DISTRIBUTIVE JUSTICE IN THE DEVELOPMENT OF WATER RESOURCES: EXPERIENCE AND OPTION FROM NEPAL[1]

Upendra Gautam, CMS, GPO Box No. 10892, Kathmandu, Nepal
Phone: 977-1-482201/438894, E-mail: cmsug@cms.wlink.com.np
Laya Prasad Uprety, Tribhuvan University, Phone: 977-1-266432
Kirtipur, Kathmandu, Nepal

Synopsis

This paper attempts to examine the gaps and inequity in the existing water policies, laws and practices to address the issue of distributive justice. It proposes option/s to resolve the identified problem. It argues that like in any other development sectors, the sustainable development of water should be guided by the principle of distributive justice which rejects the exclusive right of a person or a group of persons to self-enrichment based on the appropriation of resources on which another person's/community's survival and well-being depend. The principle of social justice tries to balance individual rights to property along with social equity. It further argues that the stakes of poor people women and potential project affected persons, who constitute the primary target social groups (PTSGs), need to be integrated with water resources development and management programs. It explains a number of social issues related to poverty, gender, and resettlement to ensure distributive justice in water resources development. Analogously, the authors describe the impact of irrigation, hydropower, multipurpose, flood control project developments and rural water supply schemes on social groups. The authors conclude that since the majority of the members of the PTSGs are not benefited by the huge investment in water resources development, water resources investment to be sustainable needs to emphasize on social equity.

1.0 Distributive Justice as a Principle of Contemporary Development Paradigm

Distributive justice in the development of water resources has to be seen in a larger context of people-centered development. Development is a process by which the members of a society increase their personal and institutional capacities to mobilize and manage resources to produce sustainable and justly distributed improvements in their quality of life consistent with their own aspirations. This definition of development embodies the principles of justice, sustainability and inclusiveness. Distributive justice is one of the principles of contemporary people-centered development paradigm. Justice does not require equality of income, nor does it require that the productive to support the slothful. It does require, however, that all people have the means and opportunities to produce a minimum decent livelihood for themselves and their families. It rejects the right of one person or a group of persons to self-enrichment based on the appropriation of resources on which another person's or group of persons' survival and well being depend. The transformed society must give priority in the use of the earth's natural resources to assuring all people the opportunity for a decent human existence (Korten, 1992:4, 66). Under the contemporary development paradigm, the developmental practioners comprising policy makes should make the optimal efforts for ensuring sustainable access to water resources. Such an access implies three qualities: that the resource remains in sufficient quantity and quality; that the people can use it as needed or to the same extent as in the past, and that "fairness", or "equity", exists in regulations governing its use and distribution (Colfer, et.al. 2001). Equally important is the facet of intra-generational access to water resources. Hence, attempt should always be made to understand the causal links between access to resources and their sustainable management -- a long-term development goal. The different stakeholders of water resources development including the poor people, women and potential project-affected persons should be involved in the process right from the beginning of the project design to the implementation with the objective of ensuring the benefits equitably. All this is indicative of the fact that there can be sustainable water resources development only if distributive justice is ensured.

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2.0 Lack of Distributive Justice in the Development of Water Resources

Nepal is a country of agrarian poor that a low level of human development characterizes. Increasing scarcity of water and inequitable distribution of benefits accruing from the huge investment in harnessing water resources have heightened the need for a social perspective on water resources development in Nepal. The inequitable distribution of benefits from water projects has increased the gap between the commercial, center-based, minority who enjoy the project benefits and the rest of the population who witnesses the diversion of benefits (Gautam and Subedi, 2000). The limited access of the members of Primary Target Social Groups (PTSGs) to the water resources services indicates the challenge of integrating their stakes with planned objectives of water resources development and management if justifiable benefit distribution is to be achieved. This has become essential because the present so-called participatory approach has failed to ensure PTSGs' equitable access to benefits of water resources projects, even though members of these groups share the investment and establishment costs of resources the country borrows/mobilizes externally for the projects. For the purpose of distributive justice, the authors identify poor people, women, and potential Project Affected Persons (PAP) as the PTSGs that need to be integrated with the water resources development and management programs. Explicit inclusion of the PTSGs is an essential need.

3.0 Objectives of the Paper

The paper dwells on two specific objectives as follows:

- To examine the gaps and inequity of the existing water policies, laws and practices to address the issue of distributive justice in the regime of water resources development in Nepal; and
- To propose the option/s for addressing the issue of distributive justice for the sustainable development of water resources.

4.0 Social Setting of the Country

The characteristics of the social setting of Nepal include the following:

- The preliminary result of the 2001 census recorded population of the country as whopping 23.2 million with a growth rate of 2.27 percent per annum;
- The recent survey of National Planning Commission has shown that 38 percent of the total population of the country has been living below the poverty line;[2]
- Over half of all households survive on inadequate food intake;
- The average per capita income is US$ 250;
- The rate of underemployment and unemployment is 47 percent and 4.9 percent respectively;
- Four-fifths of the total population depends on agriculture as its primary source of income;
- Agriculture is women-intensive. Women contribute 50 to 80 percent of the total agricultural labor depending upon geographic and socio-economic conditions;
- Three out of four households in the rural areas have no access to toilet facilities;
- The national average literacy rate is 40 percent—54 percent for males and 25 percent for females; and
- Maternal mortality rate is 875 per 100,000 women aged between 15 and 49 years.
- Migration (legal & illegal) of the male youth, specifically in India and the Middle East has become a major source of remittance for the country, on one hand but on the other hand, it has also further increased the household chores and agricultural labor of the women

The prevailing socio-economic conditions have led the poor and women to suffer cultural exclusion and face barriers against the use and enhancement of their capabilities.

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[2] "The national averages mask dramatic disparities. The largest is certainly that between the bustling, urban Kathmandu Valley and the rest of Nepal - in effect, two separate and unequal countries. In one - around the capital, where around five percent of the population lives - the incidence of poverty is around four percent and illiteracy is 24 percent; in the other - the rest of the country - poverty is ten times as high and the chance of being literate almost three times lower," World Bank (1998), *Poverty in Nepal At the Turn of the Twenty-First Century*, Poverty Reduction and Economic Management Unit, South Asia Region, December.

5.0 Water Resources Services

Water projects have been a major recipient of financial resources. The Ninth Plan (1998/2002) has allocated about 39% of planned financial resources to water projects. Despite continuous large investment in water projects, their services have remained limited to a section of the population. Fifteen percent of the population has access to electricity. Three out of four households in the rural areas have no access to sanitary toilet facilities. Of the total population, 61 percent has access to water supply services. Irrigation service has reached only to about 40% of the agricultural land.

Water projects are not integrated with social development. Social accomplishment indicators are not included in the development of water projects. The huge investment in water projects, therefore, does not have much meaning for the people in general. Progress in water projects is measured on physical targets. This has rendered stakes of the PTSG's a peripheral priority. They are not represented in the prevailing system of water governance.

6.0 Cases of the Distribution of Benefits and Social Issues to be Considered for Equitable Distribution

As discussed earlier, the existing scenario is that there is a lack of distributive justice, specifically in the water resources sector. In this chapter, cases of such inequitable distribution of benefits and social issues they can alleviate such inequitable distribution are presented.

6.1 Cases Illustrating the Inequitable Distribution of Benefits from the Development of Water Resources

There are a myriad of cases, which explicitly illustrate that the development of water resources in Nepal has failed to provide the benefits to the members of PTSGs and protect their interest. A few cases in this regard have been presented below in boxes.

Box 6.1.1
The Trishuli Experience: Serving the Capital District

At the Trishuli Bazaar in Nuwakot district, located 70 km northwest of Kathmandu, a 21 MW hydropower plant was built in the mid-1960s. The plant was mostly built to provide power to Kathmandu Valley. No systematic information was available regarding water availability. Politicians and officials gave false assurances to the local people who have a major interest in the development irrigation. The Water Resources Ministry and Nepal Electricity Authority, a partly autonomous body under the Ministry, did not find it possible to divert one thousand liters per second of water for the development of irrigation in the area. Their only interest was in supplying power to the country's capital district.

Without the development of irrigation facilities, farmers cannot realize the full agricultural potential of their land. This results in low agricultural productivity and income. Frustrated by such a resultant inequity in sharing of water resources development benefits, farmers told the members of the irrigation feasibility study team that they would not hesitate to destroy the hydropower plant if experts would confirm that irrigation development is feasible in the area.

The government hydropower project has neither taken into consideration the needs of the local people nor the existing use of water or the customary water rights. The prevailing Water Resources Act 2049 (1992) fixes the priority of water use giving priority first to drinking water, second to irrigation, and third to hydropower. The Act also makes an extensive public use' provision whereby an existing use can be amended to take care of the larger interest of the people. Public accountability has remained dislocated and is very weak with respect to enforcement of the provisions laid down in the statutes.

Source: Upendra Gautam and Rajan Subedi, 2000.

Box 6.1.2
The Kali-Gandaki Experience: Need of Sustained Employment

The existing water policy and legal framework do not address the distribution of development benefits to the members of primary target social groups in a sustained manner. The local people from Kali-Gandaki 'A' 140 MW Hydropower Project area offer some insights into the needs that they expect the project to fulfil. In 1998 - 99, local people had done brisk business in renting out houses and selling of food items as the project had employed a larger number of construction laborers. But they are not very happy with these short-term gains. It was observed that they were more concerned to be engaged in some relatively sustained employment than the opportunities or 'bubbles' that the project had created for the time being in the area. The stakeholders echoed these concerns during a consultative meeting that was organized in the context of the formulation of the national water resources strategy.

Source: Upendra Gautam, 2000.

Box 6.1.3
Value of Land in Flood-Prone River Basin

Value that the people ascribe to agricultural land is very high. This is demonstrated in a case that they have filed with the Supreme Court against the construction of a dam in Hashandah village of Morang district. The people of the village fear that the dam being built on Bakaraha River by the Bakaraha Flood Control Project will inundate their agricultural land. The Bakaraha River has been changing its course in every ten years. However, the current practice is one of similar cash compensation rates for lost assets (e.g. land, houses, cowsheds, etc.) for Project Affected Families (PAFs) as well Severely Project Affected Families (SPAFs), especially for SPAFs who lose their entire land and house. It is not fair to treat PAFs and SPAFs equally. Land for land compensation needs to be provided to those who lost all of their productive assets, including housing as well.

A majority of stakeholders have identified the need for flood disaster prevention in flood prone areas in the Bagmati and Eastern Rapti River Basin. In a public hearing organized by Forum of Nepal Environment Journalists in Malangawa, headquarter of Sarlahi district; the stakeholders gave higher priority to flood management than irrigation. In their view, flood management was essential to protect agricultural land, the mainstay of their livelihood. For flood management, the support of the government was necessary, as flood management tasks were more international and affected by downstream and upstream water uses and water management practices. It was more complex and extensive than management of irrigation.

S*ource:* The Kathmandu Post, 3 January 2000 and *Samacharpatra*, 29 November 1999.

Box 6.1.4
The Jhirbhanjyang Experience: Denying the Access

While the project sees its implementation as enabling local people to get access to water supply and sanitation, local people see the project as an opportunity to open up social avenues. The water supply scheme was an opportunity for residents of Jhirbhanjyang to bask in bikas-locally perceived as a commodity in perennial short supply - in both senses of the term, metaphorical and literal. But while social avenues opened for themselves, it was also simultaneously closed for others. Not only did the Jhirbhanjyang people wrest away the waters of Shirunga from the residents of Shirunga, they also kept at bay demands of the people of Tallo Tole to get access to this water. The exclusion of the people of Tallo Tole, most of who are of 'low' caste, to the water supply schemes speaks of bikas converging with the ritual, social and economic basis of social stratification. As a consequence of project intervention, not only have the people of Tallo Tole continued to remain low in the caste hierarchy and poor in material means, they now have less bikas compared to the 'high' caste relatively affluent, and now more Bikasith Bahuns of Jhirbhanjyang. Thus bikas becomes one more criteria in social stratification - one that increasingly correlates with existing caste and class distinctions. And as such it further accentuates the distance between the 'high' and 'low' castes.

S*ource:* Sudhindra Sharma, 2001.

Lack of distributive justice in water project development has affected the relations in the society. A number of litigations and protests show this reality. Examples also include Melamchi water diversion into Kathmandu valley, water supply to Lalitpur from Sainbu and Pharping agricultural area and several flood control projects on India-Nepal border. In all these examples, priority of the project and the rural local people are conflicting so far the political motive and technical design of the project and

targeting of the project benefits are concerned. These water projects have increased the gap and inequity between groups of stakeholders.[3]

6.2 Social Issues to be Considered for the Distributive Justice in Water Resources Development

Poverty, gender imbalance and involuntary resettlement are identified as major social issues[4] which need to be considered to ensure distributive justice in water resources development. A brief analysis of each of them is provided below.

6.2.1 Poverty

The number of absolute poor has almost doubled during the past two decades (1977-96) from 4.9 to 9.5 million. The country's Human Development Index reflects dismal standard of living.[5] The country's poverty is reflected in the fact that 53 percent of children are suffering through various stages of malnutrition. Eighty six percent of the households in the rural areas do not have access to electricity. Sixty seven percent of the households in similar areas do not have access to safe piped water supply and sanitation facilities. Water supplied in the urban area is not safe either. Seventy to eighty percent of the people are marginal and small land operators who need to do continuous hard work even for a subsistence living. All this makes the people, especially the mothers and children, fatally vulnerable to various infections and diseases.

The country's variable ecological regions and diverse socio-economic conditions are not positively utilized to address the dietary needs of the poor. Water development and management have a strong relationship with land use and ownership pattern. Marginal, small and fragmented land holdings of an overwhelming majority of population ask for a water development technology that recognizes such socio-economic characteristic of the people. The potential offered by water resources, and the challenges posed by the widespread poverty in the country ask for those proven technologies that can provide fair integration of water resources development with the agricultural economy in a given social and ecological setting.

Public water agencies entrusted with the responsibility of developing water resources in the country have not shown the capacity that could identify, select and apply water technologies that are appropriate, poor-friendly and consistent with the country's ecological characteristics. The capacity of the water agencies is further weakened by the absence of research and development on appropriate, indigenous and adaptive technology. This has deprived the poor people from the benefits offered by the country's comparative advantage on water resources.

No national debate, however, has taken place to address the inter-related issue of poverty, malnutrition, land use and ownership pattern and appropriate technology. So far scale of water development has dominated the debates in water sector. The scale-centered debate (small vs. big) has created a "division" in the society. This division in the society has resulted in loss of opportunity (such as development of Arun III hydroelectric project) in the past. Continued absence of a recognized policy to address the divisive situation has only helped further externalize the division in the society.

Lack of PTSG's representation has eroded the legitimacy of public policy decision-making on water issues. This has particularly led to weaken the national capacity to plan and implement water projects according to the country's potential. The situation has become fragile by lack of an integrated water management (IWRM) capacity in the public, private, and NGO entities, which could help appreciate inter-relationship between poverty, malnutrition, land use and ownership and appropriate technology. Such a weak national situation has been advantageous to that section of commercialized group, which

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3 Upendra Gautam (2000), *Social Concerns, Review, Analysis and Options, Annex 15 in* WRSF Consortium, Water Resources Strategy, Water and Energy Commission Secretariat, Kathmandu.

4 Ibid.

5 Institute of Integrated Development Studies (1999), *Conceptual Framework of Vision for Water Resources Development in the GBM Region: Country Report: Nepal*, August, Kathmandu.

is quick in taking benefits from the division in the society.

The Ninth Plan has indicated its appreciation of the inter-related issue by recommending criteria on the adoption of appropriate technology. According to it, those water technologies that generate and raise employment should be preferred.

To realistically address the inter-related issue of poverty, nutrition, land use and ownership and appropriate technology, and to effectively implement the already existing policy and institutional measures, the following reforms should be introduced.

- Rainwater harvesting in the hills and shallow tubewell in Terai should be the priority area of investment for reliability of irrigation for increased production of nutritional food.
- Increase in the employment and assets of the PTSGs should be the key monitoring indicators to measure the success of investment in the priority area of water resources development;
- Integrated water resources management (IWRM) approach should reconcile competing uses of water by incorporating sanitation education and health concerns of the PTSGs. Extent of incorporation of sanitation education and health concerns of the PTSGs should be a criterion of successful application of IWRM; and
- Members of PTSGs should get representation in the state bodies that make decisions on water use and development priority.

6.2.2 Gender Imbalance

Women are the primary users of water whether it is for domestic or agricultural use. Despite this truism, women do not enjoy a rightful position in the water resources development and management. In Nepal, agriculture contributes to 40 percent of the Gross Domestic Production (GDP) and provides employment to 81 percent of the total population. Women contribute between 50 and 80 percent of the total agricultural labor depending on both geographical and socio-economic variations. The seasonal and longer term migration of men due to lack of supplementary source of income has made women's role always a central one in subsistence production, care and management of livestock; poultry and food processing. Water and energy resources are crucial for both crop production and livestock-raising and women in all areas of the country spend a considerable amount of time pursuing these activities. But women's formal participation in the planning and management of the community in general and that of water and energy sector in particular, is considered extremely low. In comparison to women's involvement in collecting water for human and animals use, the proportion of their participation in construction, repair and maintenance of drinking water and irrigation projects has been found to be lower than that of males. The irrigation policy of Nepal requires participation of at least 20 percent women users in all the executive units of the WUA. The data of the six Water Users Associations (WUAs) collected and analyzed by one of the authors shown that only 6.2 percent members of the executive committee are women (see **Table 1**).

Table 1
Distribution of the Members in the Executive Committee of the Water Users' Association by Gender in the Selected Districts

SN	System	Number of Functionaries		
		Male	Female	Total
1.	Kankai Irrigation System, Jhapa	889 (93.1%)	66 (6.9%)	955
2.	Sunsari-Morang Irrigation System	9176 (94.9%)	483 (5.1%)	9659
3.	Gandak West Irrigation System, Nawalparasi	1055 (87.3%)	154 (12.7%)	1209
4.	Sunrajraily Irrigation System, Kailali	12 (85.7%)	2 (14.3%)	14
5.	Asneri Irrigation System, Kailali	15 (93.7%)	1 (6.3%)	16
6.	Panchakanya Irrigation System, Chitwan	151 (78.7%)	41 (21.3%)	192
	Total	**11298 (93.8%)**	**747 (6.2%)**	**12045**

Note: Figures in Parentheses Indicate Percentages.
Source: Laya Prasad Uprety. 2001.

A number of factors are attributable to the low level of women participation in the WUA. These comprise the conservative cultural system (which disallows women to participate in the public domain), lack of land ownership right, illiteracy/lack of education, lack of gender sensitization among the men etc.

The discrimination caused by cultural and social values between men and women are reflected in the livelihood of women. Life expectancy for women (52.6 years), which is less by 2.78 of those for men (55.38), could be the outcome of the heavy burden of household work, year of constant child bearing and poor diet. Besides, even some of the existing legal provisions go against the welfare of women such as lack of legal provision against unwanted pregnancy, biased provision for divorce and most significantly, access to property rights. Biases against women labor and lack of decision-making power for spending money are some additional examples of discrimination between men and women.

To enable balanced mainstreaming of gender in water use, development and management, crosscutting policy and institutional reforms are essential. These reforms should include:

- Family members, irrespective of their sex, may own parental property. Exclusive right of the male members of the family to the parental property should be withdrawn. It should be the choice of the parents to transfer their property to any or all members of the family; [6]
- Each and every member in the family should have right to water. It should be the responsibility of the community to monitor and evaluate that women are able to exercise their water right; and
- The disaggregated indicators should be established and used to measure the extent balanced mainstreaming of gender is achieved in the society. These indicators may include: (i) percentage of women representation in the general and executive units of water management bodies; and (ii) provision of and actual delivery of water supply and sanitation, irrigation and water energy services that positively contribute to reduce women's mortality rate, increase her time to attend school, literacy and adult education classes, and participate in social mobilization process.

6.2.3 Involuntary Resettlement

A holistic development and management perspective on the involuntary resettlement is missing. Issue of resettlement has mostly meant problems of landless, squatters and flood or landslide-affected people to the policy makers and administrators. The Seventh Plan (1985-90) did not very much address the issue when it adopted a project approach as its working policy to solve the issue of resettlement. It assigned the responsibility of resettling the displaced to the concerned project authority. Each project authority has formulated project-wise policies and rehabilitation measures. The poor track record of the project authority in adequately and orderly resettling the displaced people has given the government a bad name in its resettlement efforts.

The government has time and again established commission to resolve the problem of landless and squatters. These commissions have never looked into the issue of the resettlement of the PAP. Similarly, the government has enacted several regulations. But these regulations do not address the human and social needs of the PAP. They are nature conservation-biased, and attempt to formally respond to the environmental blueprint of the donor that finances the water project.[7]

Lack of a comprehensive policy on development-affected resettlement has made implementation of many water projects very weak and unfair. The involuntary resettlement in the country has not obtained adequate attention at the regular policy level. Absence of a comprehensive resettlement policy has hindered the development of national institutional capacity to manage the resettlement issue reasonably, adequately and in an orderly manner.

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[6] Significance of such a provision has increased in the light of the accelerated legal and illegal migration of male youth from the country.

[7] New Era (1999), *Nepal Resettlement Policy and Practice*, Water and Energy Commission Secretariat, Asian Development Bank Regional Technical Assistance.

The Constitution of the Kingdom of Nepal, 1990 guarantees individual property right. The Water Resources Act (WRA) 1992 empowers the government to acquire persons' assets for the "extensive public use". The government needs to pay compensation to the concerned persons as prescribed on the basis of the market price. But the primary legal instrument for asset acquisition, that is, the Land Acquisition Act (LAA) 1977 is not consistent with the provision of the WRA. WRA compensates the PAP according to market price for the assets acquired by the government for the project. LAA does not provide distributive justice to PAP as it fails to restore their livelihood to a standard that is better than what they enjoyed prior to the project. In addition to this, it has also been found that the long delay in the acquisition of assets and paying of compensation usually make a water project unduly very expensive. This asks for some policy instrument that may enable the government to acquire people's assets before the implementation of the water project.

The following policy and institutional reforms, therefore, are required to manage the development-related resettlement issue.

- A comprehensive policy on involuntary resettlement needs to be formulated. The government should use the draft framework of this policy as proposed in the report on "Nepal Resettlement Policy and Practice, May, 1999";
- The policy should provide an enabling clause by which the government, on the basis of the feasibility study and detailed project report, can declare and delineate an area for implementation of a water project in future, and undertake resettlement of the persons to be affected by the project before the implementation of the project;
- All the existing government legislations and regulations should be fully amended to be consistent with the provisions of the policy;
- The resettlement policy should adapt the strategy options given in the later section of this paper so that the social concerns are legitimately reflected in;
- The implementation of the policy on involuntary resettlement should be coordinated and supervised by a government nucleus. This nucleus (small compact unit) should support the implementing authorities to build their capacity in resettlement processes and practices; and
- The resettlement works should be entrusted to qualified private sector agencies.

7.0 Social Impacts of Water Resources Development

The impact on the social groups due to irrigation, hydropower and multipurpose project developments provides more insightful knowledge into the social issues described above.

7.1 Irrigation

The standard way to measure irrigation development in the public sector is the extent of area (in ha.) covered by the irrigation infrastructure.

Social assessment study conducted on farmer-managed irrigation systems (FMISs) that were to be supported for improvement under Nepal Irrigation Sector Project (NISP) has reported that FMISs have caste/ethnic pluralism. Small and medium farmers who are owner-operators sustain them and sanctions are imposed against violators of rules. Women's participation is low due to the existence of patriarchal value system. Farmers want assistance from external agencies for system improvement. They are unaware of policy laws, regulations and plan to irrigation development. They want institutional support and advice in the area of sustainable know-how.

Irrigation systems are common property resource systems (CPRSs). CPRS mean that the community denies to the state or any individual the right to interfere with any person's exercise of collectively owned rights. Water is one of natural resources that is "fugitive". "Fugitive" resources are mobile and must be captured before they can be allocated to individuals or groups. Since such capture and allocation poses the problem of exclusion, institutional regulation of these resources tends to develop early. Common property institutions are the most important means of regulation of "fugitive" resources. A 'commons' is a resource that is exploited by a group that has certain membership

criteria. There are group rights and duties with respect to the resource.

In the last two decades, the mandate and scope of public intervention in the irrigation sector has been continuously expanding. In the event of this expansion, the CPRSs have been affected. The impact of the intervention has been tangible in several forms: a) smaller FMISs are completely disrupted when the government superimposed large scale irrigation projects on them in the name of efficiency, b) traditional water rights of the users are rendered insecure, and c) the farming communities are increasingly becoming dependent on the state because the interventions do not define the role of the state in the context of the reinforcing the incentives to them.

Approval criteria for a water project do not include an analysis that assesses potential impact of the project on the relations between the strata of the society, and the proportion of benefits that will accrue to them from the project. The existing water policy and plan do not address this aspect as well. The findings of Irrigation Subsidy Study[8] empirically confirm this gap in the policy. The study findings clearly establish that the marginal and small farmers, who constitute about 70 to 80 percent of the country's total, farming population, have positively utilized the subsidy in the shallow tube well irrigation. As compared to their big and medium fellow-farmers, they used water more productively and were able to increase agricultural productivity per unit of land. Therefore, the study has recommended targeted subsidy for marginal and small farmers. The government, which did not negotiate with the multilateral agencies on the basis of the findings of any empirical analysis, arbitrarily agreed with the Asian Development Bank to completely remove the irrigation subsidy from the shallow tube-well irrigation. This is a decision that fails on the ground of both productivity and equity. Poverty alleviation, which is the basic national development goal, through increased human capacity and social well-being by means of legitimate and equitable resources and revenue transfer across the development sectors, has not been internalized in the water resources policy, planning, institutional and legislative process.

A social analysis, therefore, on the potential impact of the water project on the various societal strata should be an integral part of water resources development. Regulatory measures to correct imbalances in the social relationship between the strata of the society through an equitable promotion of their stakes need to be formulated and enforced in the light of the analysis.

7.2 Hydropower

Hydropower projects have increasingly become sensitive to their impact on the society. So far, the impact assessment, however, has remained largely confined to the project-affected persons. The six water projects- Kulekhani I, Marsyangdi, Kali Gandki "A", Modi Khola, Puwa Khola, and Chilime- undertaken so far have affected 1521 families or about 10,647 people (**Table 2**).

Table 2
Water Projects with Compensation and Resettlement

Project	Type	Capacity	Land Acquired (ha)	Affected Families	Compensation Options
Kulekhani	Hydro-electricity	60 MW	175.0	500	Cash/Land
Marsyangdi	Hydro- electricity	69 MW	60.5	222	Cash/Land
Kali Gandki "A"	Hydro-electricity	144 MW	93.4	617	Cash/Land
Modi Khola	Hydro-electricity	14 MW	14.0	105	Cash/Land
Puwa Khola	Hydro-electricity	6.2 MW	23.0	77	Cash/Land
Chilime	Hydro-electricity	20 Mw	3.0	-	-

Source: New Era, 1999.

[8] CMS (2000), *Irrigation Subsidy Study* (Draft), Department of Irrigation, Kathmandu.

Of the six-hydropower projects, Kali Gandki "A" is the largest. The preparation of this project was started after cancellation of Arun III. During the project preparation, Nepal Electricity Authority (NEA) organized several rounds of public hearings in the field as well as in Kathmandu. The government successfully negotiated the project with the ADB, and the project construction started in 1997.

Despite the good project preparation, the project management is reported to be unable to compensate and resettle all the affected persons in an orderly, adequate and timely manner. Even after three years of the project construction, 14 families of fishermen are yet to be duly resettled.[9] Clearly, the project approach is thoroughly inadequate to resolve the institutional problems that the local people, project-affected persons and project management face on the way of their effective participation in all the stages of the water development and management. Failure to address these problems in time creates a serious situation of disquiet in the project area. Mostly these institutional problems relate to competitive uses of water (hydropower, drinking or irrigation, water for aquatic life and plants), land entitlement and records, construction contract, interests of various units of local government and their relationship with each other and the project, and labor-employer relations.

Cash compensation to the project affected families has been a convenient strategy from the operational point of view. But the rural people do not have the skill to manage big amount of cash flow. Paying cash only and providing employment on an hourly basis for one member of household whose family comprises of ten or more people may be considered a major policy failure. The degradation of economic standard among Kulekhani Project displacees in Hetauda provides a lesson of what should be avoided when compensating and resettling the people.

7.3 Multipurpose and Flood Control Projects

In view of the country's potential of a number of water storage projects, many areas are likely to be inundated, a number of people displaced, and several common property resources systems and monuments of culture and civilization destroyed. According to the available data, the likely area of inundation would be 155120 ha. This is about 6 percent of 2.6 million ha. of the cultivable area of the country. The number of the people likely to be displaced is estimated to be 229,500.[10] In the skewed land/man ratio in the hills, it is assumed that majority of those affected by storage projects would be those with small or no land holdings.

These are, however, not only the storage projects that are assumed to seriously affect the social and economic interests of the PTSGs in the hills. Region of Terai, which consists of 17 percent of the country's high value agricultural, industrial and cultural area and accommodates 50 percent of the population, has actually been facing higher risk to its sustainable growth. Flood control structural interventions made in the name of efficient land and water management, some taken under joint Indo-Nepal collaboration and several untold number of such measures undertaken by India unilaterally in the forms of weirs and embankments, have rendered a number of places in Nepal Terai inundated.[11] Inundation has made the flood-prone areas of Terai extremely vulnerable to water-induced disasters. For example, in the Koshi Barrage Project water logging has led to adverse impact on agricultural productivity. In another case, near Indo-Nepal border on the Indian side, the government of India to protect their Barganiya Town and some Villages has constructed a ring bund. This has resulted in continued submergence of Gaur Town in Nepal side in the last many years. Such results make the affected areas unfit for human settlement and any gainful activities. The tendency on the Indian side to tie-up their side of the weirs and embankment to a higher ground elevation in Nepal territory for

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9 Roshan Shrestha, "Report from the Field: Wished for Development, Received Destruction, Gift of Kali Gandaki 'A' is Murder, Terror, Repression and Chaos", Weekly *Prakash* (in Nepali) (2056), 17 Magh, p. 6. Ram Prasad Dahal (2000), "A Plight of Displaced Fishermen"*, the Kathmandu Post,* 27 January, p.2.

10 As compiled by Ajaya Dixit from HMG, 1992; GOI, 1981; Joint Flood Report, 1990; JICA, 1993 SOGREH, 1991, Nepal Net Document (1999), "Water Projects in Nepal: Lessons from Displacement and Rehabilitation", http://www.panasia.org.sg./nepalnet, 8 March 1999.

11 Upendra Gautam, *Op.cit.*

better protection and performance of their infrastructure (for example, Tanakpur Barrage) has further contributed to increase the area of inundation and erosion in Nepal's southern border areas.

A review of minutes of a number of meetings of the Standing Committee on Inundation problems between India and Nepal reveals that each Committee meeting annually discusses, on an average, about 15 to 20 inundated sites in Terai-from east to west. But not much work is seriously done as a follow-up to the meeting decisions. The Indian side rarely agrees to Nepal's position that inundation on the Nepal side of the border is the result of Indian intervention in the river waterways. These Indian interventions have made adverse impact on the socio-economic stakes of the common Terai people with whom India claims to have "a very special relation".

The country has no policy on inundation problem. Whatever exists in the form of the government's initiative on this problem is limited to a sort of reaction made out during the meeting of Standing Committee on Inundation Problems between Nepal and India. The effectiveness of these bilateral meetings has so far been mostly confined to sketchy surveys of a number of inundated areas. The follow-up on the decisions of these meetings has mostly been non-consequential.

The unilateral and continuous trend of Indian structural intervention for irrigation and flood control contains all the possibilities of turning the agricultural land of Nepal Terai into an area that will not be suitable for any human settlement. The feudal structure of the society (that is entrenched on either side of the border) and the power relations of the feudal elites have aggravated the situation for the local people. The legal land entitlement would generally belong to the feudal family members. These members of the feudal family would be resident somewhere away in the cities, of Nepal or India. In such a situation, operationally and most seriously, it would be the local people who would be deprived of the right to livelihood through agricultural activities in the inundated areas. This is an irony that India's unilaterally constructed Laxmanpur Barrage alone has affected larger number of the Nepali people (15,174) than the number of the Nepali people (10,647) who have been involuntarily resettled/relocated by the six hydro-electric projects, namely Kulekhani, Marsyangdi, Kali Gandki "A", Modi Khola, Puwa Khola and Chilime, implemented so far in the country. These hydroelectric projects have altogether affected 10,647 family members. On the other hand, according to available figure, India's Laxmanpur barrage inundates 2581 houses, 7 educational institutions, 4 religious places and 2200 ha. of land in five villages of Banke district in mid-western Nepal. The five villages are Holiya, Bethani, Gangapur, Matehia and Fattepur. It displaces 15174 family members in these villages.

8.0 Distribution Option

A benefit distribution option is preferred for addressing the issue of distributive justice in the sustainable development of water resources. This option is consistent with the policy principle of equity in water resources development and management. This helps in the implementation of policy principle of participation and representation. The option decreases chance of social discontent, area discrimination, and promotes social well being at the multi-stakeholders level and works to guide water resources policy and planning for the greater number of the people and for the maximum good.[12]

[12] WRSF Consortium (2000), *Water Resources Strategy* (Main Report), Water and Energy Commission Secretariat, Kathmandu, December.

Box 7.3
Rapti River Training Disaster

The construction of Laxmanpur barrage and afflux bund on Rapti river near Nepal-India border is going to submerge thousands of bigha of arable land and dozens of villages, say experts. Nepali experts say the construction of 22-kilometer long afflux bund in the south of Laxmanpur barrage will stop the flow of Rapti River, which will in turn overflow and inundate the villages.

According to available figure, India's Laxmanpur barrage would inundate 2581 houses, 7 educational institutions, 4 religious places and 2200 ha. land in five villages of Banke district in mid-western Nepal. The five villages are Holiya, Bethani, Gangapur, Matehia and Fattepur. It would displace 15174 people or 1723 families in these villages.

The Indian VDCs have already begun resettling people from 52 villages that are expected to be affected by the 2-5 meter high bund. Indian side that maintains that the bund will not affect Nepal is constructing it at the breakneck speed.

MPs from the region, Gyanu K.C from Banke-1 and Sushil Koirala from Banke-2, who went for inspection of the site, have said they will demand that the government pressurize India to stop the construction. "India, which protested when we tried to construct a canal on Sikta, is constructing a barrage on war footing by neglecting Nepal's sovereignty. That is very unbecoming of a good neighbor", said Koirala.

A Standing Committee on Inundation between Nepal and India (SCINI) would study the implications of the barrage and submit a concrete solution, said a Nepali expert who is in the committee. The committee's meeting that was held through November 1-5 had decided to finish the work last month but the deadline has been postponed by two months because of the delay due to unexplained various factors.

Rishi Ram Sharma, Divisional Engineer at the District Irrigation Office, Banke, said the Nepali people will definitely be affected by the barrage "but the exact figure can be determined only after the survey". The project, which was implemented since 1981, was included in the list of the problems to be discussed by SCINI. The SCINI had taken a similar decision in 1991 on the impact of afflux bund. India has brought the water from Ghagra (Karnali in Nepal) to Sarju (Babai in Nepal) through a canal and is planning to bring the water to Rapti. According to sources, India intends to take the water to Gorakhpur for irrigation through a 188-kilometer canal.

S*ource:* The Kathmandu Post, 21 January 2000, Prakash Weekly, 25 September 2000 and Nepal Samachar Patra Daily 2000.

This option includes the provisions of representation of social organization and a social fee. Policy and legislative instruments should be prepared to facilitate and enforce PTSGs' representation in the decision-making of public water bodies. For this purpose, a list of the PTSG organizations should be prepared and annually updated. Giving priority to their federal units, shortlist of the organizations on the basis of their activities and organizational rules will support the representation processes. A mechanism based on these processes should be in place for the representation of the shortlisted organizations in the public water bodies in a rotational order. Program of reasonable distribution of benefits to the poor and women by means of targeted social development works should be continued by means of a social fee on the new water products and services. The rate of the social fee should be determined by the values added by the project.

Priority should be given to the projects that make provision of employment and social development of the members of PTSG, and help build their autonomous entrepreneurial capacity. Enabling policy and legislation to strengthen and promote common property resources systems has to be implemented. Common's rights in these systems should be recognized. Flood plains and inundated areas, as wetlands should be strengthened as new forms of common property resources systems. Knowledge and skills of the people to manage the new commons should be promoted. Community capacity to manage wet lands and excess water should be enhanced by regularly maintaining a two-way capacity building and communication link between the people of the flood-prone and inundated areas and the public water management agencies. A social health insurance system for the people in the flood plains and inundated areas should be implemented.

The inter-linkages between rural and urban should be treated as categories on two sides of a development continuum. Involving them in the conservation and protection of the water infrastructure will take care of the interest of the people of the district, which provide water resources benefit to certain urban center.

Comprehensive policy on involuntary resettlement should be prepared and enforced. It should include enabling provisions on i) delineation of a potential area as a project-affected area after preparation of feasibility and detailed project report, ii) adequate compensation to PAFs to help improve their living standard, iii) social security to those project-affected persons who lose their land or housing or both in water infrastructure development, iv) community consensus valuation of the affected assets, and payment of compensation on the site, v) continuous monitoring of activities and compliance of contractual agreements and adherence to social norms by Social Management Unit of the project in close collaboration with other relevant agencies/units, vi) establishment and operation of a nucleus in the government to centrally oversee and monitor implementation of the Involuntary Resettlement Policy, vii) training of the staff on resettlement and compensation aspects of the project, professional negotiation and public relations skill, and viii) inclusion of resettlement as an integral part of the project design which has to be carried out by qualified agency in the private sector under the supervision of non-profit making organizations.

The resettlers should continue to share water development benefits throughout the life of the project. Each member of the affected family who is resettled should receive this compensation. The compensation principle should be based on providing "land for land", "house for house" to the resettlers. An individual who has been resettled should be able to enjoy a better quality of life than earlier (i.e., prior to resettlement) with similar effort. For this purpose, a water utilization surcharge should be levied on the service/product unit/time use basis. The surcharge should be fixed at the rate that is sufficient to annually provide each member of the project-affected family an amount that is equal to the current national per capita income. However, it must also be ensured that this does not encourage dependency. An option is to create a support fund from the water utilization surcharge thus determined and collected. The fund may be utilized for the collective benefits of the resettled families if they reach consensus for such utilization. Example of such fund utilizations could be low interest loans to families for industrial utilization of local water resources, construction of community schools for the children of the resettled as well as the host location families and other community development activities.

Communication mechanism that makes the functioning of the water project transparent and helps in enforcing its public accountability at each stage of its development and management should be established and operated. Effective public hearing procedures during planning, implementation and management of the water project to make it responsive to the needs of the local people should be in place. A project newsletter that includes project-related information and analysis in relation to poverty, gender imbalance and involuntary resettlement should be regularly published and circulated to the members of the PTSGs.

9.0 Conclusions

The population of Nepal is characterized by low human development. Huge investment in water resources development has not helped to improve the lives of the majority of the members of the PTSGs that includes the poor, women and the project-affected persons. These members, though share the investment and operation and maintenance costs of the water development, are not able to have access to the benefits that accrue from this development. This is injustice. For distributive justice, growth with equity, institutional inclusiveness through representation and accountability, and water resource development with the focus on protection of stakes of the PTSGs become the major indicators of sustainable water resources development if peaceful relations between different societal groups are to be attained. The policy makers and program/project implementers should make optimal efforts in ensuring the security of intra-generational access and equity to benefits to be accrued from water resources development. Lop-sidedness in the development of water resources vis-à-vis

distribution of benefits would trigger serious social instability in the country. Therefore, equitable access, being the fundamental of contemporary people-centered development paradigm, has to be the guiding principle of the development of water resources in Nepal.

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