

# Political Economy Analysis to Identify Champions for Freshwater Policy Change and Conservation of Aquatic Biodiversity

## BACKGROUND

Political economy analysis (PEA) is an integrated approach capable of capturing the dynamic interactions among the use, control, and allocation of water, policy-making and political power. In the 12 watersheds of the Mahakali, Karnali, and Rapti (MKR) River Basins, the study examined the dynamic interactions among climatic and hydrological variability, human behavior shaped by socio-economic contexts, social arrangements, environmental and human-built systems, institutions, and politics to assess the changing political economy of water in those basins.

## STUDY OBJECTIVES

- Increase understanding around political economy issues and practices facing sustainable water management.
- Locate champions at watershed, sub-basin, basin, provincial and national levels for freshwater biodiversity conservation.
- Enhance capacity of champions to creatively and critically participate in policy processes and to lead reforms.
- Make recommendations to reduce threats to freshwater biodiversity and to enhance the resilience of human and ecological communities.

*Non-engineered road construction, urbanization, and land-use changes are the dominant non-climatic stressors in the MKR River Basins.*

## KEY FINDINGS

**Physical and social context:** The region is historically food-insecure with low economic status and a rudimentary market system. Climatic and non-climatic hazards often cause disasters in the region and responses are generally relief-and-rescue oriented. Households in this region typically import food from outside. Seasonal and temporary migration has been the adaptive strategy of inhabitants to combat food insecurity. The food insecurity can be attributed to poorly designed development and asymmetric relations between the Nepali state and the region.

**Freshwater biodiversity:** Fisher communities reported a decrease in local fish stocks and in diversity of fish species. Barrages and dams have dewatered and obstructed their migration, while construction of non-engineered rural roads and mining of river beds have altered riverine ecosystem leading to reduction of foraging, nurturing and breeding grounds of aquatic species. It has affected fish growth and increased diseases and parasite infestations. The water qualities in the rivers are lower than the acceptable level. Contamination is likely to increase unless social and economic safeguards are increased.

**Stresses and challenges:** In the MKR River Basins, temperatures are rising, rainfall is becoming more erratic, and snowfall is declining. Thunderstorms and hailstorms are becoming more frequent. These trends have accelerated soil erosion, landslides, and mass wasting as well as hazards, such as dry spells, forest fires, and the growth and spread of invasive species. Non-engineered road construction, urbanization, and changes in land-use are the dominant non-climatic stressors in the MKR River Basins. The use of explosives, poison, and electricity for fishing have reduced fish stocks. Small-meshed nylon nets are used to catch small fish that further reduce fish stocks. Pollution poses

additional threats to freshwater biodiversity. With the increased demand for roads, other infrastructure and buildings, the practice of riverbed mining has also increased.

**Knowledge, policy and politics:** Policies regarding the conservation and management of ecosystems and biodiversity are top-down with limited practicality. Furthermore, such policies are poorly implemented. Policies tend to be guided more by specific projects and/or international imperatives rather than by local demands.



*A crusher mining materials in a riverbank. (USAID Paani Program)*

## **ACTION / RECOMMENDATIONS**

**Monitoring and enforcing:** National, provincial, and local government should regularly monitor activities, such as harmful fishing practices, unsustainable riverbed mining, overuse of pesticides and chemical fertilizers, and waste disposal in aquatic bodies. The Environment Protection Act, water policies, and aquatic animal acts need to be revised with well-defined fines, tariffs, and taxes for non-adherence.

**Influence of infrastructure:** Local governments and forest users groups should prioritize watershed conservation to help regulate local hydrology. Vulnerable fish species should not be harvested. Installation of fish ladders or lifts for migrating aquatic species and for maintenance of environmental flow must be implemented. Detailed investigations of environmental flow are necessary to maintain the aquatic habitat. Road construction should be planned and implemented using appropriate precautionary measures.

**Upstream-downstream cooperation:** To prevent upstream-downstream conflict, inter-governmental and inter-agency cooperation should address issues related to water use, aquatic biodiversity, forest conservation, and benefit-sharing. Government bodies at all levels, international/non-governmental organizations, media partners, civil society organizations, and academics should help raise public awareness about aquatic ecosystem conservation. Some options for doing so include seminars, trainings, flyers, brochures, infographics, research papers, documentaries, radio programs, or articles in vernacular.

**Research:** Research on aquatic ecosystems is severely limited. Universities, research organizations, and government bodies should promote research on aquatic biodiversity by providing research grants. Conferences, workshops, and dialogues on aquatic diversity can generate knowledge on aquatic systems.

**IWRM:** Form local Integrated Water Resource Management (IWRM) committees to audit water resources development programs and help ensure that the continuity of ecosystems and services. Such committees must include local government representatives, civil society members, and individuals with proven expertise on freshwater biodiversity conservation. Develop a mechanism for promoting inter-agency coordination to maintain local water resources.

**Capacity-building:** The capacity-building of champions is necessary to promote their ability to solve physical, social, and economic challenges related to freshwater biodiversity conservation. Women and social excluded groups must be included in capacity building so that both strategic and practical needs can be met.

**Trust fund:** Support affected communities in acquiring funds and using them to plan and implement their own mitigation and development efforts. Trust funds could be also used in conjunction with other financial sources to practice monitoring and social auditing.

**Social dialogue and convening:** The conservation of freshwater biodiversity requires a new journey in which governments, the private sector, and communities must be continuously engaged. The convener of dialogue among these groups must possess adequate authority and mandate. The National Natural Resource and Fiscal Commission could play such a role. As a mediator, it can provide suggestions to the federal, provincial, and local governments about the conservation and management of natural resources and about the resolution of disputes.