

# Contributing Paper

## Response to Planning Survey

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**Prepared for Thematic Review V.1:**  
Planning approaches

*For further information see <http://www.dams.org/>*

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This is one of 126 contributing papers to the **World Commission on Dams**. It reflects solely the views of its authors. The views, conclusions, and recommendations are not intended to represent the views of the Commission. The views of the Commission are laid out in the Commission's final report "Dams and Development: A New Framework for Decision-Making".

# **Completed Survey from Dr. J.L. Karmacharya**

## **Part A: Key Principles for Good Planning in Today's Context**

### **Key Principles**

1. Systematic and not adhoc planning approach with due consideration to alternatives in developing water and energy resources.
2. Flexibility and not compromise in planning exercise.
3. Extensive consultative procedure in developing and finalizing the planning, thereby making planning universally acceptable.

### **Other Principles**

1. Planning should be done with due consideration to the capacity to mobilize financing required to implement it.
2. Planning should give due weightage to the sectorial priority.
3. Planning process should start from bottom upwards rather than imposed from up. The central authority should only fine tune the planning to make it in conformity with national goal.

### **Planning and Decision Making for Dams**

1. As impact area of dam construction is comparatively wide and diverse, a transparent process for defining the dam parameters should be adopted as a measure to build up confidence of the directly affected people.
2. The multipurpose nature of a dam construction demands that priority of use of water by various users be agreed upon upfront and the project designed accordingly.
3. The extent of employment, compensation and good life for local people should be well defined and communicated to the people no non achievable promises be made in the planning process to ensure local people's cooperation in dam development.

## **Part B: Issues Identification: - At Different Levels of Planning**

### **National Level Planning**

#### **Key Emerging Issues**

1. The water resources development project planning needs long-term perspective. However, in growing economy, because of the resources constraint, planning horizon should be such that uncertainty in execution of planning could be avoided.
2. A rolling-budget should be provided to effectively use the limited resources.
3. Decentralization at local, district and regional level should be effectively introduced in planning to harness the water resources for multiple uses.

### **Other Issues**

1. Private sector is going to be a major player in water resources development, particularly in hydropower development, private-public cooperation planning will be needed.
2. Strengthening of one window system at national as well as provincial level to raise the confidence of private sector.
3. Independent regulatory mechanism to ensure the equitable market behavior.

### **Dam Planning, Development or Operation**

1. National policy on dam safety needs to be developed and reinforced.
2. Dam selection to be based on the findings of master plan of river basins, which should take into account technical, economical, social, environmental and investment aspects of the dam.
3. As far as possible, development of dam should aim at integrated development of multiple sector.

### **Sector-level planning**

#### **Key Emerging Issues**

1. Both private and public sector should follow the master plan development and least cost plan. Otherwise the system may not be optimal.
2. Sectoral integrated plan should be implemented to encourage captive power development.
3. In view of the poor data base, so important for water resources planning, sector level planning should put emphasis on the data base improvement.

### **Other Issues**

1. Standard and network planning of data collection stations.
2. Guidelines for the extent of planning for projects of various magnitude and nature.
3. Order of priority for water resources users.

### **Dam Development, Planning and Operation**

1. National design standards for the dam design.
2. Standardisation of extent of technical information required for different level of study (prefeasibility, feasibility, etc.)
3. Extensive people's consultation process for planning, design and operation of dam.

### **Project Level Planning**

#### **Key Emerging Issues**

1. Study of various alternatives to use the water resources.
2. Baseline survey at least for Environment Mitigation and Monitoring Plan.
3. Planning based on optimization of the project in the system/

### **Other Issues**

1. Necessity of review panel in every stage of development.
2. Consultative process with stakeholders in various stages.
3. Ensure project budget to local people not bypassing them.

### **Dam Planning, Development and Operation**

1. In case of hydropower dam, design discharge of the plant to be compatible with system requirement. No over installation or under installation.
2. Economic calculation to be based on type of energy and nature of supply.
3. Quantum of harmful gases that 'green power' generating dam replaces due to its construction should be a part of cost-benefit analysis.

## **Part C: Issues Identification – Planning Interfaces and Influences**

### **External World and the Country**

#### **Key Energy Issues**

1. Need to create a competitive atmosphere by promulgating Policies and Acts to facilitate the entry of private sector.
2. Fiscal incentives and security packages to be developed.
3. Need of sovereign guarantee or any other way of guarantee to attract investors.
4. Efficiency based donor's assistance for Joint Venture project or public sector project.

#### **Other Issues**

1. Strict adherence to the competitive bidding for power development.
2. Donors' assistance in risk, insurance and political risks coverage.
3. Need for drastically shortening of appraisal process by Donors, either for private or public hydropower projects by standardizing the procedure.

#### **Dam, Development or Operation**

1. As in generation mix, hydropower is always given the role of covering peak demand, the dam development should answer this need.
2. Private, Public Joint cooperation in dam development to be encouraged.
3. Special agency should be established to specially help resolve and monitor the issues related to rehabilitation and resettlement. This could address major conditionality of donor community.

### **Government Level: Between the Potential and Administrative/Planning/System structure**

#### **Key Emerging Issues**

1. Real autonomy to the public utility to work in commercial environment

2. Project selection should be a pure techno-economic and socio-environmental affairs rather than vote catcher.
3. A transparent arrangement, such as a standard project agreement, Power Purchase Agreement, needed to be enforced for a fair deal with private sector.

#### **Other Issues**

1. Project to be selected where the infrastructure is developed.
2. Regional balance in project site selection may lead to costly project.
3. Regulatory body should be a quasi-judicial authority.

#### **Dams, Development or Operation**

1. Irrevocable government commitment to water right for dam project.
2. Involvement of local self government in the development and planning of the small scale dam project.
3. Small scale hydropower development needs to be financed through local, provincial and national budget.

#### **Community Level and Government System**

#### **Key Emerging Issues**

1. Community to be involved in the financing, development and operation and maintenance of community level project.
2. Sufficient legal provision in local self government to enable local community play a leading role in such projects.
3. Incorporation of community level project in national planning only after approval by community level government.

#### **Other Issues**

1. In a country with rural economy predominating, awareness programme related to the water resources development projects need to be a permanent features.
2. Government department to provide guidance and technical support only to develop water resource related projects.
3. Because of scale of economy, even the operation and maintenance of the structures should be integrated.

#### **Dams, Development and Operation**

1. Extensive training programme to community people to operate and maintain the dam and power plants.
2. Maximum utilization of local skill in the development of dams.
3. Standardize design approach for community level small projects so as to use indigenous manpower and materials.

## **Pard D: Identification of Good Practice**

### **Planning Approaches**

1. System approach for the identification of hydropower/dam projects with due consideration to the technical economical, social and environment aspects and selection through elimination procedure to identify best project to be developed.<sup>1</sup>
2. Basin wide management plan should precede the design of a hydro project, which should include catchment management, local infrastructure development, education and health requirement and tourism potentiality study.<sup>2</sup>
3. People's participatory approach in every level of developing a project with systematic inclusion of feedback in the next stage of design and implementation.
4. Development of solar or wind power in cooperation with hydropower development for cost-effective electricity.

### **Tools, Method and Practices**

1. Multi-criteria and multi-stage analysis with due consideration to the alternatives to select a project for development.
2. Bottom-up approach in developing small scale hydropower for local needs.
3. Low utilization factor of hydropower in industrially less developed areas requires an integrated approach for dam development – integrated with agricultural or small scale industrial development.

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<sup>1</sup> Medium Hydropower Study Project, NEA 1997

<sup>2</sup> Arun Basinwide Management Plan, KMTNC, Kathmandu, 1991