



Upper Lower Riparian Issues and Options

Group Discussions in the consultative Workshop

Group

1. Ch. Hamid Malhi
2. Nasir Ali
3. Saeed Ur Rehman
4. Abdul Majeed
5. Nabi Bux Sathio
6. Saeed Ur Rehman
7. Abdul Jabbar Kazi
8. Dr. M. Saleem Baloch
9. Ali Hasnain Sayed
10. Syed Mazar Ali Shah
11. Mohammad Murtaza
12. Nasir Abrar
13. Shafqat MaSOOD
14. Wasif Sultan Ali Khan
15. Aamira Fatima
16. Naseebullah Khan
17. Shakeela Naveed
18. Gohar Khan Jogezeai

3.1 Inter-Provincial Disagreements.

- * • Inter-provincial water disagreements are continuing on the division of water as per entitlements and sharing of shortages proportionately as per Accord between the provinces. Punjab and Sindh are facing disagreements. Sindh and Baluchistan are also facing similar disagreements as Baluchistan (Khirther and Pat Feeder Canals) is a lower riparian of Sindh and not using its due share of allocated water due to inadequate irrigation infrastructure.
- * • Transport of effluents to the downstream areas and impacts of pollutants on the bio-diversity and ecology of lower riparian and delta ecosystem is now a serious concern, especially during the floods, when all the pollution is washed to the downstream.

3.2 Water Apportionment Accord and Water Entitlements

- * • Lack of enforcement of the formula for water distribution as per Accord based on ten-daily average use, system-wise and seasonally adjusted figures are still an unresolved issue. Punjab is still of the opinion to use the figures of 'historic use' during 1977-82, the period in which adhoc allocations by the federal government had favored Punjab as per opinion of the Sindh.
- * • Lack of trust of lower riparian Sindh and upper riparian Punjab on equitable distribution of water is an issue which needs to be resolved, as Sindh is of the opinion that it has received less water than its entitlement and is facing serious impacts on the delta ecosystems, while Punjab has reservations on data of water losses between barrages of Sind.
- * • Impact of reduced flows below Kotri barrage on the livelihood of downstream people dependent on the delta ecosystems including the livelihood sources of fisheries, mangrove forests, livestock and delta farming are now visible and significant. The findings of 'study on water escapages below Kotri Barrages' need to be considered.
- * Any future policy should include FATA.
- * All the figures should be in AMF.
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3.3. Water Entitlements and Availability

- * • Water availability in the post-Accord period was much less than the water entitlements as per Accord. Accord distributes 141.1 km³ of canal water supplies among provinces. Maximum amount of water diverted to canals during post-Tarbela period was 137.15 km³ with mean supplies of 122.2 km³, which is 13.4% less than Accord entitlements. Variability in canal water supplies during post-Tarbela period ranges between 98.3 to 137.15 km³, which is 30.4 and 13.4% less than Accord entitlements and is a major issue creating water disagreements among provinces(mention figures in MAF only).
- * • How to share water shortages among the provinces, when they feel that their entitlements are as per Accord. Another issue is that why water entitlements are higher than availability of water for diversion to canals. The reason is that these entitlements are based on the fact that additional storages will be constructed to transfer water of a wet year to the dry year and from Kharif to Rabi and Rabi to Kharif. Subject to availability of water. IRSA is distributing water for the last 16 crops session without any grievances being referred to CCI.

3.4. Need for Storages and Opposition from Provinces

- * • Storage is needed on the Indus Main to regulate water supply ensuring that surpluses are not wasted and there is sufficient water to meet needs in times of shortage. Pakistan's water storage capacity is only 30 days of river flows. The GoP has planned to increase the water storage capacity through construction of large dams – Basha, Kalabagh and others. These would have the added benefit of generating hydro-power thereby helping meet country's expanding power needs.
- * • Serious inter-provincial disputes on the construction of Kalabagh dam have been observed since last 25 years, with Punjab on one side supporting construction and rest of the provinces on the other side. The Kalabagh Dam will generate hydro-power. The normal procedure is for royalties for power generation to go to the province where they originated. In NWFP there are concerns that the province will be denied royalties because of the dam's location on the Punjab-KPK border and because of plans to position the dam's turbines in Punjab. Both the Punjab and federal governments have given assurances that this will not happen.
- * • Former President of Pakistan laid the foundation in April 2006, for what the government hopes will be the first of five dams to be built in the next decade – the Basha Dam. Initiation of work on the Basha Dam has, not surprisingly, caused the focus of opposition to shift away from Kalabagh to it. The issues involved are remarkably similar. In KPK opposition to Basha Dam is muted if not absent. This is not surprising, given that KPK will be saved, the environmental and physical disruption and damage caused by dam construction, and could well profit from power generation at the new dam. An additional 'international' dimension to opposition to the Basha Dam comes from India, which asserts that parts of Indian Kashmir will be submerged by it. Despite all the opposition, work on the Basha Dam has started.
- * • Third party independent environment impact assessment needs to be made for every Dam.
- * • Water shed Management needs to be extensive and result oriented.
- * • There is a dire need to protect trans- boundary historical river flows.

4. POTENTIAL OPTIONS

4.1. Resolving Inter-provincial Water disagreements.

- * • Bridge the gulf between Punjab and other three provinces to meet the challenges of water scarcity and shortage of energy through: a) implementing the Accord in full, ensuring all provinces get their fair share of water; b) giving power to the CCI to make decisions on water disputes; c) carryout feasibility studies to obtain an accurate assessment of impact of constructing dams; d) consider alternatives to controversial dams projects such as Kalabagh, e.g. an increased number of smaller dams although small dams are not the alternative to large dams on the Indus Main, therefore sites have to be selected on Indus Main; e) seek consensus from all stakeholders through open and informed policy dialogue before making decisions to construct new dams; avoid imposed decisions; f) ensure that plans for new dam construction include compensation and resettlement provisions for affected communities; and g) allocate more resources for water infrastructure and strengthen water management so that optimal use is made of available supplies.
- * • Develop state-of-the-art and reliable system of water measurement to provide reliable information for making rationalized decisions to resolve inter-provincial disagreements. The culture of “water measurement” has to be adopted as a tool for water management by all the provinces to rebuild trust among the provinces. This will also help to distribute water in both the extremes of water shortages and water excess. Once this system is established and transparent only then Pakistan is in a position to ask India to provide flow data through telemetric system.
- * • Build consensus for construction of carryover/conventional dams to ensure availability of water as per Accord entitlement to various provinces. The Accord entitlements are based on additional storages to be constructed to transfer water of a wet year to dry year, which are still not available. The current dams are meant for transfer water of the Kharif season to the Rabi season in a normal year. In the wet years, the available storage can't store the excess water during the Kharif season. The trust building measure would depend how transparently allocations below Kotri are provided from the new storages.
- * • Utilize available potential sites (Diامر-Basha, Akhori, Kuram Tangi, Munda and Kala Bagh) for construction of carry-over dams to address water shortages and generate low-cost hydro-power subject to availability of water. Consensus can be built for the construction of these dams through a transparent system of water distribution. These dams would have the added benefits of generating hydro-power thereby helping meet country's expanding power needs.

4.2. Developing Water Storages

* Storages in the Indus Basin

* Build new carry-over storage dams for adaptation against expected shrinkage of glaciers and changing precipitation patterns due to the climate change, if happened. In a system with variable water supply such as the Indus Basin River System, storage is needed to regulate water supply ensuring that surpluses are not wasted and there is sufficient water to meet the needs in times of shortage. Pakistan's water storage capacity is currently only 30 days of river flows. The GoP argues that it has to increase the country's water storage capacity, through construction of large dams. These would have the added benefit of generating hydro-power thereby helping meet country's expanding power needs. The potential dams to be constructed to address water shortages and generate power are: Diamer-Basha, Akhori, Kuram Tangi and Munda. Consensus can be built for the construction of these dams, if trust is built through a transparent system of water measurement and distribution. Including Kala Bagh Dam subject to availability of water

* Storages Outside the Indus Basin

* Livelihood for the stakeholders in areas outside the Indus Basin is very much needed especially in Northern Punjab, Balochistan, NWFP, FATA and AJK. The conflict areas in NWFP, FATA and Balochistan demand livelihoods, which can be provided by developing small dams and developing irrigation schemes for agriculture, watershed management and reservoir management for poly-aquaculture. Currently, small dams are largely in Punjab and NWFP. Generally, the command area of these dams is less than 1000 ha, with an average of around 400 ha. The small dams constructed in Balochistan are also having command area of over 2500 ha for the two small dams (Sabakzai and Mirani) and rest are too small and may be regarded as mini dams or delay action dams. The current government has developed an integrated strategy for drought mitigation where watershed-reservoir-command area-downstream ecosystems will be managed in an integrated fashion. In the 1st phase 12 medium size dams and in second phase 20 medium size dams will be constructed. The actual implementation of this initiative would depend on the allocation of resources to these projects as the country is facing economic crises. These developments should also include full package for irrigation and agricultural development so that high value crops can be grown using high efficiency irrigation systems and production practices.

* Can Storages Outside the Indus Basin Solve Water Shortages

The storages on Indus Main are large hydro-power dams having minimum storage of over 7.5 km³ for the potential sites identified for these large dams. The small dams outside the Indus basin are having very little storage of 0.030 to 0.060 km³, thus 125 small dams would provide storage equivalent to the Kalabagh dam. Further, the expected effective life of small dams is not more than 20 years rather less and command area is not easily available at sites where water can be stored. This fact has to be understood; as there are mis-perceptions regarding small dams and number of people does talk that small dams should be built instead of large dams. We have to keep in mind that life of small dams is 15-20 years, as siltation process is rather rapid and thus it will not be economical to build small dams even potential sites are available. Further generation of hydel-power is hardly possible in small dams. Therefore, large dams on Indus Main can't be replaced by any number of small dams. These are two different things. For food security, large dams on Indus Main are essential. For equitable distribution of resources to the deprived people in fragile ecologies small dams have to be built but these dams will not solve Pakistan problem of food security and export requirement.

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* How Conflicts on Storages Can be Resolved

- * The conflict on the construction of large storage dams on Indus Main is largely due to two reasons. Firstly, the lower riparian especially Sindh province does not have any trust on Punjab regarding availability of their share of water if it is stored in reservoirs. Therefore, it is the responsibility of IRSA and Punjab Government to demonstrate transparency in operation and management of river flows in the upper Indus basin so that trust is built and Sindh is ready to accept construction of large dams on Indus Main.
- * The other aspect which is needed to resolve the conflict that income from hydro-power generation instead of giving to the province where dam or power houses are located, it may be distributed to all the provinces as per their rights under the Award. This is important because most of the dams will be built either in G-B, KPK, AJK and Northern Punjab, therefore, Sindh will never get any share from the royalty of hydro-power. When water belongs to all provinces, then why royalty is given to the province where the dam is located. It is not fare.
- * The above-mentioned two aspects are essential to create an environment conducive to build consensus among the provinces for the construction of the large dams on Indus Main.
- * Storages outside the Indus Basin.
- * In resource allocations FATA should be given its due share as FATA consists 46% of the special areas in terms of the provisions of the constitution.

4.3. Building New Irrigation Facility

- * Diversion of Glacier and Snowmelt in Mountains
- * In areas where glacier- and snowmelt contributes to the Indus River system is having steep mountainous system and any amount of water used other than the evaporative demand is received back in the river. Therefore, development of small scale mountain irrigation systems in G-B, KPK, AJK and Northern Punjab can help to develop new livelihoods, if innovative and high tech agricultural systems are developed. There has been allocation of 3.7 km³ made in the Accord for these areas above the rim stations for NWFP but it is expected that this allocation is not fully utilized.



Thank You!