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IPCS Discussion Paper



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# Kishenganga and AJK: Views from Muzaffarabad

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The People and the Government of Azad Jammu and Kashmir (AJK) view that the controversial Kishenganga hydro project started by India by diverting the Kishenganga/Neelum River is a clear violation of Indus Water Treaty (IWT) signed in 1960 between India and Pakistan; mediated by the World Bank. It feels that the population of the both AJK and Indian Administered Kashmir (IAK) living along the course of river Kishenganga, in about 250 km. length will be deprived of their basic right of water use which is duly recognized by both countries under IWT. The project will have negative effects on agricultural, environmental, aquatic and wild life on both parts of Kashmir. Apart from these hazards, the four main hydro power projects under implementation and at design stage shown in the enclosed maps clearly indicate that there was no justification to divert 58.4 m<sup>3</sup>/sec of water for generation of hydro electric power of only 330 MW, in the presence of other available options to generate 1410 MW power in the adjacent area excluding 969 MW electric power from Neelum Jhelum Hydropower project which will be completed in 2016. It is felt that more options can also be identified for hydropower generation by the India, Pakistan and both parts of Kashmir jointly, starting from feasibility study, design and implementation. The hydropower so generated can be utilized to cater for the needs of all the three stakeholders. It can be possible only in an environment of trust and confidence among them.

Presently, the controversial project will have adverse effects on agriculture, livestock, aquatic and wild life, forest and tourism resulting in increased sufferings of population. The project is much harmful for AJK.

## **Impacts, Concerns & Effects on AJK**

### a) Aquatic life/Ecology of the area

Diversion of water to the tune of 58.4 m<sup>3</sup>/sec as proposed for project will affect many aspects of the river ecosystem, including fish, invertebrates, and algae, also in the main river as well as in the tributaries and the terrestrial ecosystem. Deficient water in the river will lead to an environmental catastrophe in upper reaches of Kishenganga/Neelum river. Survival of fish in the winter months and the tourism related economic activities will be significantly affected including sport fishing; river based commercial fishery, and occupancy and utilization levels of tourist facilities located by the Neelum River. In addition, the quality of river water in the upper reaches will deteriorate during September to March as the river will not have a capacity to flush the sediments and pollutants flowing into the river from the tributaries and streams draining into the river. Stream flows that protect fish also protect algae and invertebrate assemblages as well as other species, like otters, that rely on fish. Hydrologic processes, such as floods capable of maintaining geomorphologic processes need to be maintained. Adequate seasonal low flows need to be assured that allow fish migration during spawning seasons, fish immigration and emigration into tributaries, and fish survival during winter freezing.

Ecological boundaries do not recognize political boundaries or politics of the area. The effects of water withdrawal from Kishenganga/Neelum river will affect the ecosystem of the area as a whole and not an "Indian ecosystem and a separate Pakistani Ecosystem that has to be kept in view. The needs of the Indian and Pakistani population must be considered. Pakistan must appreciate the Indian need for hydroelectric power and India must recognize the Pakistan's need to preserve the environment and natural beauty of the Neelum Valley. The Treaty allows India run of the river projects so that is not the issue; the issue is the violation of the technical parameters set by the Treaty. Both parties should be

prepared to make concessions in indentifying and taking new projects for implementation by ensuring the preservation of the environment and natural beauty of the Neelum Valley and taking into confidence the people of both sides of Kashmir.

### **Tourism**

During recent years, tourism in the area of AJK has flourished and is now becoming one of the most important and consistent source of livelihood for a number of people in the low-income group. Due to its scenic beauty and mountainous areas Neelum Valley is becoming important in this regard. Tourism is becoming even more important considering the dearth of industrial and urban development in AJK. In the Neelum Valley, tourism generates employment opportunities thus contributing now in the local economy. This aspect will adversely affect the local economy of the area.

### **Adverse Environmental Impacts**

Large Dams and river diversions have proven to be primary destroyers of aquatic habitat contributing substantially to the destruction of fisheries, the extinction of species and the overall loss of eco system services on which the human economy depends. Their social and economical cost have also risen markedly over the past two decades.

#### A). Micro climate water chemistry

There will be complete change of Micro Climate-Metrological Parameter Kishanganga downstream. Change in water chemistry associated with reduced depth and velocity, increased water temperature and low dissolved oxygen (DO) will irretrievably damage aquatic fauna.

#### B). River Ecosystem

- Extreme reduction in flows of River Neelum will become inhospitable for some rare aquatic species –trout, loaches, diptychs, maculates, glyptothorax, Kashmirensis and triplophysia stoliczkae due to increased temperature and reduced sanctuaries.
- Reduce connectivity, thereby restricting movement of aquatic and terrestrial wild life.
- Reduced flow of water will adversely affect fish, invertebrates, algae (food chain /web) in the main river as well as in tributaries and adjoining terrestrial ecosystem. Diversion will result in significant decline of already thin and restricted population of fish species; as 07 out of 17 species are found in upper reaches of Neelum/Kishanganga river.
- Rendering native species, not adapted to extreme low flow, unable to compete invasive species.
- Concentration of prey species.
- Reduction in commercial and recreational Fishing.
- Decrease in freshwater species.

### **Wildlife**

Two National Parks in Neelum Valley, Musk Deer National Park and Gamhout National Park spreading over an area of 297898 acres are likely to be affected. Life of the following species will be endangered.

- Common Otter (*Lutra Lutra*) threatened water dwelling mammal.
- Common & Snow leopard, Grey Goral, Musk Deer, Black Bear, and Brown Bear.
- Dragon Flies, Frogs, Water Fowls, Brown Dipper and other shore birds.

- Kishanganga/Neelum River from LoC to Dudghai Nullah will be severely affected.
- Aquatic life will suffer Great Set Back.
- Water Ground Recharge will fall near to zero.
- Meteorological Parameters like, Humidity, temperature of ambient air etc. will change remarkably which is an ominous threat to the unique ecological pattern of this area.
- Biodiversity Settings of this area will change altogether.

### **Forest & Agriculture**

Most of population of Neelum Valley in AJK is rural and depends on agriculture and forests. Total forest area is 27300 ha (65% of the total land area upstream of Nauseri) covered with main species like deodar, fir, blue pine, spruce, chirr pine, spruce, taxus, walnut, ash, acer will be endangered, having following impacts.

- Reduction in forest nurseries.
- Forest species over an area of 1600 ha will vanish in flood plains
- Reduction in agriculture production due to water shortage.

Upper Neelum Valley is located in non-monsoon area and rainfall is not frequent to meet irrigation water requirements. Maize crop depends on irrigation and receives water through gravity flow water channels in the valley. Moreover, drought spells that have been developed during past decade has left the farmers at the mercy of river water. This fact needs to be kept in view while assessing water requirements of the area from Kishanganga/Neelum River.

The AJK Department of Agriculture is focusing on the introduction of high value crops and diversification in the cropping pattern for increasing farm income of the farmers with small land holdings. For this purpose the approved project portfolio is Rs. 1107.321 million for agricultural development for fiscal year 2012-13. Area specific high value crop varieties are being introduced in the Neelum Valley i.e., summer vegetables, English vegetables, seed potato and cut flowers. These crops need more water as compared with the traditional crops.

In the Neelum Valley grass lands are to be irrigated by river waters which is the main source of animal fodder. Fodder shortage during winter is covered by the grass growing naturally on relatively sloppy lands. It is harvested, dried and stored for use during winter. It is important for local farmers to grow adequate quantity of grass fodder by irrigation. River water is the main source to ensure water requirements during cold winter for the purpose.

The Agriculture Department has worked out a net benefit of Rs. 43,300 per acre by cultivation of existing traditional maize varieties on additional land that will be provided irrigation facilities by lifting water from Neelum River. The department of Irrigation is working on its "Irrigation Development Plan" throughout the state and has implemented 10 development projects for harnessing the water potential for agriculture use. Due to multiple reasons i.e. unstable security conditions along Line of Control (LoC) in the Neelum Valley and natural disasters, work on irrigation development couldn't be initiated until 2007. The Irrigation Department is also working on a project entailed to provide irrigation facilities to an area of 8431 acres alongside the Neelum and Jhelum Rivers from Taobut to Kalyari which will be implemented in two phases, by 2017.

### **Hydroelectric Power projects in AJK**

AJK's stance on Kishanganga project is that diversion of its water through 23 Kilometer tunnel is a clear violation of the IWT. As a result of its construction, there will be a shortfall of about 21 to 30 percent of water flow in the river and as a result Pakistan's Neelum Jhelum project will suffer and its

generation capacity will be reduced by 13 % of the original design capacity. Moreover, the diversion of water will affect severely the agriculture output of Pakistan. Study of three important Hydroelectric Projects; Dudnial 960 MW, Ashkote 250 MW and Kundian 200 MW has already been completed by private sector in Neelum Valley area and they are ready for implementation after finalization of design. Construction of Kishanganga Dam will adversely affect their construction resulting in problems for rural community of the area by depriving them from their basic needs of electricity and water requirements for irrigation.

### **Income Losses to AJK due to Water Diversion**

AJK will suffer following economic losses due to diversion of Kishanganga/Neelum river

- i. Decrease in power generation from ongoing NJHEP and other planned projects
- ii. Difficulty in fetching drinking and washing water
- iii. Decrease in supply of irrigation water
- iv. Difficulty in maintaining wildlife and livestock
- v. Reduction in medicinal plants
- vi. Reduction in fish varieties
- vii. Deforestation
- viii. Drop in tourism activities
- ix. Loss of natural beauty of the Neelum Valley

### **Conclusion**

Track II dialogues such arranged by IPCS are a very useful exercise to look into the gravity of the problems emerging from the upstream development activities for water storage and hydropower generation. Rights and privileges of upper and lower riparian's needs to be thoroughly examined and considered. India being, upper riparian, should be more accommodative and considerate to the concerns of lower riparian AJK/Pakistan. Kishanganga/Neelum river's water is a common source for exploring development for water and power project for both the countries; therefore, in future the development of the water-river infrastructure should be undertaken by mutual consensus, consultation and agreements to the maximum possible extent by accommodation each other's requirement and addressing the concerns of people on both side of LOC. Data relation to the upstream projects should be shared. It will certainly help in settlement of disputes and issues in future and the dream of prosperous sub-continent can be realized. This will bring change in the lives of people in both countries in general and in Kashmir in particular.

Resolution of projects related issues and disputes under agreed norms and procedures, laid down in IWT is still a better option. IWT has held good for over 52 years, surviving two wars, many other conflicts and tension between the two major nuclear rivals in South Asia. The effects of Kishanganga project on AJK cannot be over looked. Consensus by all stakeholders for the development of the available water resources of Neelum/Kishenganag river water; jointly undertaking development projects in future will ensure the sustainability of the projects and also peace and prosperity in the two countries.

Available water resources including hydropower potential in the area cannot be increased rather they will be decreasing day by day due to climate change. Therefore, there is need to harness the available

resources jointly for the benefit of all the stakeholders within the frame work of IWT 1960. Only such projects should be undertaken in future which may be beneficial to all stakeholders and not like Kashanganga Hydropower Project which is resulting in the suffering of one stakeholder with lesser benefits. In future projects be identified, designed and implemented with consensus keeping in view the following aspects:

- parts of Kashmir should not be deprived of their basic rights to state's water resources. Projects should be beneficial for all stakeholders and should not cause irrecoverable losses to lower riparian like in case of Kishanganga Project.
- Projects should not have any environmental, aquatic and wild life or agriculture or any other adverse effect on the population on both sides of Kashmir, India and Pakistan.
- People of both

By adopting and developing a mechanism in such a way the vision of a prosperous subcontinent can be achieved and a lot of financial resources of both sides can be saved and utilized for the people of both countries, making their lives more comfortable. Concerns of the peoples of both sides of Kashmir should be addressed. By doing so, the possibility of controversial hydro development can be minimized, which is likely to arise as projects are undertaken upstream in Indian Administered Kashmir having consequence for downstream AJK.