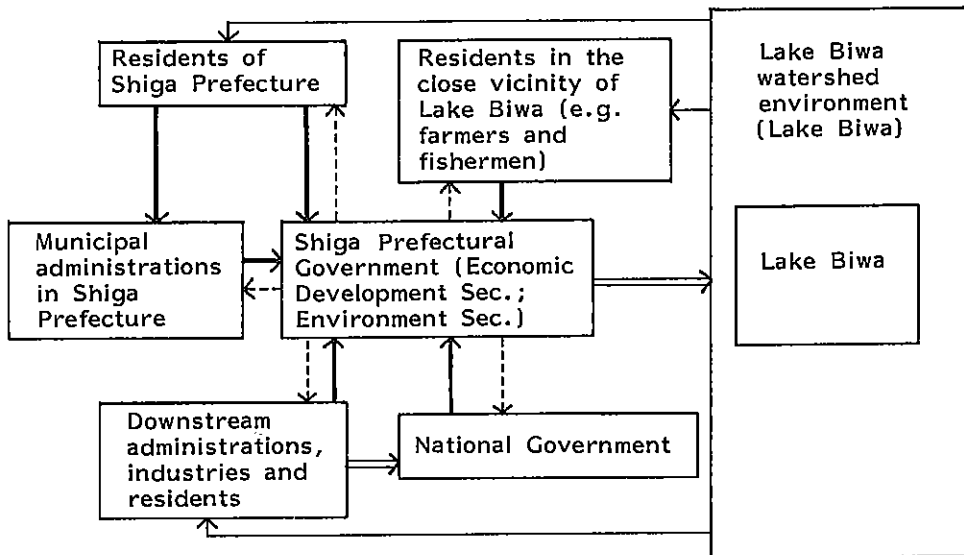
The latest project ("The Lake Biwa Comprehensive Development project") was established in 1972. Budgeted at 430 billion yen, it was to be implemented over a ten-year period.

The shift in the aim of development projects is due to the persistent efforts of the residents of Shiga Prefecture to become involved with the planning of projects affecting their community. Their desire to preserve their environment is based on their long history in the region. As the magnitude of development becomes greater, it is increasingly difficult for residents to ensure a stable water supply to downstream residents and industries as a number one priority. For this reason, the Lake Biwa Comprehensive Development project had to begin with an overall definition of its objectives, incorporating water quality and environmental conservation, as well as development measures.

The institutional framework for this project is unlike that of others of its kind. Decisions are made according to a unique institutional mechanism. It is the governor of the prefecture (and not the national authority) who has the ultimate power to make decisions that concern parties, such as the governors of neighboring prefectures.

However, this institutional peculiarity makes the decision-making process more complicated. The governor becomes directly involved in the complex and dynamic process of interaction between various interest groups. This interaction is schematized in Fig. 2.2.4.

The position of the Shiga Prefectural Government is a pivotal one in this interaction. The governor functions as the negotiator for different, often conflicting, interest groups; he elaborates plans and implements them for a wide variety of management purposes, from those of conservation to those of development (Nakagami 1983).



- ← ; Benefits originated from Lake Biwa and its watershed
- ⇐ ; Demands toward other interest groups
- ⇐⇐ ; Control and management scheme for Lake Biwa
- ←- - - ; Reactions to demands

**Figure 2.2.4** The Interaction of Interest Groups involved with the use of water resources/environment of Lake Biwa

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**PROFILE A:**  
**DISCONTINUATION OF**  
**THE LAKE SHINJI AND NAKAUMI PROJECT**  
**- JAPAN**

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The Japanese government has promoted a policy of high economic growth since the 1960s in the hope of developing the Japanese Archipelago. Many comprehensive development plans were prepared throughout the country. One such plan was a project for land reclamation and the creation of a fresh water supply at Lake Shinji/Nakaumi located near the border between Shimane Prefecture and Tottori Prefecture (see Fig.4.4.1).

The Ministry for Agriculture, Forestry and Fishery started this project in 1963 with National Government subsidies. A water gate was planned to prevent the backflow of seawater, thereby isolating Nakaumi from the Japan Sea. This would change both the brackish Nakaumi and Shinji Lakes into fresh water lakes. The project sought to reclaim approximately one-quarter of Nakaumi (2,542ha) to create new agricultural land and to supply fresh water from these two lakes to the reclaimed land and adjacent municipalities for irrigation.

Local citizens feared the possible environmental destruction caused by this project for the following reasons:

1. Adverse impact on the water quality and the ecosystem of the lakes would be unavoidable. Turning the brackish water into fresh water could have diminished the self-purification process. The absence of tides would have resulted in the stagnation of the lake water, and the accelerated sedimentation of organic substances and nutrients. In addition, the project would remove salt which presently inhibits the blue tide, so that the lakes would have become prone to outbreaks of algae and resultant water pollution, as found at Lake Kasumigaura in Ibaraki Prefecture.

2. Water pollution of the lakes was likely to degrade the quality of life for citizens living in the coastal area, and cause economic loss in the tourism industry in the area, including Matsue City, which is well known as an "Aqua-city".

3. The land reclamation and desalinization projects were not expected to adversely affect flood control as long as the Hii River, which flows into Shinji Lake, is diverted to the Kando River during flooding. It would, however, have been very dangerous to operate the gate before the river diversion work was completed.

4. In relation to the economic effects on the local communities, the disadvantages seemed greater than the advantages: the fishery at Shinji Lake with an annual revenue of 4.1 billion Yen would have been seriously damaged because the project could have destroyed the habitats of the major fish and shellfish species such as the Yamato corbicula (*Corbicula japonica*) and icefish. The project could have damaged the best lake fishery in the country.

5. Water pollution of the lakes could have serious impact on the tourism industry. The agricultural activities conducted on the reclaimed land could have caused a heavy debt burden among the farmers, because the calculated land prices were expected to be very high. Rice production in Japan has recently been subject to regulation because of oversupply and projects to create agricultural land run contrary to present trends.

These likely adverse consequences of the project suggested that both environmentally and economically this project was undesirable and unreasonable, asserted the citizens.

The local Fishermen's Union (1,300 members) adopted a resolution to postpone closure of the gate. In June 1982, citizens organized the Group for Conservation of Shinji Lake. In July, the Matsue Young Men's Chamber of Commerce and Industry put a one-page opinion advertisement in a newspaper and declared opposition to the project. In October, the Group for Re-examination of the Project was formed, which started a movement requesting the prefectural government to establish a "Eutrophication Control Ordinance". In February 1983, the group sent an appeal for the establishment of the ordinance to Shimane Prefecture with 24,406 signatures. Furthermore, in 1984 the majority of the citizens in the coastal area, 320,000 persons, signed a petition declaring their opposition to the project. In 1988, 43% of the electorate in the coastal area asked the prefecture to formulate a Landscape Conservation Ordinance. The Matsue Chamber of Commerce and Industry announced its resolution to oppose the project. These movements were a clear sign of opposition from the citizens and the local business community. Citizens who had attended the Shiga Conference '84 on Conservation and Management of World

Lakes from all over the country convened the Japan Water Environment Conservation Conference in 1984. Its first annual meeting was held in Matsue City and it adopted a resolution to support the local movements against national projects.

On the other hand, in August 1984 the Ministry of Agriculture, Forestry and Fishery issued a report which stated that "the water quality of the lakes can be maintained at the present level even after completion of the project", and asked Shimane and Tottori Prefectures to agree with trial operation of the gate. Around this time, there was extensive scientific debate about water quality and the environment between the citizens and the prefectures.

In response to this situation, the governors of Shimane and Tottori announced in 1988, "it is desirable to postpone operation of the water gate". The next day, they sent this opinion to the Ministry, which then declared the freezing of the project on July 5. This freezing meant discontinuation of the project in actuality.

Thus the desalinization project of Lakes Shinji and Nakaumi, which had been 25 years in the planning and which cost 72 billion Yen, was abandoned. The discontinuation of the development project due to strong opposition by local citizens after the national and prefectural governments had invested a huge amount of money was really epoch-making.

The leader of the citizen movement, Professor Takehiko Hobo, said, "Citizens studied independently and could offer scientific arguments against the administrative authority and the local assemblies and conducted their own scientific investigations to make concrete proposals for decision-making. Thus, the citizens were always leading, and local people in a variety of sectors showed very clearly and strongly their own will against the project so that the administrative authority could not ignore them any more".

The group which played the central role in these movements, The Liaison Center of Citizen Groups Against the Project, has started to re-examine the Water Quality Management Plan for the Shinji and Nakaumi Lakes and actions for promoting fisheries and establishing the Landscape Conservation Ordinance. In 1989, the center established the Brackish Water Research Center.