



# Policy Brief



## USING ECOSYSTEM VALUATION TO ENHANCE TRANSBOUNDARY WATER COOPERATION IN THE KABUL RIVER BASIN

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### EXECUTIVE SUMMARY

The ongoing transboundary water conflicts in the Kabul River Basin (KRB) are narrowly conceptualised in terms of quantitative water distributions leading to win-lose situations, which are exacerbated due to ongoing insurgencies, climate change, growing industrialization, and urbanization. The existing trans-boundary water mechanisms are state-centric, bilateral, exclude other actors, and disregard the broader biodiversity & ecosystem services (BESS) of the river basin for enhancing human well-being. In our existing research endeavour, we have tried to explore a novel idea of using the BESS concept to bring together multiple stakeholders and transform the water sharing conflicts by enabling a re-definition of the water management problem in the context of green water economy and evidence of shared environmental benefits. For the said purpose we have market-based valuation services to estimate the provisioning services of upstream area (Chital) of KRB on the Pakistani side. This is a working paper, and we are not presenting the full-blown study results. This study is based on 200 randomly selected households. The result of the study reveals that the total economic value of the provisions of ESS of river Kabul is significantly high with an average economic benefit per household of 963490 PKR/YR (\$4817), Which is higher than the economic benefits obtained from Pakistan's high-elevation Kurumba National Park (893250 PKR/HH/YR, Din et al., 2020). The study shows that ESS provided by river Kabul are vital for livelihood of the residents as the ESS provided are the main source of income for the localities. This enduring study has policy implications, the results on the Pakistani side of KRB suggests that the natural flow of water is a win-win situation for both Afghanistan and Pakistan and certain ways and means should be explored for cooperation between the people of both the country for the mutual welfare of this region. Cooperation can be built based on some international environmental agreements, conventions and frameworks (e.g., SDGs, Paris Agreement on Climate Change, Convention on Biodiversity) where both Pakistan and Afghanistan are signatories or parties to these conventions.

### INTRODUCTON

Globally in 150 countries, there are a total of approximately 310 transboundary rivers, and water related conflicts are frequent and increasing due to the current worsening situation of the global water situation. These conflicts are often approached with a focus on water rights, that is, using a predominately political lens with respect to controlling and transferring water. While this is an important aspect, it does not account for the constantly changing political priorities as well as

changing stakeholders and water uses. More importantly, the existing mechanisms do not account for the ecological aspect of a conflict centered on a nature-based system.

## OVERVIEW OF RESEARCH

The purpose of this research paper is to analyse and evaluate the provisioning ecosystem services of the Kabul River Basin and understand water related conflicts with an inclusive lens that considers shared environmental benefits and is able to bring together multiple stakeholders.

## STUDY AREA

The study area for this paper was the Kabul River Basin, specifically its upstream territory as it enters Chitral after flowing for 560 km in Afghanistan. Chitral is located in the extreme northern region of the Khyber Pakhtunkhwa province with Gilgit Baltistan on its east and Afghanistan on its North and West sides. The Kabul River Basin serves as an important water resource for irrigation as well as fulfilling the drinking water needs in both Afghanistan and Pakistan.



Using an ecological lens for water management and water related conflict resolution is not a new approach and has been used previously. The growing focus now is on biodiversity and ecosystem services – their identification, assessment, and valuation. Biodiversity and Ecosystem Services (BESS) is a complex aspect of water governance because it represents the various outcomes of a natural system benefiting people.

## METHODOLOGY

The data for this study was collected only in the upper stream (Chitral) areas of Garam Chashma, Darosh, and Ayun-Kalash, Boni, Mastuj, Yarkun, and Bragoal Pass. The number of questionnaires filled in each community includes: Garam Chashma = 33, Darosh = 33, and Ayun-Kalash = 34 from upper Chital and Boni = 25, Mastuj = 25, Yarkun = 25, and Bragoal Pass = 25 from lower Chitral. The respondents were adults, above the age of 18 years, including male and female. There were also focus group discussions held with local representative.

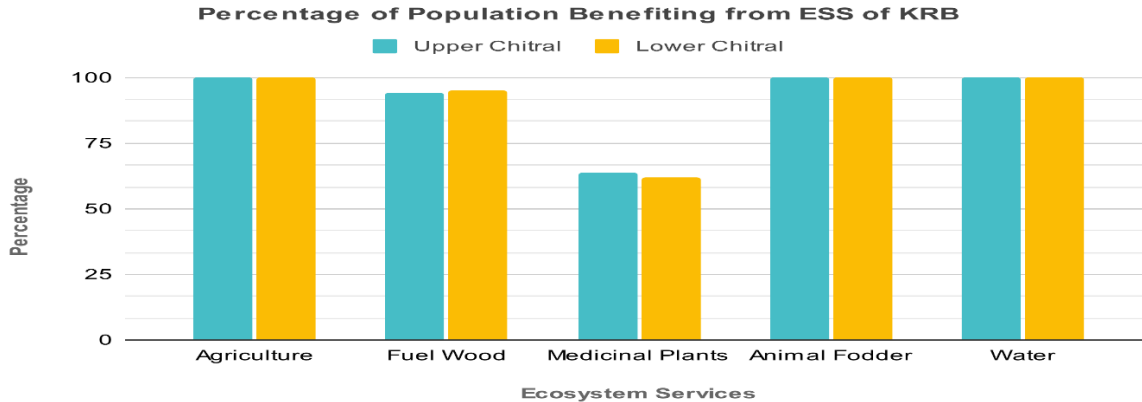
The secondary data revealed that most common agricultural products of these areas are wheat, tomatoes, potatoes, beans, maize, barely pulses, onion, rice, and different other vegetables. The inhabitants of the area collect medicinal plants, wild grass and fuel wood from the non-agricultural land and nearby forests. Some amount of the agricultural product is used for household use while the rest is sold in the market for income generation

The economic values of the ESS were calculated for the following Common International Classification of Ecosystem Services (CICES) classes: (i) agriculture crops (e.g., beans and potatoes tomatoes, pulses, onion, barely, wheat, maze, and perennial crops), (ii) livestock, (iii) fuel wood (iv) medicinal plants (v) water (drinking and non-drinking uses).

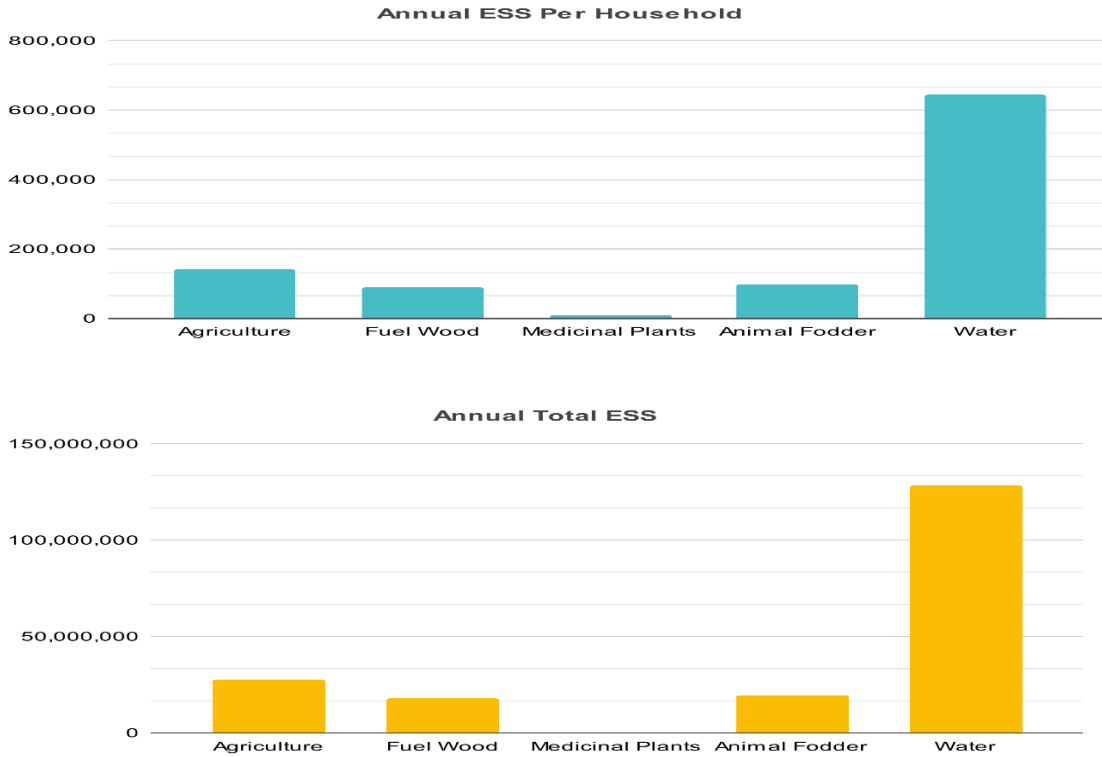
But, the values of horticulture, mineral, values generated through the tourism, and the hydroelectricity generation is not reported in this commentary, however, we are working on this aspect, and we intend to update the present estimates in the final report.

## RESULTS

The provisions of ESS are widely used in district Chitral. Most commonly, these provisions were used in agriculture and the rearing of livestock i.e. cultivation of agricultural products, surface water for drinking, medicinal plants, minerals, fuel wood, animal fodder, vegetables, fishing, surface water for non-drinking uses, and wild vegetables.



The best ESS that is received in terms of monetary value is the water that is used for drinking and non-drinking purposes which valued 636919 PKR/HH/YR (\$3185) on average from the data collected from respondents. The second-best ESS that is received in terms of monetary value is agricultural crops which yields 141979 PKR/HH/YR (\$710) from the data collected from respondents in district Chitral. The third best income generating ESS in district Chitral is medicinal plant and fuel wood. The data shows that among the respondents, the average income generated from medicinal plants and fuel wood is 103433 PKR/HH/YR (\$517). After that, animal fodder is the 4<sup>th</sup> leading ESS in terms of monetary value, through which the respondents get 98976 PKR/HH/YR (\$1012).



The ESS provided by river Kabul are the main source of livelihood for the local communities in district Chitral. The importance of ESS provided by river Kabul to the localities of district Chitral can be identified by the monetary benefits obtained by the local communities. This study reveals a high monetary contribution in provisioning ESS to the communities living nearby river Kabul.

## POLICY IMPLICATIONS

The results of this ongoing study suggest that the ecosystem service provided by river Kabul to the localities living nearby are vital and is serving as a source of economic protection for the residents of district Chitral. Majority of the residents of basin of river Kabul are engaged in agriculture and livestock which are the direct ESS provided by river Kabul. The river Kabul is also playing a key role in maintaining the greenery of the forests in district Chitral which are safe habitats for wild animal, some medicinal plants, fuel wood, and fodder for livestock. The study shows that ESS provided by river Kabul are vital for livelihood of the residents as the ESS provided are the main source of income for the localities.

In terms of policy implications, though the study isn't complete, but the results on the Pakistani side of KRB suggests that the natural flow of water is a win-win situation for both Afghanistan and Pakistan and mechanism should be explored for cooperation between the people of both the country for the mutual welfare of this region. Cooperation can be built based on some international environmental agreements, conventions and frameworks (e.g., SDGs, Paris Agreement on Climate Change, Convention on Biodiversity, among others) where both Pakistan and Afghanistan are signatories or parties to these conventions.