

WATER RESOURCES LEGISLATION AND ADMINISTRATION IN NEPAL

DRAFT REPORT

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1. INTRODUCTION

Water is a gift of nature to humankind. The coming into existence, growth and sustenance of human kind, flora and fauna are dependent upon water. Even for the bare existence of life, water is the second important elementary substance other than air. As such efficient and just management and administration of water resources is very important in the context of national or international waters.

Nepal is rich in water resources in terms of average annual flow, but about eighty percent of it flows during the four to five monsoon months of the year. Water is abundant natural element but is not uniformly distributed in Nepal. Some areas have a constant and plentiful supply while others experience a dearth. There are also seasonal variations in availability of water that is posing serious problems in Nepal. The scarcity of adequate water and electricity supply in the Capital and most of the agricultural lands left un-irrigated throughout the Kingdom is the apparent example.

On the other hand all the Regions of the Country are not equally blessed with this resources either. The four large rivers, the *Kosi*, the *Gandaki*, the *Karnali* and the *Mahakali* have between them eighty nine percent of the total annual flow. Other medium rivers have nine percent of the flow and the remaining scattered pocket areas in the *Terai* have two percent of the total flow (Dixit, 1997).

The conflicting claims upon this limited resource from various uses such as domestic need including sanitation, irrigation, livestock and fisheries, hydropower generation, industries, navigation, recreation and preservation of ecology, therefore, need to be balanced with the supplies limited to certain months of the year and regions of the country. Utilization of water by different communities, and sharing the resource between administrative divisions or between two or more villages within a single administrative unit of a district pose legal and sometimes, political problems. In view of the above complexities and issues, utilization of this resource calls for an integrated and a holistic planning based on a clearly conceived long-term vision of the development of this resource as distinct from piecemeal or sectoral approach. Thought, planning and effort are therefore necessary to obtain, conserve and rationally utilize water resources. The renewal of water resources also is an important factor. This effort is and has to be carried out by human collectivities, in the present age the responsibility becomes one of the governments and states. Here comes the concern of Water Legislations and Administrations through which the state plays a pivotal role to address all these issues.

There are approximately six thousand rivers and streams in Nepal of which 33 have drainage area exceeding 100 sq. km. The rivers of Nepal can be classified into three categories on the basis of their source and discharge- snow-fed, discharge fed mainly by precipitation and springs, and seasonal with little flow during the dry season. These rivers generate about 225 billion cubic meters of water annually. The *Kosi*, the *Gandaki*, the *Karnali* and the *Mahakali* river systems, from east to west of the Country, originate in the Himalayas and carry snow-fed flows with significant flows even in the dry season *Kankai*, *Kamala*, *Bagmati*, *West Rapti* and *Babai* rivers originate in the *Mahabharat* range of mountains and are fed by precipitation, springs and groundwater regeneration. These rivers are also perennial in character and have wide seasonal fluctuations in discharge. The third category of rivers consists of a large number of small rivers in the *Terai*, which originate from the *Siwalik* range of hills. These rivers carry little flow during dry season and are characterized by flash floods in the monsoon.

Water engineers and planners consider a country to have reached a point of water scarcity when it has fewer than 1,000 cubic meters of renewable fresh water available annually for each person in its population. A higher and less severe benchmark is water stress, when a country has between 1000 and 1,667 cubic meters of annual water availability per person (Engelman and LeRoy, 1993). If calculated, the available flow during the dry months of a year with the present population, the per capita availability in Nepal will fall below 1,600 cubic meters, a situation of water stress.

All rivers that originate in or flow through Nepal eventually drain into the Ganges River System. The rivers that flow from Nepal contribute 45 percent of average annual flow of the Ganges, and the contribution of dry season flow is as much as 71 percent. The spatial distribution of water volume generated in various months is uneven. The annual precipitation is about 1800 mm and 80 percent of which occurs during the monsoon from June to September. The largest volume is generated during the month of August when the contribution amounts to about 60 billion m³ while the months of February and March have smallest contribution amounting to about 3.6 billion m³.

Due to the uneven spatial distribution of water a wide range of variation of river flows is to be found across the country. Most of the small rivers are almost dry during the winter seasons while in the monsoon season the flows increase by more than hundred times the main annual flow, which results in huge damages due to floods, bank erosion and landslides.

Irrigation, drinking water and hydropower are the major uses of water resources within Nepal. Whole the first two sectors consume water, hydropower is the non-consumptive user. About 15 billion m³ of surface water and 2.5 billion m³ groundwater is used for irrigation annually (Water and Energy Commission Secretariat, Water Resources Strategy, January 2002). It shows that only a small fraction (7%) of the annual flow is used for irrigation.

About 66 percent of the population has access to piped water. In the urban areas most households have plumbed facilities while in the rural areas; piped water is available through yard taps or stand posts. Domestic and non-domestic water (i.e., for industrial use) demand is minimal, i.e., less than 1 percent annual volume generated by the rivers in the country.

Although the exploitable hydropower potential of Nepal is 43,000 MW, to date less than 2 percent of this potential has been utilized. The total installed capacity of the Integrated Nepal Power System (INPS) and generation from independent small hydropower is 187 MW of which 430 is generated from water resources (Nepal Electricity Authority, A Year in Review, August 2003). Of the hydropower plants only 92 MW (*Kulekhani*, I and II) is from seasonal storage plants and the rest is from run-of-river schemes.

A number of central level institutions are involved in the formulation of policy, plans and programs for development of water resources. Central level institutions directly related to planning, policy development and guidance include National Water Resources Development Council (NWRDC), National Planning Commission (NPC), National Development Council (NDC), Environmental Protection Council (EPC), and Water and Energy Commission (WECD). In addition to the above, various ministries including Ministry of Water Resources (MOWR), Ministry of Physical Planning and Works (MOPPW), Ministry of Population and Environment (recently abrogated- MOPE), Ministry of Science and Technology (MOST), Ministry of Local Development (MOLD) and Ministry of Forest and Soil Conservation (MOFSC) are responsible for policy formulation, development and implementation in the sector.

The Ministries and departments involved in the planning and development of water resources generally operate in isolation often resulting in lack of coordination. Ad hoc and independent development initiatives of the Ministries and Departments fail to appreciate the potential of water as a resource. Sub-sectoral agencies for power, irrigation and water supply prepare policies and regulations based only on their limited sub-sectoral needs. Uncoordinated development of water resources coupled with the pressure of population have resulted in adverse impacts on the country's ecological systems. As river basins become more and more water stressed, and with an absence of a holistic approach to water resources planning the potential for conflicts in uses of the resource will increase.

There are certain Customary as well as statutory laws dealing with the powers, responsibilities and duties of such institutions and defining rights and ownership of the people on waters on the other hands. Among them Water Resources Act, 1992 is an umbrella legislation in this sector. *Muluki Ain* and other customary laws are also in vogue in Nepal, which provide traditional modalities of water uses and utilization. Hence this book tries to review the existing water resources legislations and administrative set ups enforced in Nepal in the light of above stated issues.

2. LEGISLATIONS IN FORCE

The extreme water problems confronting a large portion of Nepal's population are too familiar. Hundreds of millions of urban residents are not served by water systems and twice as many as are without sanitation. Inadequate access to water and sanitation contribute to the spread of a variety of diseases. These burdens rest disproportionately on the poor and on poorer areas. With declining per capita water availability in Nepal additional concerns on water inefficiencies in water allocation and use, increasing problems with water pollution and environmental degradation.

Addressing the myriad of water problems is no easy task given the complex physical and institutional setting in which these problems occur. The heaviest demand for drinking in Kathmandu and other rural areas, irrigation including use and recreational use other come during the driest months of the year.

The complexity of the physical setting is compounded by complexity of the institutional setting. Nepal uses multiple types of property rights regimes to govern water depending on its types, location and its use under her customary laws as well as recent legislations. In Nepal any given setting many different individuals, organizations, and governments will be exercising property rights in relation to a given water resources under local and national laws. Under law, for instance, in most irrigation systems, farmers, user's group, the operator of the system and perhaps local and national governments are exercising property rights in relation to the system and its water. The unavoidable complexity of the physical and institutional setting of water means that there will be no easy solutions to the many water problems confronting people.

Numerous strategies, plans, policies and laws have been tried in efforts to provide adequate water and sanitation services to all people. Heavy investment in large-scale infrastructure has financial and construction mismanagement, corruption and failure to deliver the full range of benefit expected like Melamchi. Investment in large-scale projects is threatened by the unresolved conflict in the country. Once built, maintenance efforts have been lax and effective operation and management has not been realized. Larger concerns over the environmental consequences of such projects are looming larger public debates.

Privatization is another recent concern which encourages market based approaches for building and operating water systems under recent water related legislations in Nepal. Payments for water use also raises a key question, of how to allocate water among competing uses. Allocation based only on willingness-to-pay is controversial because it can lead to the exclusion of those who have less ability to pay. Given the role of water in meeting the most basic human basic needs, such an approach would in effect be a denial of all human rights, regardless of there is any formal recognition of right to water. It is also clearly unethical and therefore, has been an easy target for controversy in developing and developed countries alike.

There are many legislations, policies, strategies and actions plans to address all of these water system related issues in Nepal.

Water resources law in Nepal consists of customary law and statutory law. Customary rights are acquired through years of usage as incident to ownership of land abutting the stream or river. The statutory law comprises of numerous Acts passed by the legislature of the country including the National Code, 1963 (*Muluki Ain* of 2020 BS). The National Code is a revised Code first promulgated in 1853 (1910 BS). In this chapter a list of list and main objectives of the legislations relating to the development and conservation of water resources has been provided. This Chapter has been divided into two groups- statutes and subsidiary legislation.

Statutes

National Code (Muluki Ain), 1963 2020

This Code is the oldest written legislation of the country of general nature. It has procedural as well as substantive aspects. Chapter of Cultivation of Land of this Code is particular with regard to the management of water resources. This Chapter gives the prior right to utilize the water resources for the purpose of irrigation to those who have made the irrigation channel in their own efforts and expenditure. In addition to this, the priority to utilize the water resources for irrigation has ensured to those who are the upper riparian. Despite this provision this Chapter states that the land being irrigated from the past time by the same water shall not be kept fallow by providing less water to it. It allows constructing a new irrigation channel only when the amount of the water in the channel immediately below is not reduced in its usual amount. This chapter further provides that such channel can be constructed in any kind of fallow or public land for the purpose of the cultivation of fallow land. If the channel is required to be constructed over the cultivated land of any other person such person has to be compensated with other equivalent land.

Water Resources Act, 1992 (2049)

The main objective of this Act is to establish legal provisions for regulating rational utilization, conservation, management and development of surface as well as ground water resources of the Kingdom. Further objective of this Act is determining the beneficial utilization of water resources, controlling the environmental as well as other harms of such utilization and maintaining the water resources of the kingdom pollution-free.

Electricity Act, 1992 (2049)

This Act has a direct relation with the utilization of water resources. The objective of this Act is developing electricity power by regulating the survey, production, transmission and distribution of the electricity in the Kingdom. It has further objective to maintain the standard of electricity service and make such service secured.

Aquatic Lives Protection Act, 1960 (2049)

This Act has been made for maintaining peace, providing convenience and protecting economic interest of the general public by conserving aquatic life of the country. This Act has defined water as pond, lake, river, channel, wetland, reservoir, crag and land used for fishery and the resources of such water. Aquatic

Lives mean lives living in any kind of water.

Local-self Governance Act, 1999 (2055):

This Act has been made for the purpose of providing an opportunity to all sovereign people to participate in the government process by method of decentralization. It tries to institutionalize the development process by promoting the participation of socially and economically backward classes including all local people in the process of bringing balance and equal distribution of the mobilization of resources and fruits of development. This Act has intended to grant the power of formulation necessary plans and execution that of in the local level. Having such broad objectives local level governments have been granted enough power in controlling and managing water resources of the local area.

Forest Act, 1992 (2049)

Since forest has an important role in managing water resources, Forest Act has many provisions effecting the integrated water resources management of the country. This Act has basic objective of developing and conserving the forests of the country. At the same time it has other object to protect environment. Environment, forest and water are interconnected.

Soil and Watershed Conservation Act, 1982 (2039)

This Act has been made for the purpose of maintaining convenience and economic interest of the general public by conserving soil and watershed from natural disasters like flood, landslide, soil erosion etc. This Act grants the power to the government to declare certain area as watershed protected area and utilize land use planning within such protected areas for effectively managing the watershed of that area. This Acts grants further power to constitute National Resources Conservation Commission in the central level and District Soil and Watershed Conservation Committees in the district level for providing technical consultancy to the respective governments in this regard.

Nepal Water Supply Corporation Act, 1990 (2046)

Nepal Electricity Authority Act, 1984 (2041)

This Act has established Nepal Electricity Authority for effective supply of electricity making the production, transmission and distribution of electricity reliable and easily available to all the people in the Country.

This is an autonomous and self-governed sole administrative authority regulating the activities regarding electricity. The Act has entrusted this Authority to provide necessary advice and consultancy to the Government while formulating electricity policy.

Nepal Water Tax Act, 1966 (2023)

The main objective of this Act is to manage water tax levied under prevalent laws of Nepal. Under this Act the water user who used the water through a tap distributed by His Majesty's Government are obligated to pay water tax as fixed by prevalent laws of Nepal. If such tax is not paid within the time as fixed by the law such person is liable to pay additional charges. This Act has exempted certain form of water use from water tax. The water line is disconnected if one does not pay the tax as fixed by the law.

Development Board Act, 1957 (2013)

This Act has been made for the purpose of bringing an effective legal provision for executing development projects, plans and development activities in a reasonable and efficient manner. Under this Act the Government is empowered to formulate an autonomous Committee for executing any particular development plan or development activities if deems necessary by notification. For executing any particular water resources development plan or activities, the Government may constitute such Committee under the authority of this Act.

Mines and Mineral Act, 1985 (2042)

Since water is an integral part of environment, prohibition of pollution of environment by any mines and mineral activity of this Act naturally amounts not to pollute the water resources also by such activities. Though the prime aim of this Act is to develop the country rapidly by developing mines and mineral resources, such aim is not allowed to be achieved in the cost of water pollution.

National Park and Wildlife Conservation Act, 1972 (2029):

Though this Act focuses on the declaration, management and conservation of National Park and Wildlife, the management and utilization of water resources of such area is in the hands of the Government. The utilization of water resources under this Act can be utilization for the purpose of transportation on water and other recreational utilizations.

King Mahendra Nature Conservation Trust Act, 1982 (2039)

The main object of this Act is conserving and managing nature and natural resources of the country. An autonomous trust under the patron- ship of His Majesty the King has been established under this Act. The main responsibilities of this trust is to conserve, promote and manage wildlife and natural resources; to maintain necessary provisions for the development of National Park and Reserves; to conduct necessary scientific study and research of wildlife and other natural resources. As water is a natural resource, it is under the domain of this Act to such extent.

Land Acquisition Act, 1977 (2034)

As under this Act the Government is allowed to acquire private land paying reasonable compensation to the affected party for the public purposes, water resources laying and originating within such acquired area is spontaneously acquired under this process. Despite this there is no special legal provision how such water is allocated and managed. According to the National Code, the customary water user has a primary right to use such water.

Natural Calamity (Relief) Act, 1982 (2039)

The main objective of this Act is to provide immediate relief to the victim of natural calamity. This Act aims to protect the life and property of general public and public property affected by natural calamity. Though this has not direct provision effecting water resources management, different Committees constituted under this Act, has responsibility to provide safe drinking water to the victim of the natural disaster.

Town Planning Act, 1989 (2045)

This Act has established a Town Planning Committee for effective development of the towns. Since rapid growth and urbanization has created many environmental as well as other severe problems, this Committee is entrusted conduct physical development in sustainable manner. Concerning water resources management, this Act has empowered this committee to control and regulate publicly used water and electricity. It has further power to control activities creating adverse impact on the environment of the town. While planning the town, maintaining effective drinking water supply and drainage system is also the duty of this Committee.

The Constitution of the Kingdom of Nepal, 1990 (2047)

Right to life of each citizen of the Kingdom of Nepal is guaranteed by Article 12(1) of the Constitution of The Kingdom of Nepal. Right to life includes to access to clean and healthy water. Thus the state has greater responsibility to ensure the essence of this right.

Article 126(2) of the Constitution provides that ratification of, accession to, acceptance of or approval of treaties or agreements on subject of natural resources, and the distribution of their uses be done by a majority of two-thirds of the members present at a joint sitting of both Houses of Parliament.

Provided that out of the treaties and agreements as referred, if any treaty or agreement is of an ordinary nature, which does not affect the nation extensively, seriously or in the long term, the ratification of, accession to, acceptance of or approval of such treaty or agreement may be done at a meeting of the House of Representatives by a simple majority of the members present.

Nepal Treaty Act, 1990 (2047)

Section 4(1) of the Nepal Treaty Act establishes necessary procedures for ratification of or accession to the Treaties or Agreements as provided other than in Article 126(2) of the Constitution. Government has to place the resolution in this connection before the Parliament

for motion. Such resolution shall be passed by the majority of the members of the House of the Parliament present.

Recently the Government has added Section 4a in this Act by the Ordinance for the purpose of ratifying of or accession to the WTO Agreement. It has provided that in this present situation of the absence of the Houses of Parliament, the ratification accession to such agreements shall be done by the Crown.

Section 5 of the Nepal Treaty Act states that in case of the condition of the ratification of, accession to, acceptance of or approval of Treaties or Agreements as specified in Article 126(2) of the Constitution, the government shall place the resolution of such subject in the Parliament. Government shall serve the notice to the related party or the authority as specified in the Treaty or Agreement of the ratification of, accession to, acceptance of or approval of such Treaties or Agreements after the Parliament has done the same.

Industrial Enterprises Act, 1992 (2049)

This Act has a scheme to provide license to industries producing energy by water resources as well as to other industries. Section 9 of this Act provides that prior approval has to be acquired to establish, extend or diversify any industries that create considerable adverse impact on safety, public health and environment.

Foreign Investment and Technology Transfer Act, 1992 (2049)

This Act has been made for the purpose of promoting foreign investment and technology transfer for making the economy viable, dynamic and competitive through the maximum mobilization of the limited capital, human and other natural resources, in the process of industrialization of the country. Establishment of industry based on water resources and transfer of foreign investment and technology in such industry is the subject of control under this Act.

Permission of the Department of Industry has to be obtained for foreign investment and technology transfer.

Certain facilities and Concessions have been provided to the foreigner under Section 5 of the Act. The following facilities and concessions have been provided:

- A foreign investor shall be levied income tax at the rate of fifteen percent only, on the income earned from foreign technical as well as management service fees and royalty.
- A foreign investor making investment in foreign currency shall be entitled to repatriate the following amount outside the Kingdom of Nepal:
 - ? the amount received by the sale of the share of foreign investment as a whole or any part thereof;
 - ? the amount received as profit or divided in lieu of the foreign investment;
 - ? the amount received as the payment of the principal of, and interest on, any foreign loan;

- A foreign investor shall be entitled to repatriate outside the Kingdom of Nepal the amount received under the transfer of technology in such currency as set forth in the concerned agreement.

Provisions relating to Visa:

- A foreign national visiting to Kingdom of Nepal in connection with undertaking any study or carrying out any research with the objective of making investment in the Kingdom of Nepal shall be provided a non-tourist visa for up to six months.
- A foreign investor or dependent family or authorized representative of such a foreign investor, and dependent family of such authorized representative shall, for the purpose of stay in the Kingdom of Nepal, be provided a business visa until the foreign investment is retained.

Provided that a foreign investor who at a time, makes investment in an amount no less than one hundred thousand US \$ or convertible foreign currency equivalent thereto, and his dependent family shall be granted a residential visa until such investment is retained.

Privatization Act, 1993 (2050)

This Act has been promulgated in response to the rapid privatization, liberalization and globalization of the world process. Most of the State owned public sector enterprises have been transferred to the private sector in this period.

Before this Act came into existence, the power of development, management, production, transmission, and distribution of hydropower was only in the hand of public sector enterprise called Nepal Electricity Authority. This Act aims to increase the productivity of enterprises owned and managed by the public sector by capacity building; to reduce the economic burden occurred to His Majesty's Government, and to bring comprehensive economic development in the country in active participation of private sector. After the formulation of Electricity Policy and Electricity Act, electricity production, transmission and distribution power has been handed over also to the private sector to bring fair competition in this sector.

Companies Act, 1996 (2053)

This Act allows individuals to establish an association in the form of public or private company for the purpose of organized business. Thus, any kind of water resources related business can be conducted by establishing any kind of company under this Act. All kind of modes of operation of such companies have been stipulated in this Act.

Consumer Protection Act, 1997 (2054)

Universally recognized consumer rights have been guaranteed to the Nepalese consumers in this Act. Supply of quality and safe water and electricity is ensured

under this Act. Any defaulter committing actions contrary to this Act is punished with imprisonment and fine under this Act.

Arbitration Act, 1998 (2055)

Commercial disputes may be settled by Arbitration process under the Arbitration Act. Any agreement establishing water supply or use or hydro-electricity may stipulate Arbitration clause and disputes arising out of such agreement may be settled by the Arbitrator as provided in the agreement speedily, cheaply and effectively.

Pesticides Act, 1991(2048)

This Act aims to regulate the export, import, production, sale, distribution and use of pesticides used to kill and destroy the fetal insects and germs affecting different seeds, plants, trees, animals, birds etc. No one is allowed to export, import, produce, and use any kinds of pesticides which are not registered in the registration authority as established by His Majesty's Government under this Act. Since uses of pesticides have direct impact on water uses systems, the provisions of this Act are significant in this regard.

Solid Waste (Management and Resource Mobilization) Act, 1988 (2044)

This Act has main objective of managing solid waste and mobilizing the resources of this connection and maintaining the health and safety of the general public by controlling the pollution generated from such wastes which create adverse impact on the health and safety of general public. As solid waste has direct impact on water supply system, discharge of solid waste in either public or private places have been prohibited under this Act.

Pashupati Area Development Trust Act, 1988 (2044)

Pashupati Area Development Trust Council has been established under this Act to conduct overall Pashupati area development activities. This Council is entrusted to maintain clean environment by maintaining planned construction, maintenance, conservation and sanitation in that area. This Council has duty to manage other means of basic public utility such as drinking water, drainage, canal, electricity, telephone, road etc and maintain clean environment prohibiting the discharges of wastages in the area. This Council has further duty of protecting, promoting and maintaining drinking water, transportation in water, water stream etc and maintain pollution-free environment. This Act has a direct impact in relation with water resource management in the heart of the city.

Subsidiary Legislations

Irrigation Rules, 2000 (2055)

These Rules have been made under the authority of Section 24 of the WRA. Irrigation has been defined as carrying the water from the structure up to the land for agricultural purpose. Water Users' Group is recognized under this Regulation. Such Group shall be registered in irrigation office of respective Districts for the purpose of utilizing the irrigation system developed by the Government. Such Group has responsibility to utilize, distribute, maintain, operate and manage the irrigation system handed over to it. Any projects or any canal, subsidiary canal, ditch etc of the part of any project developed by the Government may be handed over to the Users' Group registered for the same purpose under these Rules. Larger projects, which are not under the Users' Group's capacity to maintain, can be managed on Government-Users' Group partnership. Government may enter into agreement with the Users' Group to manage such projects in such manner.

These Rules have special provision for effectively controlling larger rivers and irrigation systems. Irrigation and River Control Committee has been constituted under these Rules. Application has to be given to obtain the services from the irrigation system developed by the government and Users' Group. The applicant can be allowed to receive such services acquiring prescribed charges and such services can be suspended in case of failing to pay such charges on the part of the consumer.

Water Resources Rules, 1993 (2050)

These Rules have established Users' Group for the purpose of utilizing the water resources. Any Group willing to utilize water resources has to formulate a Users' Group consisting of at least 7 members. This Group has to apply in District Water Resources Committee for registration. If satisfied, this Committee shall register such Group and issue the Certificate of Registration.

District Water Resources Committee has been constituted under these Rules for the purpose of effective utilization of the water resources of the District. Anyone willing to conduct water resources utilization survey has to acquire permission from this Committee. Water Resources Inquiry Committee has been formulated for the purpose of settling the disputes arising during the process of utilization of water resources. Any license-holder selling the services of the use of water resources has to pay prescribed charges to the Government under these Rules.

Drinking Water Rules, 1998 (2055)

Any individuals to be benefited by development and operation of any project for common benefits may constitute a Users' Group under these Rules. There should be 9 members at least 2 females in the Group. Application for the purpose of registering such Group should be given to the District Water Resources Committee constituted under Water Resources Rules, 1993.

Rights over the water resources up to the amount as specified in the permission given to the Users' Group shall vest to such Group under these Rules. Further, permission has to be acquired for conducting any kind of survey of water resources according to these Rules. Any individuals willing to utilize the water resources have to obtain license from the Committee. Such individuals have the right over the water resources up to the amount as permitted in the license. The license-holder shall pay the Government Rs. 50000.00 each year for the utilization of water resources.

Resource Utilization Dispute Settlement Committee has been formulated under these Rules to settle the disputes arising out in the process of the utilization of water resources projects developed and operated by the Users' Group. Affected party shall have a right to sue in this Committee. The water quality standard fixed by the Government has to be maintained in the water supplied to the consumers. Water supplier shall not create adverse environmental impacts and pollute any resources while constructing any structures or carrying out any other activities.

Consumers willing to obtain water supply service have to apply to the supplier. In certain conditions, such as failing to pay service charges, violating the terms of water supply agreement and in case of destruction of the structure or the water to be supplied becomes polluted; water supply services can be suspended.

Electricity Rules, 1993, (2050)

Any individuals or institutions willing to conduct survey of the production of electricity shall acquire permission under these Rules. The information of production, survey, transmission and distribution of electricity from 100 to 1000KW (which is exempted to obtain license) has to be supplied to the Secretary of the Ministry of Water Resources through Electricity Development Center. Likewise, any individuals or institutions willing to produce, transmit and distribute electricity have to obtain license from the Government. Any individuals or institutions willing to acquire the electricity service shall apply under these Rules in a prescribe form.

Electricity Tariffs Fixation Rules, 1993 (2050)

Electricity Tariff Fixation Commission has been formulated under these Rules in the Chairmanship of Individual from non-governmental sector as appointed by the Government. The main responsibility of this Commission is to fix and review the electricity tariff and other relevant charges. Procedures fixing such tariff have been established in these Rules. License-holder has to apply in the Commission for the purpose of causing the tariff fixed of the electricity supplied to the electricity consumer.

Soil and Watershed Conservation Rules, 1985 (2042)

These Rules have entrusted the Watershed Conservation Officer the duty to write the Department boundary and the area of the Protected Watershed Area to be declared by the Government after conducting necessary enquiry, survey and study and obtaining

the recommendation of the District Soil and Watershed Conservation Committee for the declaration of Protected Watershed Area. The land within the Conservation Area should be cultivated in accordance with the land using planning. Watershed Conservation Officer has further responsibility to declare certain area of the conservation area as natural disaster vulnerable area and coordinate between the authorities working in the watershed conservation sector.

River Rafting Rules, 1999, (2056)

Local Self-Governance Rules, 1999(2056)

The Village Council may formulate the Water and Land Committee in the Chairmanship of any member of the Council under these rules. This Committee can play a pivotal role in the water resource management in the local level. These Rules have entrusted a duty to the Village Development Committee that it has to show the status of rivers, lakes, canals, ditches, drainage, water resources, and other resources while preparing resources map of the VDC area. There is similar provision to be applied to the Municipalities and District Development Committee in these Rules. Local bodies can charge Rs. 1,000.00 in case of VDC and Rs. 2,000.00 to 10,000.00 in case of Municipalities for the use of water and other natural resources of the respective area as per these Rules.

Environment Protection Rules, 1997 (2057)

Under these Rules, Environmental Impact Assessment has to be made before starting any project using water resources, energy, drinking water projects and solid waste management projects operating in a mode prescribed in Schedule 3 of these Rules. These Rules have granted the Government to declare Environment Protected Area. No one is allowed to use current and any other harmful materials in the rivers, streams, seasonal rivers, ponds, lakes and other resources of waters of such Area. Under these Rules no one is allowed to discharge wastage beyond the standards as prescribed by the government.

Pesticides Rules, 1993 (2050)

Any individuals of institutions willing to register any kinds of pesticides has to apply to Pesticide Registrar and the Registrar may allow registration after conducting necessary inquiry whether it has any impact on environment or human or animals lives. The Registrar may reject to register such pesticides which create adverse impact on environment and human and animal lives. Professionals spreading pesticides has obtain license under these Rules. As use of pesticides have direct impact on water resources, these provisions are significant in integrated water resource management.

Solid Waste (Management and Resource Mobilization) Rules, 1990 (2046)

Solid Waste Management or Resource Mobilization Center established under Section 2.1 of the Solid Waste (Management and Resource Mobilization) Act, 1988 have been

entrusted to provide necessary service to any commercial, industrial, religious or social institution or any foreign or diplomatic commission or any other individual in managing solid waste under these Rules. As such any water resources projects may obtain such service and maintain the water resource clean. This Center has further duty to duty to remove harmful, polluted or causing to spread mass disease discharged by any individuals, authority, commercial or industrial enterprise in the process of their daily transactions or activities on their request. The Center is empowered to charge necessary service charge in this process. It has also responsibility to coordinate the local people conducting sanitation activities in their respective local areas.

3. OWNERSHIP OF WATER

The Water resources Act, 1992 (2049 BS) (WRA) is umbrella legislation on development and conservation of water resources in Nepal. The Act authorizes the Government to frame regulation on different uses of water such as drinking water, irrigation, ground, and so on. So far as the generation of hydropower is concerned, a separate legislation (Electricity Act, 1992) has been promulgated. Section 9 of the WRA stipulates that:

" (1) Notwithstanding anything written in Section 8, the license relation to the survey of water resources and its utilization for the generation of hydro-electricity shall be governed by prevailing laws.

(2) The provisions of this Act, however, will apply so far as matters relating to the use of water resources other than generation of hydro-electricity are concerned."

This provision has given way to Electricity Act a special application with respect to the uses of water resources in the generation of hydro-electricity.

The WRA has endowed the ownership and control of water resources in the State. The Act vests the ownership of water resources available in the Kingdom of Nepal in the Kingdom of Nepal. According to Section 3 of this Act:

"The ownership of water resources available in the Kingdom of Nepal shall vest in the Kingdom of Nepal."

Under this Act, the government is empowered to allocate water for different uses and resolve issues related with uses. The terminology "water resources" is quite broad and includes surface water, groundwater or water in whatsoever form. Under Section (2)(a) of WRA water resources has been defined as:

"Water resources' means water that is available in the Kingdom of Nepal in the form of surface water, underground water or in whatsoever form."

The definition of water resources is quite broad and includes atmospheric water as well. It would, therefore, include water collected from the fog with the help of a screen to trap the water particles of the atmosphere.

The National Code 1853 (*Muluki Ain* of 1910 BS) does not specifically address the issue of "ownership" of water. Unlike the statutory law, which is based on ownership principle, the National Code is based on religious scriptures. It does not talk about "rights". It is said that rights is western, and the more accurate term here is duty or *dharma*. Water rights would differ according to the meanings attached to water, and the sources and uses of water (Pradhan et al., 1997 and 2000). However, in the classical Sanskrit texts, the king has been considered as the ultimate owner or lord of all resources including water and the subjects had use rights over water for use of water for domestic or religious purposes.

The chapter on Land Cultivation of the National Code confers the right to use water whosoever is in the first. The basic principle is prior appropriation. But on the other hand the National Code also seems to favor a landholder who has land upstream. A person on the downstream will have a right to use water resources only after the need of the upstream user is satisfied. Section 1 of Chapter on Land Cultivation of The National Code provides that:

*"No person shall get water unless the person who has constructed the ditch (kulo) with his money or by his labor gets water first.
Where water is shared traditionally, it should be maintained as per the share agreed upon previously.
After the upstream field is filled with water, the owner of the field further downstream may take water to his field.
In case any obstruction is caused to the upstream landholder, the person next to him may take water and plant rice.
Later, the upstream landholder may take water and plant the rice.
A new system of ditch may be constructed in the upstream provided it will not diminish water for the existing use downstream."*

It seems from the above provisions that a right to construct an irrigation system is granted to all the riparian owners of land. But the guiding principle is "first-come first served". Consequently, Prior appropriation has held a strong position.

As water became scarce with the growth in population, shortcomings of prior appropriation became increasingly apparent. It made no provision for in-stream, non consumptive uses of water and was inherently wasteful. The common practice has been to apply for the maximum usable quantity, whether actually needed or not. It also relies heavily on prevailing community methods of water use and provides little or no incentive for the introduction of new techniques and better distribution. This seems to be the rationale behind the promulgation of WRA.

The WRA, however, has also recognized the right of an individual or the community to use water for drinking or irrigation purposes on individual or collective bases. A license is required for the use of water resources. Under Section 5 of the WRA the following uses of water resources exempted from obtaining license:

"Notwithstanding anything written in sub-section (1), no license shall be required for the following uses of water resources:

- i. For one's own drinking and other domestic use on an individual or collective basis,*
- ii. For the irrigation of one's own land on an individual or collective bases,*
- iii. For the purpose of running water-mill or water-grinder as cottage industry.*
- iv. For the use of boat on personal basis for local transportation,*
- v. For the use, as prescribed, of the water resources confined to a land by the owner of such land."*

In spite of an individual's right to use water under customary law, the WRA does not recognize the notion of the "private water". However, the notion of the "private water" is specifically recognized by a separate legislation. The Aquatic Lives Protection Act, 1961 recognizes an individual's right own water confined to his or her land that is, in the lake, a pond or a reservoir. The terms "water" and "private water" has been defined in 2 (a) and (d) of this Act as follows:

"(a) "Water" would include waters of lake, pond, seasonal streams, streams, river, water channel, canal, reservoir, manmade reservoir, swamps, water in the cage and water in the paddy field fro rearing fish, and would also include their sources.

(d) "Private water" means lakes, manmade ponds or reservoirs that exist in the land within the ownership and possession of a person, and has been paying land revenue to the government."

It means that an individual is free to store, collect and own water in one's own land. The way water has been defined in the above provision that seems to include the sources of water. The definition is very broad and directly contradicts with the provision of the WRA, which vests all water in the State.

Apart from the above-mentioned legal instruments that bear directly with the issue of ownership and control of water, the Local Self-Governance Act, 1999 also empowers the local government bodies within their respective territorial jurisdictions to own and manage assets, properties and natural resources. The objective of this Act is to empower the local bodies (government) by providing them with responsibility and authority necessary to formulate as well as implementing the plans. The A ct provides that Village Development Committee or the Municipality shall have the full title over the property and natural resources within their respective jurisdictions. The Section 68 of this Act goes like this:

"(1) The Village Development Committee shall have the full title over the following properties situated within the village development area, and the Village Development Committee shall have to supervise, repair, maintain and manage such properties:

.....
(d) Natural Resources.

(2) The Village Development shall not be allowed to sell and dispose off or otherwise relinquish its title and possession on the properties as referred to in sub-section (1) without the approval of His Majesty's Government..."

Similar authority has been given to the Municipalities in their respective jurisdictions (Section 134, LSGA). This Act has not defined the term natural resources but it would certainly include water resources.

This Act also provides the local bodies with power to levy taxes on commercial exploitation of natural resources. Financial authority of local bodies under Section 55 of this Act is as follows:

"The Village Development Committee may levy taxes as follows in its area at the rate approved by the Village Council, not exceeding the prescribed rate:

(j) Tax to be levied for commercial exploitation of natural resources and heritage within the Village Development area."

These provisions seem to imply that the local bodies have some kind of ownership rights over water resources within the territorial jurisdictions of such local bodies. These conflicting and contradictory provisions have left the issue of ownership far from settled. Under these circumstances recourse to the provision of the National Code will help clarify the legal issue under consideration. Part I of the National Code (Introductory Provision, Law No. 1) provides that whenever there is difficulty in regard to precedence of one law over the other recourse would be made to the provision of the National Code which says that specific law will prevail over the general law of the Muluki Ain. The relevant provision goes like this:

"Where specific law has been promulgated provisions of such laws take precedence over the National Code. In the absence of specific laws, the provisions of the National Code will apply."

As the WRA being the specific law on the subject of water resources it can be fairly assumed that ownership rights is essentially vested in the State. Similarly, the LSGA is also a specific law on the authority and responsibilities of local government body, if can also be argued that the law will take precedence over the WRA. In view of these contradictory provisions of law it is difficult to say that which law takes precedence.

4 RIGHT OF USE WATER

1. The Paradigm of Property Right on Resources:

Property rights define relationships among persons depending on the bundles of rights that people hold. Schlager and Ostrom (1992) defined five types of distinct rights that may be bundled together in a variety of ways. Those rights include:

- ☞ Access: The authority to enter a resource,
- ☞ Withdrawal: The authority to withdraw units from a resource,
- ☞ Management: The authority to make decisions about how the resources is to be used,
- ☞ Exclusion: The authority to decide who may enter the resource,
- ☞ Transfer: The authority to sell, lease or bequeath the resources,

Schlager and Ostrom classify the first two rights and the remaining three rights as collective choice rights. Holders of the first two rights have the authority to access and make use of the resource, but do not have the authority to make decisions about who can access or how use is to be constrained. Holders of the last three rights exercise considerable decisions making authority about how the resource is to be used and managed, who may enter the resource, and even whether the resource should be sold or lease. Thus, the more complete bundle of rights that people hold, the greater is their authority, compared to others who do not hold such rights, to make decisions on a resource.

The rights of access, withdrawal, management, exclusion and transfer are roughly cumulative. The right of withdrawal implies a right of access. In order to make use of a resource one must be able to access it. The right of management implies rights of access and withdrawal, that is, how the resource is to be used. A complete set of rights is commonly thought as private property rights. The holder of a complete set of rights in relation to a resource exercises considerable over it in relation to others. The holder of a complete set of rights possesses the authority to define rights of access and rights of withdrawal as well as the authority to transfer portions of or all of the rights to someone else.

Approaching property as consisting of bundles of rights raises several critical issues. First, in any given setting, or in relation to any given resource such as water, multiple burdens of property rights systems are likely to be defined and exercised. Property rights systems for surface water are different from those that govern ground water. Native surface flows are treated differently that water used by down riparian and produced by large diversion and impoundment projects. Groundwater is treated differently depending on location and happenstance. According to National Code overlying landowners are treated as primary holders of correlative rights and each is entitled to a reasonable proportion of the water supply in priority order. Appropriative rights exist alongside overlying rights. Appropriative rights are based on a seniority system. Between overlying landowners and appropriators, the prior have the superior right to water and appropriators are allowed to access and withdrawal any surplus water.

In general, overlying correlative and appropriative rights do not limit the amount of water pumped from a basin and water users can find them in pumping race in the Terai.

We lack ground water governing in Nepal. In such case such customary laws should be given legal flavor.

In some cases, water users have negotiated water allocations among themselves like a case in Pawati VDC of Dolakha District where they settle the disputes between the right of the appropriators and the owner of the water resources. But this process is overburdened by the strong controls of the feudal. The poorer the population the least is the bargaining power in such negotiation process. Lam (1998) in a study of over hundred irrigation systems in Nepal found that farmer governed irrigation systems performed better than government managed irrigation system. Farmers exercised their rights of exclusion and their rights of management much more carefully that did access to irrigation systems in order to better mach the capacity of the system with the land brought water irrigation, and devised water allocating rules than better matched the circumstances that government officials.

There cannot be single optimal property rights for covering resources, concludes Ostram (1999). Most resources, and the physical, Institutional and cultural setting in which they are embedded are too complex to admit of a single optimal form of governance. Instead, according to him, if resources are to be governed well, property rights and how they are exercised must be carefully matched to the resource setting. That is much more likely to occur if resources users shave in the governance of the resources, if they are allowed to exercise rights of management and exclusion and design rules of use and access. In addition to holding more complete bundles of property rights, resources users must have access to conflict resolution mechanisms to settle differences that arise as many people exercise rights of access, withdrawal, management and exclusion. Particularly, the government must respect the resources users' rights. Customary rights are viewed as anti-democratic that communities should be governed by open, constitutional policies and that legislation should be openly discussed and determined.

2. Right to Water in Particular:

Right to water can be understood as the claim of the individuals or communities to utilize water in their respective uses. Since the ownership of water is vested in the State, individuals or communities have only the right to use water available in the country. The state laws also regulate even such rights. Anyone who is willing to use water resources is required to obtain license from the State, which regulates the mode of use of the water resources. The WRA, however, recognizes an individual's right to use water resources acquired through years of usage. It is not required to go through a process of licensing. Domestic use, irrigation of one's own land on an individual basis or on a collective basis, or running water mills is allowed without going through a process of licensing. Where the water has not been put to use in the past, individuals or the community will have to go through a process of licensing in order to avail the right to use water resources. The regulatory provisions of state law with respect to right to use water can be divided into two parts which is discussed as under:

1. Customary Law

The old-aged or the customary right to use water has been accorded a status of legal rights under the National Code. WRA has also protected this right under Section 4. The characteristic of this right is such that it does not limit the quantity of water entitled to use. Such a right also did not have any time limit. Thus right to use water was for ever.

2. Modern Law

Under modern water resources laws, Government is empowered to allocate water rights, and to license and control usage. The rights of the riparian have been substantially altered in favor of government regulation. In this direction Section 4(1) of WRA reads as under:

"(1) No one is allowed to use water resources without acquiring license under this Act."

If one has acquired the license, right to water resources of such license-holder has been established in different State Rules. Rule 22 of the Water Resource Rules has stipulated as follows:

"Any person who has obtained license to operate the activities of water resources use under these Rules shall have right to use such water resources limiting the water resources of the area and location as prescribed in the conditions of the license for the permitted purposes."

Concerning right to drinking water, Drinking Water Rules has recognized certain rights to the water resources user who has obtained license under these Rules. Rule 8 of these Rules is related in this connection:

"(1) After the Users' Group is registered pursuant to Rule 6 of these Rules, such Group shall have right to use water resources limited to the amount as prescribed."

"(2) In case if any drinking water project developed by His Majesty's Government has already been handed over to the Users' Group pursuant to Section 11 of the Drinking Water Act before the commencement of these Rules, right to use such water resources of such Users' Group up to the amount as permitted shall remain in such Users' Group."

Similarly Rule 18 of these Rules states that:

"Individual who has obtained license to use water resources under Rule 14 of these Rules shall have right to use water resources limited to the amount as prescribed in the permission."

This new approach of administrative control in the management of water resources is in fact a result of worldwide development, which began in earnest after World War II under the impact of growing demand of water. Permit or license is mandatory for commercial and industrial use and these rights are transferable too. This has made possible for the government to manage the country's water resources more effectively. Under this WRA, the riparian landowners are required to apply for license for its use except for domestic use as mentioned above. Exceptions have been made for one's own drinking water or irrigation for one's own land on an individual or on a collective basis as stated in the preceding Chapter.

There are certain other legislations, which grant water rights to special purpose bodies or as an incident of regulated activities. These include special purpose activities such as granting license for water rafting and collection of license fees, and restriction of access to a stream or closing the stream

altogether for the general public within national forests for development and conservation of the forest.

WRA stipulates that water resources users using the water resources prior to the commencement of Act are also required to get license under this Act. Section 8(3) of this Act provides as under:

"(3) Except the implication of Section 4 (2) of this Act, individuals or organized body utilizing the water resources prior to the commencement of this Act shall also apply to the designated authority with prescribed descriptions within one year of the commencement of this Act for the purpose of obtaining license."

This Act came into effect in August 1993 (Bhadra 1, 2050).

Even though this Act is an umbrella Act it does not include the integrated management concept in it. However, it requires a person or an organized body to use water without causing damage to other. Section 4 (3) is related in this connection:

"(3) Individuals or organized body using the water resources shall use the water resources beneficially without causing any damage to others."

In such manner this Act emphasizes for beneficial use of water taking consideration of other uses.

4. ORDERS OF PRIORITIES

Orders of priority shall be understood as what utilization of water should precede over the other. The WRA has provided for the general order of priority in the utilization of the resource. While utilizing water resources a certain order of priority must be followed. Section 7(1) of the WRA stipulates that:

"Generally following priority orders shall be followed while utilizing water resources:

- (a) Drinking water and domestic uses,*
- (b) Irrigation,*
- (c) Agricultural uses such as animal husbandry and fisheries,*
- (d) Hydroelectricity,*
- (e) Cottage industry, industrial enterprises and mining uses,*
- (f) Navigation,*
- (g) Recreational uses, and*
- (h) Other uses."*

In case if any dispute arises while utilizing the water resources, designated Committee shall determine whether the utilization is legitimate or not on the basis of the priority orders as fixed in Section 7(1) and beneficial use of water resources as directed under Section 4(3) of this Act. The determination of the Committee shall be binding to all the users of water resources in dispute.

Under Drinking Water Rules the water supplier shall give due consideration to certain facts while distributing the drinking water. Rule 29(1) reads as under:

"Water supplier while providing services shall base on following subject-matters:

- (a) Geographical structure,*
- (b) Population,*
- (c) Quantity of waters available in the source,*
- (d) Capacity of the structure, and*
- (e) Other Technical factors."*

Similarly, Rule 30 of these Rules states that:

"Water supplier shall give priority to the following Consumers to provide services subject to Section 29(1):

- (a) Health Post, Orphanage, Old-age-home or Social Organization,*
- (b) Temporary shelters created due to natural disasters such as flood, fire, mass infectious disease, or similar kinds of other disasters,*
- (c) School, Hostel, Police Post, Governmental, Semi-Governmental or Non-Governmental Offices or the Quarters of the employees working in such offices,*
- (d) Residential Houses of the General Public,*
- (e) Very important construction works of public interest,*
- (f) If in case of industry or factory, workers of such industry or factory.*

Under these Rules, the water supplier is required to obtain necessary consultancy from respective Village Development Committee, Municipality or District Drinking Water Office and the District Water Resources Committee while fixing priorities other than prescribed above.

5. BENEFICIAL USES OF WATER

In the context of the use of water resources, beneficial uses is considered as appropriation, distribution, utilization and conservation of water and legitimate way of controlling it. Nowadays there is a growing debate on how to manage water resources in an efficient, productive and equitable way and learn from past experience for a better future.

Section 2(b) of the WRA has defined the term " Beneficial Uses". According to this definition:

"(b) "Beneficial Uses" means rational utilization of water resources within the available means and resources"

Rational use or optimum use, therefore, is not to be interpreted solely in the light of technical possibilities of the resource alone. It is conditional, and should be seen in the context of available means for its development.

A person or an organized body willing to utilize the water resources in required obtaining license. No one is allowed to utilize the resource without first obtaining license under WRA. However, there are some exceptions, such as domestic use of water, irrational use on an individual or collective basis, and running water mill in which case a license is not needed as stated in preceding Chapters. But one is required to use the resource in a beneficial way without causing harm to others. Any dispute arising out of its utilization needs to be resolved on the basis of whether the use is beneficial. The Water Resources Rules provides for the establishment of a Water Resource Utilization Investigation Committee for resolving the disputes raised thereof. Furthermore, if a particular use is found to be not with priority order set by the Act, or is harmful to the local people, the Committee may decide whether such use is beneficial or not. While deciding upon the case, the Committee may also specify the manner of its utilization, or prescribe conditions of utilization.

The beneficial uses of water resources may be divided and dealt in the following subheadings:

1. Domestic Use

Drinking water for domestic use is free from the state regulation under WRA. Riparian landowners may make use of the water that flows through their land as incident to property. Use of water on an institutional basis for collective benefits of riparian or non-riparian landowners, however, is subject to regulation and requires a license. For this purpose the WRA has provisions for constitution of Water Users' Group. Such a Group functions as a corporate body and has all the rights as to a natural person. Section 5 of the WRA has provided for the establishment of Users' Group as under.

"(1) Individuals willing to utilize water resources for collective benefit in institutional basis may constitute Water Users' Group

(2) Water Users' Group pursuant to Sub-Section (1) shall be registered in the designated officer or authority in a prescribed manner.

The registering authority has been designated in the Water Resources as willing to constitute shall apply to the Authority Complying the following particulars as per Rules 5 of the Water Resources Rules:

- (a) *Full name and address,*
- (b) *Objectives and scope,*
- (c) *Qualification for the membership and membership fee,*
- (d) *Dismissal and resignation of the members*
- (e) *Claim on and transfer of title or nomination of titleholder,*
- (f) *Regarding General Meeting,*
- (g) *Formulation of Board of Directors (election and power, duties and functions)*
- (h) *Conditions to remain in the post of Board of Directors,*
- (i) *Procedures of the meeting of Board of Directors,*
- (j) *Fund and audit,*
- (k) *Amendment in the Constitution,*
- (l) *Winding up,*
- (m) *Miscellaneous*

Upon Submission of the application the District Water Resources Committee satisfied issues the Certificate of Registration under Rule 6.

One the absence of specific regulation with regard to the use of groundwater, people are free to extract groundwater, and there is no limit of depth one can go or amount of water one can pump.

The responsibility of providing public water services for drinking purpose rests on several agencies including the local bodies. Nepal Drinking water supply corporation, a public corporation, has been wasted with the responsibility of supplying water for domestic use in selected urban areas. In other areas or the country including the rural areas, the Department of Drinking Water Supply and Sewerage is responsible for providing the service to the public. Such a service can be provided through Water Users' Group (The Group) constituted under the WRA and Water Resources Rules. The Group is required to take license for supplying water to the consumers. The license provides The Group with a right over the quantity of water mentioned in the license. Consumers are required to apply for water supply service. They are to pay charges for the service and should refrain from doing harm to the system or avail service on an unauthorized manner.

However, in the rural areas, the local government bodies may provide the service of water supply to the public. The Village Development Committee (VDC) in the rural areas and municipalities in the urban areas have the authority to plan, construct and operate water supply systems. Similarly, the District Developments (DDC), (a district level local government) have jurisdiction over water supply functions, duties and powers of the VDCs regarding drinking water have been prescribed follow:

"(1) In addition to the execution of the decisions and directions of the Village Council, VDC shall have following functions, duties and powers:

.....

(b) Relating to village drinking Water supply:

- (1) *To operate and execute drinking water project required within the jurisdiction of the VDCs for meeting the local necessity of drinking water supply and preserve such project.*
- (2) *To construct and protect well, pond and water-tap within the area of VDCs and*
- (3) *To conserve the sources of the water resources within the area of VDCs."*

Section 96(1)(b) and 189(1)(b) has endowed the similar powers, functions and duties to the Municipalities and DDCs respectively. But in connection to DDCs, they have power to formulate and execute the drinking water supply projects to the consumers of more than one VDC. the Local bodies, however, do not undertake construction activities themselves. Under Sections 28(2), 96(3) and 208, of the LSGA, these bodies are to encourage the Users' Groups or other non-governmental organizations to operate, organize, supply and construct water supply system within the VDC area.

2. Irrigation Use

The ownership of water lies with the State, so no person is allowed to utilize water without the license term WRA. However, certain exceptions are allowed by; the WRA where riparian landowners are free to take water for irrigation individually or on a collective basis. They are not required permission or license to their farming needs. They can use the water where passes through their land as an incident to the property. But license is required for use of water by non-riparian landowners collectively or on institutional basis. The WRA has provisions Water Users' Group (WUGs) to prove water for irrigation to the benefits of the farmers. A separate Irrigation Rules, 2000, have been formulated under the authority of WRA to regulate the irrigation system in Nepal. These Rules States the formulation of the Water Users' Group, which enjoys all rights of a legal personality as a corporate body. The WUG is required to obtain license or permit for withdrawing the Public water to supplying to the consumers. Under Rule 5(1) of the Irrigation Rules, the WIG shall have following function, duties and powers:

- a. *"To maintain, operate and manage the irrigation system operated by it. Provided that if in case it requires change or replacement or some parts or equipments that affect the structure, the WRG shall obtain prior approval from concerned Irrigation Office.*
- b. *To make the water available to farmers in time and quantity as required by the type of crop and condition of the land,*
- c. *To keep record of the land where service could not be availed and to recommend for the exemption of charges as payable by the consumers of such land,*
- d. *To supply water to new users without causing impact on the previous users receiving the service,*
- e. *To mobilize the public participation for the maintenance of the irrigation system, and*
- f. *To construct additional structure to increase the irrigation area considering the amount of water available.*

In addition to the above functions and powers of the WUG as state above, Section 5(2) and (3) further provide that:

- "(1) While repairing and maintaining the structures if the WRG requires technical constancy, it may request to the concerned Irrigation Office and if such request is made, the concerned Irrigation office shall provide necessary technical constancy.
- (3) WUG may delegate certain functions and powers to various sub-committees formed from among the users receiving the service."

The authority of registration of the WUG lies concurrently in two agencies under two different Rules incased under the WRA. The authority of registration under the Water Resources Rules, 1993 lies with the District Water Resources Committee, whereas, the same authority for to registration also lies with the District Irrigation Office under the Regulation Rules, 2000. The former is a coordination committee in the district level composed of representatives of various agencies in the district under the chairmanship of the Chief District Officer. The later agency is a regular Government body in the district under the Department of Irrigation.

Following the Government's policy of involving the users or the beneficiaries in the operation and management of irrigation facilities, the WRA created the provisions for giving such facilities to WUG, these Groups exercise authority for regulating the services which also include laying down procedures in applying for use of irrigation facilities by a person and conditions of such use. It can also stop water to consumer who has failed to pay service charge or has failed to fulfill the conditions of agreement between the consumer and the WUG a mentioned in Rules 18 to 23 of Irrigation Rules

Similar functions of supplying irrigation water, among others, also lies with the local government bodies at the local level. These Local bodies are also required to utilize consumer committees (EIG) for construction and operation of the facilities. Rules 70 and 71 of The Local Bodies (Financial Administration) Rules 1999 provide a detailed mechanism and procedures with respect to the works to be carried out through the consumer committees along with the function and powers.

3. **Fishing**

Fishing is regulated by; Aquatic Livers Protection Act, 1960, Local Self-Governance Act, 1999 and National park and Wildlife Protection Act, 1972. The Aquatic Lives Protection Act prohibits fisher with the help of current explosives or any poisonous substances. Section 3 of the Act is particular on matter, which provides.

*"No one is allowed to use any kind of current, explosives or other poisonous substances in the water or surroundings of such water with the intention of catching or killing the aquatic lives living in the water.
 "Provided that notwithstanding anything contained in the above provision, the owner of private water is not prohibited to utilize other methods other than using poisonous substances to catch or kill the aquatic lives of the private water without hampering other aquatic lives."*

The above restriction is limited to public water only. The restriction with regard to methods of fishing in the probate waters is less stringent. In the case of private water, the prohibition is limited to using poisonous substances. In addition to the above stated general rule, section 4 of the Act also empowers

the Government to prohibit catching, killing or causing harm to certain species of aquatic lives by publishing notice in the Nepal Gazette. It empowers the Government to issue notice prohibiting in general or in particular season of catching, killing or causing harm to certain prescribed species or aquatic animals without the permit from the Government or local authority. However, fishing in private water is exempted from the above restrictions. Section 5(b) also require construction of domestic use or irrigation or any storing or diverting water for generating electricity, domestic use or irrigation or any other purpose. Where construction of fish ladder is not possible, a hatchery or aquatic nursery; should be established near the site for artificial reproduction of the designated species. Section 3(a) prohibits closing or dismantling fish ladder, or dam or any other structure established for the protection of aquatic lives. The Government as well as the local bodies are authorized to award contract for fishing communicably under sec. 7 to the Act.

The DDC in each or the seventy-five administrative districts and within its territorial jurisdiction has been authorized to issue license for catching fish in the river and impose amount of fees as approved by the District Council under Section 217 of LSGA. Section 218 entrusts DDC the power to sell sand, gravel and boulders from rivers within its jurisdiction.

National Parks and Wildlife Protection Act, 1972, govern regulation of fishing within the area for national park. The definition of "wildlife" mentioned in th Act includes fish, among other animals and birds.

Section 2(f) of this Act defines "wildlife" as:

"Wildlife' means and includes except domestic lives all mammals, birds, reptiles, fishes, amphibians, or insects and also eggs in case of hatching lives."

The Act prohibits hunting including fishing without a license, and under the conditions and methods mentioned in the license.

Section 11 of this Act states;

"(1) No one as allowed to hunt wildlife without obtaining license."

One willing to obtain license shall apply to the designated authority in prescribe format. The manner and method of hunting shall be prescribed in the license issued to the applicant and the license-holder is required to follow such conditions while hunting including fishing in the National Park area.

4. Generation of Hydroelectricity

The Electricity Act, 1992 and Electricity Rules, 1993, govern generation of hydroelectricity. No person or corporate body, foreign national is allowed to conduct survey, generate, transmit and distribute electricity without the prior license under the Act. But license is not required for survey, transmission and distribution of the electricity up to 1000 KW of power. Section 3 of the Act provides that;

"No one is allowed to survey, generate, transmit or distribute electricity without obtaining license."

Provided that no national person or organized body shall require obtaining such license for the generation, transmission or distribution of the electricity up to 1000 KW power and conducting any survey required for the purpose. Before surveying, generating, transmitting or distributing electricity from 100KW to 1000 KW, a notice in the connection shall be served to the designated officer in a prescribed manner."

Individuals or organized body willing to survey, generate, transmit or distribute electricity from 100KW to 1000 KW should provide notice to the Secretary of the Ministry of Water Resources in the Connection Disclosing the following particulars (Rule 3 of the Electricity Rules, 1993):

- "(a) Detail project report,*
- (b) Map of the project location (disclosing main structures of the project)*
- (c) Source and amount of the water to be utilized,*
- (d) Area of distributing electricity and number of consumers to be benefited from the project,*
- (e) Description of other previous utilization by any; other persons of water resources estimated to be utilized if any,*
- (f) Other necessary particulars."*

Section 4 of the Act stipulates that issuance of license for the survey and generation of electricity above the stated amount. This Section reads as:

" (1) Individuals or organized body willing to survey, generate, transmit and distribute electricity shall apply to the designated officer along with economic, technical and environmental study report of the related subject, disclosing other prescribed particulars" I

Other particulars have been prescribed in Rule 4, 5 and 6 of the Electricity Rules. Rule 4 states that individuals willing to apply for obtaining license for survey of the generation of electricity shall apply to the Secretary through District Development Center disclosing the following particular:

- (a) Map of the project location (clearly disclosing the initial electricity plant, dam, water reservoir, cannel, tunnel., sub-station, transmission line, initial map of distribution area, village, city, historical places, ways etc. of the project area)*
- (b) The area and amount of water resources to be surveyed.*
- (c) Estimated cost and total duration to complete the project,*
- (d) Total joining capacity and annual production estimate of the project,*
- (e)*
- (f) Other necessary particulars.*

Likewise any body willing to obtain license for survey of transmission of electricity shall disclose following particulars in the application to the Secretary as per Rule 5:

- (a) Initial rout map of the electricity transmission line (disclosing proposed main transmission additional line),*
- (b) Total length, of the transmission line, objectives and necessity,*
- (c) Standard and capacity of the voltage to be used for the propose of transmission*
- (d) If in case transmitting wholly at once, maximum load of the electricity and kind of the consumers,*
- (e) Estimated cost for completing the transmission line and total duration (including survey and construction)*
- (f) Other necessary particulars."*

Applications for the license to distribute the electricity shall disclose the following particulars as stated in Rule 6 of the Electricity Rules:

- (a) Map of the distribution area (clearing disclosing the geographical description of the area, existing distribution system, and initial map of the proposed distribution system)*
- (b) Objective and necessity of the distribution system,*
- (c) Number and kinds of the consumers to be benefited by the distribution system,*
- (d) Point if selling and receiving electricity and other particulars relating to sale and distribution,*
- (e) Estimated cost for the construction of distribution line and total duration (including survey and construction),*
- (f) Other necessary, particulars."*

Upon the secretary; the receipt of the application may conduct through the Electricity Development Center an enquiry on the application and if satisfied issue the license of survey; to the applicant under Rule 7 and 8. Once the license for survey is issued, it may; be valid for a maximum period of five years in Section 5 of the Electricity Act.

Similarly in the application for acquiring license for generation, transmission and distribution of electricity the applicant has to disclose certain particulars as provided in Rules 12, 13 and 14 of the Electricity Rules.

According to Rules 12 of these Rules the applicant should disclose following particulars in the application to acquire license to generate electricity.

- (a) Detail project report (clearly disclosing map of the project area, sources of the electricity to be generated, estimated cost and duration of completion of the project, name of the participant of the project and kinds of their participant, person or organized institution retaining ultimate ownership of the*

- project and name and addresses of the board of directors of such institution etc.)*
- (b) If in case use of any minerals to generate the electricity, kinds of the minerals to be used, supply method and storage system of such minerals or agreements or memorandum of understanding or any other document if any in this regard,*
 - (c) Feasibility analysis (technical prescription or economical analysis including detail map of the project, details of the costumes and consumers, estimated amount of the electricity to be distributed, descriptions of other transmission and distribution system existing in the ownership of any other individual or organized institution, if any to be used in the supply of the electricity),*
 - (d) Financial Provision (Estimated financial provision of the project, economic status of the investors of the project, commitment of the financial institutions directly participating in the project, liability and share capital of the investors and percent of the interest,*
 - (e) Utilization and acquisition of houses and lands (total amount of the governmental or non-governmental land required for permanent or temporary utilization or acquisition for the project and the record of the land owners_*
 - (f) Environment Impact Assessment (method to be applied for minimizing the considerable adverse impacts on environment to be created by the project, in addition to the social and economic impacts to be created by the project, training to be given to the local people in connection with existing local labor and maintenance, construction and operation provision or possible impact to be occurred to the respective landowners in the operation of the project, record of the people to be displaced and necessary; provisions for rehabilitation and resettlement of such population.*
 - (g) Details of sale and purchase of the electricity Oagreement or memorandum of understanding or other documents, if any, relating to sale and purchase of electricity power to be generated from the project_*
 - (h) Details relating to supply, transportation and storage of the fuel (agreements or memorandum of understanding or any other documents, if any, relating to supply, transportation and storage of electricity or*
 - (i) Other necessary particulars"*

Likewise, Rule 13 of the Electricity Rules requires following particulars to be disclosed by the applicant applying to obtain license for transmission of the electricity:

- (a) Detail project report (disclosing source of electricity to be transmitted, estimated cost and duration of completion of the*

- project, name of the participants of the project and kinds of their participant, person or organized institution retaining ultimate ownership of the project and name and addresses of the board of directors of such institution etc).*
- (b) Rout-map of transmission line and sub-stations necessary for transmission, necessary right-of-way and ceiling line diagram,*
 - (c) Standard of the transmission voltage, transmission capacity, quality of construction, size of the wire and duration in-between, kinds of high-tension and insulator and detail map of construction,*
 - (d) Feasibility Analysis (technical details and economic analysis of the project, if in case to be transmitted and supplied whole production at once details of the consumers and costumers, estimated amount of electricity to sold and descriptions of other transmission and distribution system existing in the ownership of any other individual or organized institution, if any, to be used in the supply of the electricity),*
 - (e) Financial provision (Estimated financial provision of the project, economic status of the investors of the project, commitment of the financial institutions directly participating in the project, liability and share capital of the investors and percent of the interest,*
 - (f) Utilization and acquisition of house and lands (total amount of the governmental or non-governmental land required for permanent or temporary utilization or acquisition for the project and the record of the land owners),*
 - (g) Environment Impact Assessment (method to be applied for minimizing the considerable adverse impacts on environment to be created by; the project, in addition to the social and economic impacts to be created by; the project, training to be given to the local people in connection with existing local labor and maintenance, construction and operation provision or possible impact to be occurred to the respective landowners in the operation of the project, record of the people to be displaced and necessary provisions for rehabilitation and resettlement of such population.*
 - (h) Details relating of sale and purchase of the electricity (agreement or memorandum of understanding or other documents, if any, relating to sale and purchase of electricity power to be generated from the project),*
 - (i) Map disclosing other electricity related structures of within 1.5 km diameter area of the transmission line,*
 - (j) Other necessary particulars*

Rule 14 requires following particulars to be disclosed in the application for acquiring electricity distribution license:

- (a) Detail project report (disclosing the source of electricity to be distributed, estimated cost and duration of completion of the project name of the participants of the project and kinds of the*

- their participant, person or organized institution retaining ultimate ownership of the project and name and addresses of the board of directors of such institution etc.)*
- (b) Feasibility analysis (technical details and economic analysis of the project, estimated amount of electricity to be sold, descriptions of other transmission and distribution system existing in the ownership of any other individual or organized institution, if any, to be used in the supply of the electricity),*
 - (c) Financial provision (Estimated financial provision of the project, economic status of the investors of the project, commitment of the financial institutions directly participating in the project, liability and share capital of the investors and percent of the interest),*
 - (d) Map of the distribution area (geographical status of that area, existing distribution system, new distribution system to be constructed),*
 - (e) Standard of distribution voltage, or quality of construction,*
 - (f) Number and kinds of customers to be served,*
 - (g) Details relating to sale and purchase of the electricity (agreement or memorandum of understanding or other documents, if any, relating to sale and purchase of electricity power to be generated from the project),*
 - (h) Other necessary particulars.*

After the submission of such application with the above detail, the Secretary may conduct necessary enquiry and if satisfied issue the license for generation, transmission and distribution of the electricity to the applicant the applicant would start the project physically within three months in case of survey and within one year in case of transmission and distribution.

Any license-holder willing to import electricity within the kingdom of Nepal shall obtain prior approval from His Majesty's Government of Nepal as per Rule 23 of the Electricity Rules, 1993.

The license for generation, transmission and distribution may be given for a period of 50 years under Section 5 of the Electricity Act or in the event of natural calamities. Similarly, supply can be stopped if the consumer fails to pay electricity charge and other charges or uses electricity in an unauthorized way. A person or organized body is required to maintain the quality standard of electricity supplied as prescribed by the government in Section 23 of the Act. The liability for paying the charges of electricity by each consumer is determined by Rule 33 of the Electricity Rules. The Electricity Charge Fixation Commission formulated under Section 17 of the Electricity Act fixes the rate of electricity charges.

Control of Theft of Electricity Act, 2001 has prohibited stealing electricity and has provided punishment for person committing such act. The punishment to the offender may extend up to three months of imprisonment or fine up to five thousand rupees or both. The offender shall also be liable to pay compensation of actual damage and additional amount equal to the compensation to the distributor. If the same offender repeats the offence shall be liable to pay compensation

of actual damage and 200% additional amount of the compensation amount to the distributor. Further, the offender shall be punished with the imprisonment up to 6 months or fine up to ten thousand rupees or both each additional offence. The must of offence under the Act is public offence.

(4) Mining and Industrial Use

There is absence of specific provisions in the law for granting water rights for exploration and testing for exploitation of minerals or for the use of industries. The Industrial Enterprises Act, 1992 or Nepal Mining Act, 1966 or the Mines and Minerals Act, 1985 do not authorize the use of water for such purposes. The provisions of WRA would, therefore, apply to these activities and thus it is required to get license for use of public water. Because drawing water from the source may interfere with other uses of water and disturb the rights of others. The only exception allowed is for running water mill or for cottage industries, where a license is not required as provided in Section 4(2) of the WRA.

However, Section 10 of the Industrial Enterprises Act state that any proponent establishing any industry which may have adverse environmental impact shall obtain prior approval from the Government before its establishment, extension and diversification. Similarly Section 11(a) of the Mine and Minerals Act, 1985 provides that any person conducting mining activities shall not create significant adverse impact in the environment. These provisions may; have direct impact on water pollution. It mans that industry; cannot be established, extended or diversified and mining activities cannot be carried out creating environmental pollution in the water resources.

(5) Navigation

Inland navigation in Nepal is confined to country boats for crossing the river in the hills or in the Terai. WRA does not contain any specific provision on the use of water for inland navigation. The scope of the provision of Section 4(2) of the WRA is limited. The rights of person to use a boat for personal purpose and for crossing the river are accepted by the Act, which does not require a license therefore all other case, it can be assumed that a permit is required for use of water for inland navigation however no detail rules, has been framed under the Act invoking the provision of the Act to navigation. People generally use river for floating timber or bamboo in certain parts of the country. But there is lack of rules governing safety or the conduct of rafts-men River Rafting Rules 2001 is silent on it.

The authority to develop inland navigation has been given to the local body under LSGA. According to Section 189(1) (d) among other functions and powers of DDC, it has power,

"(6) to develop and promote navigation and rope ways."

But; no detailed rules have been framed regulating such activities. The authority to levy fees under the Act, for navigation, rafting and fishing has been delegated to DDC under Section 217 of the LSGA. The Local Self-Governance Rules, 1999 authorizes the DDC to levy fees for issuing license and renew them on annual basis The objective of these provisions, however, is limited to collecting revenue for the local body rather that regulation of activities.

Likewise, Section 10.1.14 of the Pashupati Area Development Act, 1987 has entrusted the Pashupati Area Development Council of Directors the power to protect and conserve the cremation area, river navigation, water resources or water stream etc. It includes the power to manage the water resources of the area beneficially considering the maintenance of environment of the area.

(6) Recreational Use

Whitewater rafting, a recreational use of water is very popular and is one of the most important tourism activities in Nepal. Nepal's terrain is suitable for such sport. Section 45(a) of the Tourism Act, 1978 provides registration and licensing of whitewater rafting business. It also provides for renewal and regulation of the activity including suspension and cancellation of such business. Even a tourist going for rafting has to acquire license from designated officer under section 45(b) of this Act, The Trekking and Rafting Rules, 1984 has laid down procedures for applying for a permit, fees to be charged and facilities provided for the import of necessary boats and tools for the operation of rafting. The authority to grant permit has been given to the Ministry of Tourism. Anybody or a group wishing to engage in rafting has to apply to the Ministry in the prescribed format provided for in the Rules.

River Rafting Rules 2001...

The local bodies have the authority to change annual fees to rafting business for licensing or renewal of such license. The amount of fees to be charged by the local body has been proscribed in the Rules as stated earlier.

(7) In-stream Use

The WRA is not specific about in-stream use of water. It does not state how much water should be left in the river for in-stream use, However, there are certain provisions in the Act that bear on this issue indirectly. The Act provides that use of water resources must be beneficial without causing damage to other users. Similarly, the Act further stipulates that while utilizing water resources, it shall be carried out in a manner that no adverse affect be made on environment by way of soil erosion, flood, and landslide or similar other cause. The Phrase "similar other use" would denote any other use of water in the river including maintaining ecology of the river, maintaining aquatic life, use of the local people for religious or cremation purpose.

7 RESETTLEMENT AND REHABILITATION

With the exception of a few projects in other sectors, water projects involve a large number of displacements. Reservoir projects generally have problems of displacement and hence resettlement. Moreover, Projects taken up in recent years have affected more people per unit of land acquired because of the growth in population. Considering the environmental concerns of the present day, the issue of resettlement will be more complex in the future.

There are several laws that touch upon the issue of resettlement. The Constitution of the Kingdom of Nepal is the main legal document guaranteeing the fundamental rights of the citizen. It guarantees the property rights of all citizens. Furthermore, it states that except for public good (sarbajanik hita), the state will not acquire or obtain or exercise authority over individual property. More importantly, it specifies that in case the State acquires or establishes its rights over individual property for public good, the State will compensate for the loss of property and the basis and procedure for compensation will be specified under subsequent acts.

The major part of the Constitution with regard to the compensation to be provided to the citizen for the acquisition of their property is as under:

"Article 17 (2) The State shall not, except in the public interest, requisition, acquire or create any encumbrance on, the property of any person.

(3) The basis of compensation and procedure for giving compensation for any property requisitioned, acquired or encumbered by the State in the public interest, shall be as prescribed by law. "

Land Acquisition Act, 1977 (2034) is the main legislation to guide the compulsory acquisition of land in the country. The Act clearly states that if HMG deems it necessary to acquire land for any public work it may, subject to the award of compensation pursuant to this Act, acquire the land.

"Section 3: His Majesty's Government, if deems necessary for the purpose of public interest, may requisition any land laying anywhere within the Kingdom of any one awarding necessary compensation as prescribed under this Act "

The Act also specifies the types of compensation to be paid to the affected families. It states that the compensation for the land to be acquired under this Act shall be paid in cash. The Act also envisages possibility of two separate rates of compensation distinguishing between families who lose all land and those who lose only some portion of their land. In determining the compensation, the Committee has to consider guidelines of HMG and the loss suffered by persons due to acquisition of land, shift of residence or place of business to another place. If the land has to be acquired for institutions other than the Panchayats (local Government Committees) and institutions fully owned by the government the Committee has to consider the following in fixing the compensation amount.

- Price of land prevailing at the time of notification of land acquisition,
- Price for the standing crop therein and the house, wall, shed, etc., and

- Damage incurred by the concerned person by being compelled to shift his/ her residence or place of business in consequence of the acquisition of the land.

Generally the mode of compensation has been cash compensation for land acquired, notwithstanding of a legal provision of compensation in favour of land for land. If a family loses all his /her land and opts land for land compensation, the government may, if ailani (unclaimed land) or other government land is available, provide land to them. These clauses are too general in nature.

The provisions of the Land Acquisition Act fall short of the liberal spirit of the Constitution of the kingdom of Nepal, 1990. In the existing legal framework procedural matters regarding the land (plus other assets) acquisition and compensation have been dealt with but details are missing. Some of these missing details include factors determining compensation, procedures of assessment, rehabilitation, depreciation of assets while relocating, the social and psychological aspect of the seriously affected individuals. Existing legal provisions do not require implementers to ask for compensation options to the affected people while deciding to acquire their assets. Although fulfilling everyone's compensation options may not be feasible, but to be insensitive to the choices, especially of those who lose most of their livelihood seriously undermines the spirit of human rights and the Constitution seriously except cash. Operationally, cash compensation is the easiest mode of operation but its long-term impact on families who are not used to large cash flow is more negative than otherwise. There is lack of serious consideration for rehabilitation programmes. The law does not meet the high aspirations of host communities by acquisition of land.

Beside Land Acquisition Act, 1977, the Water Resources Act, 1992 make some general provisions regarding settlement and rehabilitation, although the provisions of this Act are vague and not specific. This Act states that if HMG or a licensee implements a construction work relating to the development and utilization of water resources, HMG may prohibit the use of the premises, whether a house or land. HMG may prohibit the use of the premises, whether a house or land. HMG or the licensee shall pay compensation as prescribed to the concerned person for the damage or loss caused by the prohibition. Similarly, the electricity Act, 1992 has the same provisions about land acquisition and prohibition on using the premises of construction area as are mentioned in the Water Resources Act. The procedure is applied in paying compensation, too.

In addition to laws, some sectoral Policies and Strategies also make some provision in this regard. The Hydropower Development Policy, 2001, stipulates that appropriate provision shall be made to resettle displaced families. Similarly, the Water Resources Strategy, 2002, suggests that project-induced resettlement should be avoided or minimized, if resettlement is required. It sates adequate and timely compensation and rehabilitation measures should be provided to fully offset social and economic losses and to enable affected people to share in overall project benefits.

8 HARMFUL EFFECTS OF WATER

A. Watercourse and Catchments Protection

The Water Resources Act provides that utilization of the resources should be made without causing substantial adverse effect on the environment. Section 20 of the Act stipulates that:

"Water resources shall be utilized without causing substantial adverse impact on the environment in the form of soil erosion, flood, landslide or other activities of similar nature."

The law requires that utilization must be done in a manner that no adverse effect is caused to the environment by way of soil erosion, flood or landslide. Nevertheless, other legislation for example, the Environmental Protection Act provides that environmental studies be carried before starting the project. Section 3 of the Environmental Protection Act, 2053 reads as under:

"A proposer shall, for prescribed proposals, conduct initial environmental examination or environmental impact assessment."

Soil and water conservation, as well as control of floods, landslides and soil erosion, come within the scope of the Soil and Watershed Protection Act, 1982 (2039). The Act authorizes the Government to designate any area as Protected Watershed Area. Under Section 3 of this Act the government is entrusted to proclaim such area as under:

"His Majesty's Government, if deems necessary, may declare any area within the Kingdom of Nepal as watershed protected area determining the area"

In the area thus designated, the Soil and Watershed Protection Officer may construct dams or check dams embankments, terrace improvement works, water channels or diversion channels, retaining walls, ponds and similar other structures for the protection of the area. The Officer may also protect and maintain forest and greenery in the slopes where there is danger of landslides, and also maintain a balance between the nutrients of the soil and water and the environment. The officer is also authorized to restrict activities that might contribute to soil erosion or cutting of the banks or slopes in around the design area. The authority of the officer is quite extensive and extends to restricting certain activities in area that are prone to natural calamities. Notwithstanding anything provide in other law and in area prone to soil erosion nobody can collect or restrain water from any system, channel, lake or ground water and divert to a canal for use elsewhere through construction of dams without the permit of watershed protection officer. However, these reactions do not apply to development of water resources under taken by the government.

At the local level the local bodies. VDCs, municipalities and the DDCs) have been charged with preparing and implementing soil erosion and river control programs under Local-self Governance Act, 2055.

B. Drainage and Sewerage

The responsibility for the provision of sewerage services to the public into urban area lies with the Nepal Water Supply Corporation. Houses and buildings are required to connect their domestic lines to the sewers. In addition to the above service, the Corporation provides storm water drainage service as well. At the local level, the Village Development Committees have been given the responsibility of providing sewerage services in residential areas. [65] Disposal of solid wastes from houses is governed by a separate regulation. Under the Solid Wastes (Management and Resources Mobilization) Act, 1978 (2044), the Solid Wastes Management and Resource Mobilization Centre was established. The Centre was changed with the responsibility of, among others, providing container service, transporting and managing wastes, recycle and produce manure from the wastes and construct treatment plant. The activities of the Centre were limited within the Katmandu Valley. Since the enactment of the Local Self-Governance Act, the responsibilities of managing solid wastes and providing drainage service have been given to the municipalities. The Centre has now been closed down.

While the legislation mentioned above dealt with the legal aspects of management of solid wastes and drainage service, the Environment Protection Regulations, 1997 provided for a regulatory mechanism. The Regulations provides that no one shall discharge wastes in contravention of the standard set by the Ministry of Population and Environment. The Regulation also prohibit excessive release of noise, heat and radio-active emission from means of mechanized transport also requires industrial establishments to obtain a Pollution Control Certificate within a specified period of time. It also provides for a mechanism for hearing complaints, taking action and realizes from the person or industry the cost of cleaning up operations. The HMG may fix environmental standards on sound, heat, radio-actives, and other solid wastes being discharged from any machines, industrial enterprises and other places publishing the notice in official gazette under these Rules.

C. Floods and Other Harmful Effects

The water resources Act have authorized the Government to frame detailed rules on specific subjects including soil erosion and flood control. The problem of soil erosion has been partially covered by Soil and watershed Protection Act and the National Park & Wildlife Conservation Act within their respective jurisdictions - within the designated protected area and national parks. There is absence of detailed rules applicable all over Nepal. The Water Resources Act has made provision to frame rules relating to flood control and soil erosion. The Irrigation Regulations, 2000, however, provides for the constitution of Irrigation and River Control Committee in all the seventy-five administrative districts of Nepal under the chairmanship of the Chief District Officer. The functions and rights of the Committee are to protect the irrigation canals and other areas from natural calamity of floods and landslides and monitor the implementation of prevention and control measures carried in the district. The Committee can also submit a report containing suggestions and recommendations to the Government for the development, extension and protection of irrigation programmes as well as for river control.

9 WASTES AND POLLUTION

A. Wastes and Misuse of Water

The waste of water or misuse of water is not an issue under the prevailing law. The law does not have specific provisions discouraging wastes while utilizing the resource. The Act is silent on the issue of efficiency in use. But the authority granting the license for utilization can prescribe in the license methods for utilizing the resource. Moreover the right of the licensee is limited to the quantity of water mentioned in the license. The Act, however, provides for detailed rules to ascertain whether the use can be called beneficial when the particular use is in dispute. The Water Resources Act requires a person or a corporate body to use water resources in a beneficial way without causing damage to other. [70] The term "beneficial use" has been defined in the Act as "rational use", and can safely be assumed that the law prohibits wastes or misuse of the resource. [71] The Act furthermore requires that if any dispute arises in the utilization of the resource, the prescribed committee for resolving the dispute is required to consider, among others, whether or not the beneficial "use or misuse" has been made. [72] In the course of deliberations by the committee whether the use is within the scope of beneficial use or not, the committee furthermore is required to take into consideration of various factor including the impact it would have on the environment. [73] It can therefore be assumed that the use not only prohibits wastes, it also does not tolerate misuse of the resource.

B. Pollution Control

The Water Resources Act does not have provisions for control of pollution. It has left the task of formulating separate rules under the Act. [74] Such a regulation has not been frame yet. However, the Drinking water Regulations issued under the Water Resources Act has made certain provisions for prevention of pollution. It prohibits pollution of the source or constructing the structure of water supply system in such a way that might pollute water in the source. The Environment Protection Act also has made provision for framing of rules for the control of pollution of water resources. Not such rule, however, has been framed under the Act. [75] The Act only has provisions to prohibit disposal of sound, heat, radioactive rays and wastes from any mechanical device, industrial enterprise contrary to the prescribed standard. [76] Under the Act few standards including the emission level of vehicles have been framed.

C. Water Quality

The Water Resources Act requires the government to fix the quality standard of water resources for various uses. Section 18 of the Act reads as under:

"His Majesty's Government may, by notifying in the official gazette, fix necessary standards for different uses of water resources."

Anybody who wants to utilize water resources he or she is obliged to maintain the standard. Such a rule fixing the standard, however, has not yet been issued. The Act also authorizes the government to prescribe the pollution tolerance limit of water resources.[78] The Act prohibits discharge of any litter, industrial wastes, poison, chemical or toxicant in excess or the standard set by the government. Such an act is punishable under the law. The government, however, has not

yet issued notice fixing the tolerance limit of water Supply Regulation and the Irrigation Regulation also have provisions for ensuring the quality of water supplied to the consumers.

10 LEGISLATION ON UNDERGROUND WATERS

Water resources is defined as water that is available in the form of surface water, underground water or water in whatsoever form. [79] Since the ownership of water resources is vested in the State, and no one is entitled to utilize it without obtaining a license under the Water Resources Act. However, certain uses have been excluded from the regime of license including the domestic use and for irrigating one's own land. There is no specific rule governing underground waters. It is understood that by the token of the above rule, the use of ground water for domestic use and for irrigating one's own land does not require a prior permit. The Government in the coordination of UNDP has already drafted Ground Water Regulations. But it is still to pass by the cabinet.

11 CONTROL AND PROTECTION OF WATERWORKS AND STRUCTURES

A. Public Works

The construction, operation and maintenance including the security of the structure of water resources works are the responsibility of the concerned department or public utilities. The departments include Water Supply and Sewerage and Irrigation, and the Public utilities include Nepal Water Supply Corporation and Nepal Electricity Authority. In addition to the above agencies, water user's associations are responsible for general maintenance and rehabilitation of water supply and irrigation facilities handed over by the government for operation by such associations. The irrigation Regulations has made detailed provisions for the security and proper operation of irrigation facilities. [80] Under this provision the concerned authority is authorized to restrict entry into the area, prohibit inflicting damage to the structure or replacing anything relating to the structure, among other things.

B. Private Works

On the request of the person or a corporate entity the government, if it deems necessary, may make necessary arrangement for the security of the structure related to the utilization of water resources. The cost incurred on account of this is to be borne by the concerned person or the corporate body.[81] So far as the hydropower structure is concerned, the Electricity Act has made similar legal provision [82]

PROTECTED AREAS

Some areas that are important from the point of view of natural heritage or aesthetic beauty can be designated as protected areas under various laws where certain restrictions with regard to the use of water resources may be imposed. The Environment protection Act can designate certain areas as Environment Protection Area. Section 10 of the Environmental Protection Act, 2053 has stipulated:

"His Majesty's Government may declare any area as environment protection area considered as very important from the point of view of environment protection such as natural resources, beautiful or rare wildlife, biodiversity, plant, places of historical and cultural importance notifying in the gazette."

Where such areas have been designated as protected area, certain restrictions or prohibitions can be imposed under the Environment Protection Regulations. In such case use of electric current any kind of harmful plant based materials or chemicals in the rivers, streams water fountains, rivulets, lakes, ponds, reservoir of other sources of water are prohibited under Aquatic Lives Protection Act, 1960 (2049). [84]

Similarly, protected areas in connection with the control and prevention of the harmful effects of water as well as soil and water conservation can be designated under various other legislations. Under the Soil and Water Conservation Act, the government may designate certain area as protected Drainage Area. [85] With the authority provided by this provision, certain protection measures including construction of dams, check dams, embankments, drainage and diversion channels, retaining walls and similar other structures can be undertaken.[86] Within the protected area where there is danger of flood and soil erosion, the water conservation officer can prohibit certain activities in the land without his permission.[87]

12 GOVERNMENT WATER RESOURCES INSTITUTIONS AND ADMINISTRATION

A. Coordination-Level Institutions

Several ministries and agencies have responsibilities for the development and conservation of water resources. These ministries and agencies have been entrusted with sectoral functions relating to water under various acts of Parliament. Apart from the ministries, a number of institutions have been given planning and coordination functions through executive orders. These institutions include National Water Resources Development Council and Water and Energy Commission. The Environment Protection Council has been constituted under the Environment Protection Act.

The National Development Council (NDC) is a high level policy and planning body. The Prime Minister chairs the Council. Its membership is drawn from various walks of life including political circle, social workers, technocrats and bureaucrats. Its mandate is to guide the National Planning Commission on matters of Policy and Periodic plans. It is a forum where opinions of people about the plan and development projects are expressed.

The Prime Minister also chairs the National Planning Commission (NPC). Its membership includes one Vice-Chairman and five members, all technocrats. It is a planning body with an overall function of formulating periodic and annual plans and oversees their implementation. With a view to formulate development budget, the NPC estimates availability of the resources and allocates to different sectors. The sectoral ministries, in turn, prepare and integrate the budget with inputs from field and other offices through a decentralized planning process. The budget thus prepared is presented before a joint committee comprised of the Budget Division of the Ministry of Finance and the Secretariat of the NPC for discussion.

The National Water Resources Development Council (the NWRDC) is an institution of recent origin. It was constituted in April 1993 for wider participation of the cross section of people for an open discussion on issues of national importance. It is a high-level water resources policy and coordination institution chaired by the Prime Minister himself. The membership of the Council is broad-based with representatives from political parties and includes leader of the party in opposition, and people from outside the government. It is a political forum for discussion on national issues relating to water resources with a view to building national consensus. The Water and Energy Commission Secretariat functions as its Secretariat. The mandates of the council include.

- ❖ Contribute to creating a congenial environment for national consensus on the development and utilization of water resources to suit the development needs of the country.
- ❖ Decide on national water resources policy with a view to maximizing the benefits and in the national interest.

- ❖ Determine policy foundations necessary for speedy and sustainable development of water resources.
- ❖ Identify the basis for coordination between various sectors and agencies.
- ❖ Issue directives to the government for enhancing national international understanding on water resources development.

The procedural rules of the Council provide for the Council to meet at least once a year. It also requires the concerned agencies and officials to provide progress and evaluation reports, monitoring reports of development projects relating to water resources and other relevant information for consideration of the council. The rules also require the member-secretary to monitor implementation of decisions.

The Water and Energy Commission (the WEC) was established through an executive order in 1976. The Minister of water Resources chairs the commission. It was reconstituted in January 1999 with wider representation, and includes secretaries of 11 ministries, and five members from outside the government. The functions of the Commission are as follow:

- ❖ To review and cause to review multipurpose, large and medium scale water resources projects and recommend for their implementation.
- ❖ To formulate and cause to formulate policy and strategy for conducting study, research, survey and analysis with regard to various aspects of water resources and energy development in accordance with the priority and aim of the government.
- ❖ To analyze and cause to analyze bilateral and multilateral projects relating to water resources development and analyze such projects.
- ❖ To establish and cause to establish coordination between national and sectoral policies relating to water resources and energy.

The Water and Energy Commission Secretariat (the WECS) was established to provide technical and administrative support to the WEC and carry out its decisions. It also serves as the secretariat of the NWRDC. The government has recently designated the WECS as national water planning unit.

The Environment Protection Council (the EPC) was constituted under the chairmanship of the Prime Minister in October 1992. The membership of the Council includes members of the Council of Ministers related with environment, representatives of political parties, ex-officio members and seven experts. The functions of ht Council are to provide policy guidelines, advice to the government and to maintain coordination between various agencies of the government related with the management and protection of the environment.

B. Policy Level Institutions

The Ministry of Water Resources (the MOWR) is responsible for formulation of policy, plans and programmes relating to irrigation and electricity sub-sectors. It is responsible for implementing and enforcing the legal and regulatory provisions of Water Resources Act and Electricity Act. It grants license for survey, Generation and distribution of electricity. Detailed responsibilities include formulation of policies and plans for the development management and conservation of water resources; promotion, construction, operation and maintenance of multipurpose projects; development of human resources; promotion of private sector in the development of electric power; and negotiate and conclude bilateral and multilateral agreements on utilization of water resources.

The Ministry of Physical Planning and Works (the MOPPW) has the mandate for developing policy, plans and programmes relating to water supply and sanitation, among other thing. It is responsible for fixing the quality standard of water supply for domestic and other uses.

The Ministry of Science and Technology (the MOST) is responsible for carrying out research on energy including alternative energy. The Department of Hydrology and Meteorology (the DOHM), which functions under the Ministry is responsible for collection, processing and publication of hydrological and climatologically data crucial for the planning and development of water resources and agriculture.

The Ministry of Forest and Soil Conservation (MOFSC) administers the regulatory mechanisms of the Forestry Act, 1992 and the Soil and Watershed Conservation Act, 1982 through the concerned departments under the Ministry. Is responsible for the development, management and protection of watersheds.

The jurisdiction of the Ministry of Local Development (the MOLD) is to oversee implementation of local development programmes in the water supply and irrigation sub-sectors at the local level. Also, it looks after the interests of local institutions, and it is the liaison ministry for local bodies.

The Ministry of Population and Environment (the MOPE) assumes a comprehensive role in the management and conservation of the environment under the Environment Protection Act, 2053 (1996AD). The Ministry is responsible for setting standards of water quality and industrial effluents, among others. It requires water projects to undergo Initial Environmental Examination (IEE) and Environmental Impact Assessment (EIA) depending upon the size and scope of the project to ensure that the project will not substantially affect the environment. Since the MOPE has been revoked by HMG by the executive orders the responsibilities of this Ministry have been shifted to the Ministry of Science and Technology since then.

C. Implementation Level institutions

The Department of Irrigation (the DOI) under the Ministry of Water Resources is responsible for the development and management of surface and groundwater. The functions of the Department

are (a) planning, design and implementation of major and minor irrigation systems; and (b) sustained operation and management of the completed systems. The Department also plays a major role in formulating irrigation policy.

Department of Electricity Development (the DOED), previously Electricity Development Centre (the EDC) assists the Ministry in the regulation of power sub-sector including licensing, promotion of private sector, inspection and quality control, study of river basins, conduct feasibility studies and help select projects for private sector financing and development.

The Department of Water Supply and Sanitation (the DWSS) is the lead implementing agency in water supply sub-sector. A Director General heads the department The DWSS is responsible for all aural water supply and sanitation projects. It is also responsible for 23 urban water supply systems, which do not fall within the jurisdiction of the Nepal Water Supply Corporation. Its mandate is to formulate plans and programmes for the development of this sub-sector.

The Department of Hydrology and meteorology (DOHM) has been placed under the Ministry of Science and Technology. The regional offices have been patterned along Nepal's major river basins, Kosi Basin, Narayani Basin and Karnali (including West Rapti) Basin. It also has a separate section on Bagmati Basin. The department provides basic information about the flow of rivers in the country. The collection, analysis and publication of hydrological and meteorological data are vital to planning for the development of water resources.

The Department of Forest and the Department of Soil Conservation have the responsibility of implementing the policy and programmes relating to development and conservation of forests and soil conservation. The latter department has authority to prohibit blocking, diverting or storing water of any river or streams by any means or for any purpose in the protected watershed area without its permission.

Regional Directorates: The DOI and DWSS have regional directorates in all five-development regions. These directorates, as operational-level agencies, exercise basically a coordinating role and have limited authority of a departmental head. These directorates coordinate the activities of district offices within the region and serve as quality control agencies for the department at the centre. Generally they operate under delegated authority from the Director General. The DOHM maintains regional offices on the pattern of river basins. The NEA has regional offices (eastern, Central and Western) that more or less correspond to three river basins of the country.

District Offices: The DOI and DWSS all have district offices in each of the 75 districts of the country. These offices are the main operation-level offices. These offices operate the sanctioned budget for their respective districts. The NEA and NWSC have field-level offices in the districts where they have service delivery activities.

D. User's Level Institutions

Water User's Associations: A large number of water user's associations are also engaged in the management of water supply systems and irrigation networks at the local level. Following the government's strategy of involving the beneficiaries and the people for planning, implementation, management and operation of water resources projects, the institutional mechanisms of water user's association have gained popularity. Various provisions in the law have been made for the constitution and operation of these organizations. The government's efforts have been to support and enhance their capacity to take over the responsibility from the government agencies. These organizations are already taking over the functions of the government agencies for service delivery at the local level.

Considerable attention is being devoted to community-based governance because of increasing recognition that in many instances it performs better than government centered approaches. It performs better because local users possess superior time and place information about the resources and how their actions affect the source. Local users, in designing rules of access and of use, can draw upon this information as well as their understanding of the social setting to better match rules to circumstances. Also, locally designed rules are viewed as legitimate and are more likely to be followed than rules that are imposed by outsiders. Well-designed rules that are followed produce superior performance. Coordination requires rules, rules, to be effective, requires commitments to them.

E. Regulatory Institutions

As there are various community organizations, NGOs and the private sector working in producing goods and service delivery, it has become necessary on the part of the government to provide for an appropriate institutional mechanism for their regulation. The purpose of regulation, however, is not to put restriction. Regulation needs to encourage or promote competition for better service and its sustained use.

The Water Resources Act, 1992 and the related regulations provide for a set of instruments for regulation of the use of water. As the ownership of water resources is vested on the government, the use of water is regulated through a system of permits. A system of license has been introduced. The District Water Resources Committee in each of the 75 districts is empowered to grant license for their utilization. [88] Domestic uses have been put outside the domain of licensing for practical reasons. The Committee is chaired by the Chief District Officer and includes members from various district-level sectoral offices. They include district-level offices of Committee also includes representative from the District Development Committee and the Local Development Officer is member –secretary. The office of the Local Development Officer is designated as the secretariat of the Committee. The Water Resources regulations also provide for a joint meeting of two or more district committees if the related use extends beyond the jurisdiction of one district. Similarly, the Secretary of the MOWR grants permits for survey,

generation and distribution of hydropower. In this case, the DOED processes the application for a request for license.

The WRA and the regulations under the Act provide for dispute resolution mechanisms. A Water Resources Utilization Investigation Committee at the national level has been provided, the membership of which consists of a representative of the MOWR as chairman and one representative each from the concerned DDC and the regional office of the National Planning Commission Secretariat. [89] If the dispute is related with two or more districts, one representative from each of the concerned DDCs will be the member of the Committee. The Regulations for the guidance of the Committee detailed factors to be considered while deciding on the dispute.

The Water Supply Regulations under the WRA, on the other hand, provide for two committees for the resolution of the dispute, one for water users' association and the other for individuals. [90] The committee is called Water Source Dispute Resolution Committee. The Committee for water users' association is consists of the DDC chairman as Chairman and representative of the District Irrigation Office, Administrative Officer of the District Administration Office as member and the Chief of the District Water Supply Office as member Secretary. The Committee to decide on the dispute relating to water supply systems operated by individuals consists of a member nominated by the government as Chairman and one representative each from the MOPPW and the MOWR and Chief of the District Water Supply Office as member-secretary. The Electricity Act Provides for the constitution of a Tariff Fixation Commission [91] In exercise of the powers given by the Act, the Government has framed the Electricity Tariff Fixation Rules, 1993. The Function and the mandate of the Electricity Tariff Fixation Commission (the ETFC) are to fix the tariff of electricity and other fees. The Commission has power to review the tariff fixed by it from time to time. The membership of the commission consist of a representative of HMG and other members include and economist and five others from among the agencies relating to generation, transmission and distribution and the consumer. [92] The tariff is fixed taking into consideration of various factors including the rate of depreciation, return for the investment, royalty, operation cost and the consumer price index. The tariff is revised as and when necessary.

13 AUTONOMOUS AND SEMI-AUTONOMOUS AGENCIES

A. Nepal Electricity Authority

Nepal Electricity Authority (NEA) is a public corporation with the franchise for power generation, transmission and distribution throughout Nepal and engages in power exchange with India. [93] It is now required to work with private sector entities. The Minister of Water Resources chairs the Board of the NEA.

NEA is a vertically integrated utility with the responsibility for generation, transmission and distribution of electricity including the construction and maintenance of necessary infrastructure facilities. The NEA is the single buyer and is also a single largest seller.

B. Nepal Water Supply corporation

The Nepal Water Supply Corporation (the NWSC) has been established under the Nepal Water Supply Corporation Act, 1990 (2046). The Act provides for the constitution of a governing Board with a person appointed as Chairman by the Government. [94] Generally, the Secretary of the MOPPW chairs the Board. The General Manager is the operation head of the Corporation. The jurisdiction of the NWSC covers three urban centers of the Kathmandu Valley. Other urban centres under its jurisdiction include Biratnagar, Dharan, Janakpur, Birgunj, Hetauda, Pokhara, Bhairahawa, Butwal and Nepalgunj. The NWSC Act provides the Corporation with the mandate to plan construct and operate water supply systems under its jurisdiction.

The Water Supply Corporation Act, 1990 has been amended in 2005 through an Ordinance published in the official Gazette. The amendment has introduced a concept of 'Service System' in water supply.

According to Section 2 of the Ordinance 'Service System' means:

"Any pond made for providing drinking water service, water processing plant joined in such pond, any pipe joined for water supply or any plant for processing polluted water, any drainage system to discharge wastages, any other machinery or structures joined for the purpose of doing the work of the same nature and the word may also denote to any houses or land related to the water supply or drainage discharge system."

Section 5 of the said Ordinance has inserted Sec 5b in the Act, which has allowed the Corporation to hand over any service system to any other institutions for the purpose of proper management of the service system. This has privatized the service system. In such case the entire management of supply system including maintenance, conservation, operation and continuation is vested in such institution.

C. Drinking Water Management Board

The Drinking Water Management Board Ordinance, 2005, has established Drinking Water Management Board. Respective Mayor of each geographical area of the Board heads the Executive Committee of the Board under this Ordinance. The main function of the Board is, including others, to effectively and properly manage and operate any service system or service of water supply and drainage system within respective Municipality of the jurisdiction as handed over by the government with close coordination of the Municipality. The constitution of the Board is limited within the Municipality area under this Ordinance. It has excluded all village areas. The government fixes the geographical jurisdiction of the Board by notifying in the gazette under Section 5 of the Ordinance. Under Section 8 of the Ordinance, the Board may operate the service system by its own or may cause to operate, required, by any other service-provider granting license to or by entering into an agreement with such service provider.

D. Local Government Bodies

Local government bodies include District Development Offices (DDCs) Village Development Committees (VDCs) and municipalities. They are spread all over the country. These local bodies look after development and management of projects and service delivery at the local level. Under the Local Self-Governance Act, 1999, they are expected to take over the responsibility of the district-level offices of sectoral ministries gradually as they develop their capacity to assume the responsibility.

With the objective of developing local authorities with necessary powers in keeping with the principle decentralization, the Local Self-Governance Act (LSGA) has been enacted to promote "institutional development of local bodies capable of bearing responsibility and power at the local level as is necessary to formulate and carry out plans." The Act has vested the local bodies with a wide range of powers and functions concerning local development activities in various sectors including water resources. The Village Development Committees (VDCs) have powers to prepare, implement and operate drinking water schemes in the villages. Similar functions or responsibilities concerning irrigation and hydropower development have been given to local bodies.

14 WATER-USE DISPUTES SETTLEMENT

Disputes over use and management of natural resources are common in Nepal and guided by socio-political, cultural and legal aspects in society. There are vast systems of dispute settlements in the community level. Farmer's strategies and procurers, role of communication and facilitation, external organization, power-relations, culture and ownership issues are common influencing the negotiation.

A new dispute settlement mechanism has been introduced under Drinking Water Management Board Ordinance, 2005 and Drinking Water Rate Fixation Ordinance, 2005. Sections 6 (1) of the DWMBO empowers the Drinking Water Management Board to hear the injury of the consumers arising out of the services provided by the service-provider and provide appropriate remedy that of. Likewise, Section 15 of the DWRFO empowers the Commission to hear the case if any consumer is not satisfied with the services provided by the service-provider. This Section further empowers

the Commission to issue necessary direction against the service-provider in this matter. But these provisions are still in the test of application.

With the growth of the population and the development of the multiple uses and benefits of water as well as the growth in demand, especially for irrigation, issues and disputes relating to water were raised from time to time in different parts of the country. Basically, such disputes are settled in the community level using different alternative dispute resolution techniques. When the disputes could not be settled in the community level the cases are brought to the court system for formal settlement. Despite this fact, there are very few cases, which have reached in the Supreme Court of Nepal. Few cases are referred here to know the trend of the court settlement system in Nepal.

In *Yogeshwor Rajure vs. DJC Dang and others*, NKP 2045 p. 509, a writ was filed on the ground that the respondents encroached on their land of easement through which water flowed and converted it into a farmland. Prior to filing the writ petition in the Supreme Court, the Village Judicial Committee had ruled the action of the respondents unlawful. Thereafter, an appeal was filed with the District Judicial Committee, which refused to hear the appeal on the ground of lack of jurisdiction as the issue in dispute also involved entitlement of landed property. The Supreme Court held that DJC is authorized body to hear appeals against the decisions of the VJC and quashed the DJC'S decision.

In *Dharma Ratna Sinurkar vs. Suryamuni Sakya and others*, NKP 2044, P. 636, a writ petition was filed on the ground that Kathmandu Municipality had decided to shed wastewater in a drain constructed through the petitioner's land. The petitioner claimed that the Municipality had no legal authority to decide issues relating to landed property. The Municipality contended that the Municipality should resolve issues relating to drain and it had performed its task in accordance with the law.

The Supreme Court held that the Municipality is empowered to resolve disputes relation to drainage and as the Municipality, in the present case, had decided only on the issue of the drainage, the action of the Municipality was valid.

In *Lalit Bdr. Rimal vs. Nara Bdr. Rimal and Others*, NKP, 2043, P. 517, a writ petition was filed in the Supreme Court on the ground that the defendant had diverted a canal to his land, which made the petitioner's land dry. The case was at first filed with the local VJC but the VJC did not agree with the claim. An appeal against the decision was filed in the DJC, which in turn quashed the earlier decision and established the petitioner's claim. The defendant filed a writ in the Supreme Court contending that the DJC did not allow him the opportunity of explanation, which was in violation of the principle of natural justice. The respondent contended that the decision made by the DJC under a statutory authority should be held valid.

The Supreme Court held that opportunity should be given to the disputing parties to present and defend their cases failure of which means the violation of the principle of natural justice under Section 202 of the chapter of Court Procedures of National Code. Hence, the decision of the DJC was held unlawful. This decision established the principle that the consultation with the disputing parties is compulsory.

In *Ramesh Shrestha vs. Dhananjaya Prasad Acharya*, NKP, 2044 P. 59, an Injunction petition was filed in the Koshi Zonal Court on the ground that the Plaintiff had been asked by the District Panchayat to pay levies for the extraction of sand and stones from the Koshi River. The Zonal Court held that since the work was done under a bilateral agreement between Nepal and India, the District Panchayat had no authority to charge a levy. The chairman of the District Panchayat filed an appeal in the Supreme Court against the decision. The respondent claimed that he did not have to pay any local levy or charge because he was supplying the stones and sand under an agreement reached between the two governments.

The Supreme Court held that the respondent is simply a contractor authorized to carry stones from the Koshi, the main parties being the Government of India and Nepal. Therefore, the District Panchayat cannot levy tax or fees under the district Panchayat Act.

In *Tej Maya Shakya vs. Govinda Lal Ranjitakar and others*, NKP, 2044, P. 768, a writ petition was filed on the ground that Kathmandu Municipality had not given permission to build a house on the ground that the proposed building site will encroach on a public drain. The person concerned disagreed with the Municipality's decision and filed a writ petition stating that the Municipality did not have the authority to deny him the permission because the drain was constructed in his private land. The Municipality contended that no individual could claim ownership of the drain because it is a public property made for public use. Therefore, the petitioner should not be allowed to make a house on the drain site.

The Supreme Court held that although the drain was located in the petitioner's private property he cannot claim personal right over it and must give access to the public. Hence, the petition was dismissed.

In *Saukhat Ansari & Others vs. Jaleswor Nagar Panchayat and Others*, NKP 2046-p. 987, a writ petition was filed against a Jaleswar Municipality, which claimed that the pond adjoining the petitioner's house was its property. The petitioner claimed that he should be regarded as the owner of the pond because he had been paying land tax for it. The Municipality contended that as per the Municipality Act, 1962, it is the owner of the pond and urged that the court to dismiss the writ petition.

The Supreme Court, upholding the claim of the Municipality, ruled that the pond in dispute is the property of the municipality because ownership right of the pond was not claimed by anyone.

In *Ram Babu Prasad Yadav & Others vs. Bbulal Shah Teli and Others*, NKP, 2047, P.689, an injunction petition was sought on the ground that a pond constructed for religious purposes by the ancestors of the petitioner was claimed by the Village Panchayat as its property as per the provisions of the Village Panchayat Act. The defendant refuted the petitioner's claim and contended that the disputed pond was the Village Panchayat's property.

The Narayani Zonal Court dismissed the petition stating that an order for injunction could not be issued if it raised right and entitlement issues.

The Supreme Court upheld that Zonal Court decision which ruled that the Village Panchayat had no authority to claim ownership right over the private pond only on a ground that it is located within the territory of the Village Panchayat.

In *Kanshi Thakur Bhumihaar vs. Hiya Shani Malaha & Others*, NKP, 2043, p. 941, A dispute arose when a lake, owned by Ram Janaki temple, was given to the plaintiff for use and exploitation of its products under an agreement reached between the plaintiff and the Ram Janaki Temple Management Committee. The Village Panchayat then claimed the pond as its property and restrained the plaintiff from using it. The plaintiff filed a petition for injunction on the ground that the Village Panchayat violated his civil rights. The defendant denied the charge and urged for the dismissal of the claim because the Village Panchayat Act clearly stated that Village Panchayat's own ponds and lakes located within their territory.

The court held that the Village Panchayat cannot interfere in the property of the temple because the pond has been its property since time immemorial. The court further stated that apart from having sacred and religious values, it was the property of the temple on the basis of custom and tradition. Therefore, the Village Panchayat could not claim ownership of such properties falling within its jurisdiction merely on the basis of existing general legal provisions.

In *Shanta Devi Shrestha vs. Kathmandu Town Panchayat*, NKP, 2043, p. 636, a dispute arose when the petitioner constructed a boundary wall preventing access to others to the well in her land. The action resulted in shortage of drinking water for the people of that area. On receiving a complaint, Kathmandu Municipality pulled down the newly constructed wall and made the well accessible to the local people. A writ petition was filed with the Supreme Court against the Municipality's action. The respondent, the Municipality, contended that it had pulled down the wall to make drinking water available to people of that area.

The Supreme Court held the action of the municipality unlawful but ruled that the local people should be given access to the well because they had been dependent on it for a long time. The Supreme Court through this decision upheld use rights based on customary water use. Its decision allowed for the use of water located in someone's private property on the ground that they were long-term users.

In *Ram Bdr. Tamang & Others vs. Krishna Raj Lama*, NKP, 2043, P.465, a case was filed claiming that the defendant encroached upon the land and a pond located on the disputed land. The defendant denied the charge.

The Supreme Court held that the encroachment of the land by the defendant is unlawful, but at the same time, it allowed both the parties to use the water in the pond as per their convenience because they had been jointly using it for a longtime. The Supreme Court upheld this principle on the basis of customary right of water by both the parties.

In *Ak Bdr. Maskey and Others vs. Punaram Dhami*, NKP, 2039, the petitioner filed a case in the Pyuthan District Court requesting that a) the defendant pay him compensation for damages to the wooden pipes he had installed to supply water to his canal and b) to establish his rights to use the canal water. The defendant denied the allegations.

The Pyuthan District Court ordered the defendant to pay compensation for the damage of the pipes. The Mid Western Regional Court held that if the new canal has disturbed the old one, the claim should be entertained. The Supreme Court held that all the farmers have equal right to use the disputed canal water. They can use the water as done traditionally and customarily, i.e., following the turn-by-turn rule, which they themselves had made. They may face legal obligations if they violate this rule and deny some farmers access to water.

In *Tanakpur* case having national and international concern, the Supreme Court of Nepal observed Article 126 of the Constitution of the Kingdom of Nepal and different state power under it with regard to holding natural resources of the Kingdom.

In this case among other things, in December 1991 the government of Nepal and the government of India entered into an agreement, explained as a mere 'understanding' and not a 'treaty' that would have to be presented before Parliament. This understanding allowed India the use of 577 m of Nepali territory to complete the construction of the left afflux bund of the Tanakpur Barrage. Nepal was to receive 'free of cost' 10 million units of electricity as well as 150 cusecs of water for irrigation.

The details of the understanding that began to emerge after GP Koirala, the Prime Minister of Nepal of that time, returned to Kathmandu after his visit to Delhi raised a lot of suspicion and hackles.

On December 17, 1991 public interest advocate Bal Krishna Neupane filed a writ in the Supreme Court of Nepal challenging this understanding and appealing to the court to have it declared a treaty required parliamentary ratification by a two-thirds majority as per Article 126(2) of the Constitution of the Kingdom of Nepal, 1990. On March 11, 1991, Prime Minister Girija Prasad Koirala presented a written reply to the Supreme Court defending his government's position stating that it was a mere understanding but not a treaty requiring Parliament's approval.

In the mean time all-party special committee of the Parliament was formed to analyze the matter, which held extensive meetings and invited external specialists as well as government experts to the hearing. It was, however, unable to reach a consensus as sharp divisions remained regarding the actions of the government and the interpretations of the constitutional provision. Instead of a single document, the committee presented three different reports to the Lower House of Parliament on September 9, 1992; eight communist factions stated that the Tanakpur 'understanding' signed by the Prime Minister Koirala was a treaty, which could only be implemented after ratification by a two-thirds majority in the Parliament.

Hearing of both parties on December 15, 1992, the Supreme Court of Nepal decided that the Tanakpur agreement was indeed a treaty and not just an 'understanding', and that it would have to be presented to the parliament for ratification as per Article 126 of the Constitution of the Kingdom of Nepal. The Court, however, failed to prove a ruling on the second point of the petitioner, which was to require parliamentary ratification by a two-third majority as per Clause (2) of Article 126. It was left to the parliament to decide whether the ratification should be by a simple majority or, if a two-thirds majority deemed the matter "pervasive, serious and long-term impact".

A month after the Supreme Court decision, the government constituted a Committee (Baral Commission, 1993) to evaluate the impact of the agreement. This commission, after a deep analysis and observation on different six criteria, this commission concluded the agreement of a simple nature and not a "pervasive, serious and long-term" one.

In *Ram Saran Nagarkoti & Others vs. Ichangu Drinking Water, Food and Beverages Pvt. Ltd. and others*, an injunction Petition was filed in the Appellate Court of Patan in *Asad 8, 2062 (2005)*, on ground that the defendant's (three water selling companies) action of boring and well digging dried up the *Panch Dhara* commonly used by 562 local households as their customary right for drinking, and other domestic uses.

In this case the petitioners claimed that the disputed local water resource is only the resources that is being use by the local people of ward no 4,5,6 of the Inchangu VDC and ward no 8 and 9 of Sitapaila VDC adjoining Kathmandu Metropolitan City in its northern side and armed police forced located in the Sitapaila area from time memorable. The defendant started their water business by boring and digging new well nearby the tap area using high-powered machines resulting to drying up the tap. They also claimed that the assailants have not acquired the necessary license under Water Resources Act for the utilization of the water, which is treated the sole property of the government under this Act. Even the use shall be beneficial without hampering the customary water-use right of the local people.

The defendant defended that they are using their own land plot no.622 of Sitapaila VDC Ward no. 9(c) as owned by themselves and Water Resources Act allows the owner of the land to utilize the resources lying within the private land. Hence, the petition merits to be quashed.

In this case the Appellate Court held the defendants' action illegal and ordered to immediately stop exploiting the water resources as used to be. The court observed that these companies have not taken the approval from the District Water Resources Committee constituted by the WRA; the ownership of the water resources, be the stream or ground water, vests on the government under WRA; the use pattern of the defendant is not exempted by the WRA; the local water resources have been dried due to the activities of the service-provider which can not be allowed; the defendant can not have right to use their property effecting to dry the local peoples' resources; and the defendants have not also obtained the license from the appropriated authority to use the water resources.

15 FINANCIAL ASPECTS

A. Pricing of Water

Subject to a valid license for utilization of water resources [95] a person or a corporate body is free to develop and extend the services to the consumers against payment of charges or fees. The licensee may make services available to any person on the basis of terms and conditions mutually agreed and realize the charge in consideration of such services rendered. [96] In the case where the services generated by the government is made available to any person, the service charge may be fixed as prescribed and realized in consideration of such services rendered to them. [97] A provision has been made in the Water Resources Regulations for constituting a three-member committee for determining the rate of the fees to be charged by projects developed by the government. [98] The committee, while determining the rate of the charges, is required to take into consideration of factors such as the rate of depreciation, return from the investment, the mode of operation of the facility, and changes in the consumer price index.

The water Supply Regulations [99] and the Irrigation Regulations [100] also provide for the constitution of service fees fixation committee at the local level. These committees are composed of representatives from the concerned department together with the representative of the concerned user's group.

Drinking Water Rate Fixation Commission Ordinance, 2005 has constituted a Commission for fixing reasonable rate in drinking water and sanitation services and ensuring quality drinking water and sanitation services to all the consumers. A three-member technical committee has been formed under Section 3 of the Ordinance for this purpose. The main function of the committee is to fix the rate of fees to be charged by the service-provider to the consumers and monitor the quality of the services provided by the service-provider and maintain the same. The other major function of the Committee is to settle the disputes arising out of service agreement between the service-provider and the consumer. 101 Section 15 of the Ordinance provided that any consumer not satisfied with the services provided by the service-provider may file a petition in the Committee which in the process may issue necessary directions against he service-provider to maintain the quality of the service.

The development of hydropower in the country is opened to the private sector for investment, foreign or domestic both. The license for generation, distribution and transmission may be given for a maximum period of 50 years. [101] The government guarantees the purchase of power produced by a private producer, domestic or foreign. The rate for the purchase of the power produced is decided by mutual agreement between the private producer and the Nepal Electricity Authority. However, the Electricity Act provides that the tariff to be charged to the consumer needs to be assessed by an independent agency. The government is required to constitute a Tariff Fixation Commission. The Commission again is required to fix the tariff and other charges on the basis of the rate of depreciation, reasonable profit, mode of operation of the plant, changes in the consumer's price index, royalty, among other things. [102] There is absence of similar provision for fixing the tariff in the case of water developed and supplied by the Nepal Water Supply

Corporation. The Corporation is authorized to fix the tariff for the water supplied to the consumer and sewerage service provided. [103]

B. Realization of Water Rates and Charges

It is the responsibility of the consumers to pay the charges fixed by the facility operator. On the failure to pay the service charge or fees levied the facility operator can stop the supply to the consumer. The Water Resources Act [104], the Electricity Act [105], The Water Supply Regulations [106], the Irrigation Regulations [107], authorize such action by the supplier. Similarly, the Nepal Electricity Authority Act [108] and the Nepal Water Supply Corporation act [109] authorize the concerned utility operator to stop the services on failure to pay the dues by the consumer. Under Section 13 of Drinking Water Management Ordinance, 2005 stipulates that the Commission constituted under the Ordinance may charge, from the service-provider, a prescribed fee not exceeding than two percent of the total fees charged by the service provider to the consumer. Similarly Section 16 of the Ordinance provides that the Commission may fine the service-provider up to Rs. 50000.00 in case if the service provider rises the charge more than the fixed rate, or does not apply the fixed rate or imposes discriminatory rates. These legislative provisions also authorize the service provider to realize the dues by initiating the process of auction of the property of such person.

16 IMPLEMENTATION AND ENFORCEMENT

In this section legal provision concerning protection of rights or interests in water resources, enforcement of water laws and regulations and penalties will be reviewed.

A. Protection of Water Rights and Interests

Water rights of the people and the community enjoyed by them before the enactment of Water Resources Act have been continued and safeguarded by the Act. The traditional rights have been left undisturbed. [110] The general course of redress under the law of the land or the Civil Code are available to the holder of rights or interests in water seek in redress from un-due interference from other users of water. They can exercise the right free of governmental interference. Water rights of the people cover both surface as well as groundwater.

B. Enforcement of Water Related Legislation and Regulations

The protection of water rights is further effected in connection with the compulsory acquisition of water rights by the government in accordance of the law. The further requires the holders of water rights affected be afforded an opportunity to be heard in the process of acquisition and be compensated for the loss of their rights or interests. [111]

C. Penalties

Penalties sanction most regulatory provisions related to the use and protection of water resources. A fine up to five thousand rupees can be imposed to a person who acts in contravention of the provisions of water resources Act or rules made under the Act and realize compensation if cause damage. A fine up to five thousand rupees can be imposed or close such activity if any person utilize the water resources without license. A person faces imprisonment up to ten years if the offence is serious that is, if a person is found to demolish, destroy or cause harm with mala fide intention to water resources structure related to its utilization, faces imprisonment up to ten years. Water authorities are also empowered to disconnect services if consumers fail to pay their utility bills. [112] A fine up to Rs. 50,000.00 can be imposed to a person incase he dismantles or destroys any construction, linkages, or infra-structure related with the service under Section 27 of the Drinking Water Management Board Ordinance, 2005. Likewise, up to Rs. 25,000.00 can be imposed against a person who pollutes the drinking water under the same Section. Water supply may be suspended for six months and compensation may be imposed against such service-receiver who is involved in stealing, dismantling or destroying the pipe joined in the service system under this Ordinance.