

# CLIMATE-INDUCED WATER DISPUTES BETWEEN INDIA AND PAKISTAN AND THEIR CONSEQUENCES FOR BANGLADESH'S AGRICULTURE

Asim Noor

Student, University of Management and Technology (UMT)

[S2023188002@umt.edu.pk](mailto:S2023188002@umt.edu.pk)

Corresponding Author: \*

DOI: <https://doi.org/10.5281/zenodo.14752369>

Received	Revised	Accepted	Published
04 November, 2024	04 December, 2024	19 January, 2025	27 January, 2025

## ABSTRACT

*Climate-induced water disputes between India and Pakistan and their impact on agriculture in Bangladesh: the research theme This research project analyses climate-induced water disputes between India-Pakistan with a focus on implications for Bangladesh agricultural sector. This monograph underlines the linkages of South Asia water resources, the implications of climate variability on water availability and tools for sustainable food security in Bangladesh. This study uses a political ecology lens that is applied to describe the power relationships, and environmental context for these conflicts and reflects on ways for regional cooperation and sustainable water use. As the results demonstrate, immediate actions are required to work collaboratively in circumventing climate change effects on agriculture and freshwater resources within the region.*

## INTRODUCTION

One of key agricultural water, especially in South Asia (where millions rely on irrigation for their income). The Indus (red) and Ganges river basins support a large part of India, Pakistan and most of Bangladeshi population in irrigation; drinking and sanitation functions.

Still, global warming is changing rainfall regimes making evaporation rates rise and the occurrence of severe weather patterns increase creating water insecurity and concomitant conflicts among nations

**Historical:** colonial legacies and geopolitical clashes in South Asia Water Conflicts Bangladesh particularly because of colonial history and Competition over the waters of Indus Water Treaty (1960), as climate change makes things worst with water scarcity.

What these conflicts mean for Bangladesh, which have a large dependence on the Ganges and Brahmaputra rivers for its agricultural productivity is monumental. Bangladesh is most exposed to the impacts

of these conflicts on account of water scarcity and flooding Bangladesh where large sectors depend on agriculture, a sizable part of it is an agricultural dependent population. Altered river flows can make for smaller harvests and compromises food security and stability.

This research intends to study the water dispute between India and Pakistan on one hand and their impact on agriculture in Bangladesh. This study is focused on analyzing the causes of these conflicts, their effects on agricultural work an mitigation strategies this could serve policymakers as well other actors in the region.

## Background

One of the largest river systems in the world, the Indus River system — India and Pakistan shared tributaries of this river system. This is a critical aspect of agricultural economy of the two countries. Ganges and Brahmaputra rivers which cut through India and Bangladesh are also equally important for Bangladesh's

agricultural sector. The history of water management in these regions is a highly nuanced and colorfully charged multi-layered story- colonial, national interests played by Russia, geopolitical rivalries etc. Indus Water Treaty signed in 1960 was a milestone pact that sought to resolve water issues between India and Pakistan. Yet the treaty was under stress over climate change— altered precipitation patterns and more frequent extreme weather events have started to bite. Population growth and agricultural expansion which raise the demand for water will escalate a very bad visibility.

### Climate Change and Water Resources

Climate change is at the heart of water scarcity issue in South Asia. Evaporation has increased, and river flows are no longer as stable with higher temps and altered rainfall patterns, NASA say The Intergovernmental Panel on Climate Change (IPCC) has warned that South Asia will face more often and severe floods and droughts, already a flashpoint for water disputes.

Climate change is having its effect on water resources of India with the getting more erratic monsoon rainfall. The monsoon is a very crucial season for agriculture, and since its decreasing predictably these lead to droughts and floods In Pakistan, it is equally grim as glacial melt and precipitation changes are reducing the flow of the Indus.

### Significance of the Study

It is essential that policymakers and the like in the region understand further the nexus of water disputes to agricultural sustainability. Impact of water conflicts due to climate change are not limited by borders as well; water clashes in Bangladesh have impacts on food security and economy. This research project seeks to understand the factors causing such disputes with economic implications for agriculture in Bangladesh.

### Objectives of the Study

The primary objectives of this study are:

- To find out the causes of climate induced water disputes between India and Pakistan.
- To determine what these disputes have meant for agriculture in Bangladesh.

- To look at prospective pathways for reducing harm the water disputes do to Bangladesh's agriculture
- Recommendation of policy is necessary for boosting up regional cooperation and sustainable water management- To assess the contribution of local people in water management and their participation for sustainable agriculture
- To examine the role of international bodies in promoting dialogue and collaboration for water resource management among India-Pakistan- Bangladesh ...

### 2. Research Questions

1. Climate change due water disputes between India and Pakistan : What are the most considerable?

Precipitation patterns shift, evapotranspiration increases with the heat pump and water resources over- pumped— these are the basic tenets of this cocktail.

These compounds are intensified by political tumult and old appetites of animosity, with water allocation going up against each other

2. How are these water problems affecting agriculture in Bangladesh?

These water disputes results scarcity of irrigation water in Bangladesh, damage for crop yields and food security. The fluctuations of river flow patterns can lead to both high floods and droughts, thus adding more uncertainties to farming planning/sustainment.

3. How can the impacts of these disputes on agriculture in Bangladesh can be mitigated?

These strategies include cooperative water-sharing treaties at the regional level to invest in new water- conservation technologies and promote more water-efficient agriculture that needs less water.

Moreover, climate adaptation is another way to build resilience.

4. How to Engage Water Management practices in local communities and promote sustainable development of agriculture for farmers?

Inclusive institution for decision-making and using traditional practices in water management can make strategies to meet the challenge of water disputes more effective.

5. What kind of role do the international organisations play in bringing dialogue and cooperation for water resource management among India, Pakistan and Bangladesh?

Dialogue, technical support and funding for regional programmes that promote sustainable water management in the framework of international organizations can provide opportunities.

### **3.Theoretical Framework**

Research uses Political Ecology framework of interaction between political, economic and social aspects to the environmental challenges. This is especially important for grappling with conflicts over the water in South Asia, a place where water dynamics intimately intersect history and power relations.

#### **Definition of Political Ecology**

Political ecology is the study of environment (natural resource politics) through the lens of social power relations. It highlights the interconnection of political and economic in environmental policies and processes, frequently paving way to resource based conflicts. This lens helps understand the complicated problems in water governance challenges intersection of climate change & geopolitical tensions in a more elaborate way.

#### **Application to Water Disputes**

Political ecology paper can be used in the contest of India and Pakistan to understand how shared resource politics are historically grounded in past interactions, national interests, and power asymmetries molded water management. Control over upstream water resources puts India high leverage on Pakistan and Bangladesh creating tensions, squabbles. Also the political ecology framework articulates that state policies, international relations and local governance also work at water resource management.

#### **Policy Implications for Agricultural Sustainability**

It also brings into focus the political ecology framework how these disputes are jeopardizing agricultural sustainability in Bangladesh. With climate change and geopolitical competition simmering under the driest mega-droughts in at least 2000 years, farmers are struggling to produce high levels of crop yields and secure enough food. It is fundamental on this level of understanding to tailor appropriate policies

and strategies that would help combat challenges posed by water disputes induced by climate. The core of the framework stresses that we must develop inclusive governance which fully accounts for marginalized voices of water stressed and agnomegapeelite areas The Intersection of Water Management and Intersectionality One of the elements in Political Ecology is intersectionality which analyzes how different social identities (class, gender and ethnicity) intersect to produce specific experiences with environmental problems. Water disputes and water scarcity are seldom experienced equally, marginalized communities especially women farmers especially vulnerable because they often have less access to land but must also contend with agricultural insecurity. Have these intersections be acknowledged so that we can create equitable and action-oriented strategies for water management at various levels of decision..

#### **Power Relationships and Resource Governance**

Power relationships in water disputes between India, Pakistan and Bangladesh is another point of departure in understanding what kind of water issues are. The colonial baggage and the partition of India have induced a long history mistrust among resources sharing problems. Control of water resources is not just a technical problem but is inextricably linked with the sense of national identity, security perception and regional competition. This political ecosystem lens reinforces that no solution to water disputes and sustainable management will work if the deep power relations in place are not addressed.

#### **Discussion of Entities**

This section has detailed examination of three main entities: India, Pakistan and Bangladesh.

##### **India**

Since India controls most of water resources on Indus River system in principle of an upper riparian state. The country has put in various water policies to make use of them at their utmost while securing a source of clean water for its inhabitants. Yet these policies have a tendency to prioritize

domestic interests over bilateral relations with Pakistan and Bangladesh

Dams and reservoirs as part of India's water management to modify the original water flow systems are often criticized. Large scale projects like Sardar Sarovar Dam and Narmada Valley Project have caused many to worry of downstream water availability related problems, respectively. It faces an added challenge, as changing precipitation patterns and higher rates of evaporation reduce the reliability of these powerhouses. The Indian government has been called upon to take the downstream countries needs more into account to meet its own water security issues and to do so in a more sustainable way.

And India agricultural policies depend too much on water hungry crops (rice and sugarcane) which only further matters. While the Green Revolution has been able to deliver great food production, it caused an unsustainable groundwater extraction and stress to surface water resources. With its water scarcity woes, the need for a water sharing at regional level approach is increasingly urgent even as India grapples with its own related issues.

Additionally the approach to water management within India has been driven by its burgeoning population and development aspirations. Increased water demand for an expanding industrial and urban use competition resulting in heightened intensity on water resources. Various government programs have been launched to increase the water resources and cutting losses i.e., Pradhan Mantri Krishi Sinchai Yojana (PMKSY) which will increase the Irrigation coverage, promote making additional food grains from weather resistant kharif crops. But to truly get at the roots of these initiatives, there needs to be an enshrinement in regional cooperation considering transboundary nature of water resources.

### **Pakistan**

The agricultural sector of Pakistan is dependent on millions of cubic meter per day from the Indus River system which is considerable amount of its economy. Water is a scarce resource in the country with man-made challenges (by India's policies on water management) and impacts of climate

change added on top. Given Pakistan's reliance on just the one river system, it also becomes dangerously exposed to variations in water availability.

has been trying different strategies to cope with these challenges, from investment in water technologies for conservation and improved irrigation to agriculture practices. Moreover, the impact of climate change on Pakistan's agriculture is evident in the increasing frequency of droughts and floods. The 2010 floods, one of the worst in the country's history,

highlighted the vulnerability of the agricultural sector to extreme weather events. The government has initiated programs aimed at enhancing resilience, such as the National Climate Change Policy, which emphasizes sustainable water management and agricultural practices.

Its geopolitical context have also shaped the water management policies of Pakistan. While the country has tried opening up dialogue with India over their transboundary water issues, this too has been bogged by politics. A systemic change in both domestic water sector reforms and regional cooperation is critical for the sustainability of Pakistan's agricultural sector.

### **Bangladesh**

The Ganges and Brahmaputra River systems are major sources of irrigation water in Bangladesh, which supports agriculture intimately linked to these crucial systems of supplying water.

Water disputes are a severe concern for the country water routing between India-Pakistan is very fragile and any disruption in flow leads to floods or drought. Climate change and geopolitical tensions are placing new pressure on an agricultural sector that employs much of the population.

Water conflicts effects on agricultural output can be observed through different parts of Bangladesh. Farmers are generally under water, with crop productivity levels leading to less food and increased food insecurity. The government along with NGOs are trying to facilitate the adaptation strategies (for e.g. development of drought-tolerant crop varieties and better irrigation infrastructure) and resilience in agriculture.

Moreover, the socio-economic impact of water scarcity is tremendous. Agriculture-

based rural areas are increasingly at risk of poverty and malnutrition. The Government has acknowledged the importance of integrated water resources management that integrates inter-sectoral relationships between water, agriculture and food security etc.

The sustainable water management practices and adaptation strategies to climate change are needed to maneuver these challenges as part of the Bangladesh Delta Plan 2000.

### **The Three are Interconnected**

Water-dependency and web of challenges being linked with water resources on the lines of dependency among India, Pakistan and Bangladesh intertwines the interconnectedness. Climate change has its own burden when one country's actions will affect the other, especially pertinent in this day and age. Water management policies in India for ex:- Impact on the availability of water in Pakistan & then impact on agriculture in Bangladesh (the inter linkage is direct). This bianguarinate requires a governance approach to water management, that balances the demands and exposures in all the three countries.

It is vital that regional cooperation is successful in order to tackle problems resulting from climate-driven water disputes. Collective efforts can result in the establishment of mutually balanced water-sharing agreements for sustainable development for all riparian states. Also, sync efforts towards climate adaptation and water saving should fortify the resilience of each agricultural sector of the 3 countries.

### **4.Impacts on Agriculture of Bangladesh**

Climate water disputes consequence in Bangladesh agriculture is huge and multi-dimensional as well.

#### **Water Scarcity and Irrigation Problematics**

For instance, reduced water flow has caused very acute irrigation problems in Bangladesh from upstream countries. River Water-dependent farmers in the semi-arid region are unable to keep irrigating at a constant pace leading fewer crops yield. The implications of water scarcity in the northern part of Bangladesh exemplify how farmers can be forced to change their planting

patterns, and move towards less/less water-intense crops due to less availability. A change that is essential, and yet against age old agricultural ways leading in loss of food diversity.

Surface water dependency on irrigation than putting the agriculture community at risk of considering those upstream water management decisions. E.g., in the Ganges and Brahmaputra rivers during low flow, farmers have found significant decrease in rice and jute productions which are the backbone of the country. Fewer irrigation sources in place have led farmers to adopt increasingly expensive groundwater extraction methods, squeezing their financial resources and into unsustainable pathway

Core international organizations can facilitate dialogues and collaborations between India, Pakistan and Bangladesh. This could include hosting forums for dialogue, seed funding and technical assistance to invest in large-scale collaborative initiatives that promote more collaborative approaches to water management in South Asia. It could also be through involving international stakeholders, who may mediate the disputes and lead to greater compliance with agreements by all parties.

Implications for Food Security Relationship of water and food production in Bangladesh Water is the best, it really matters for Bangladesh. Water disputes lead to decrease in food production and, as a result, the food security implications are alarming. Already with the ever growing number of inhabitants and difficulties meeting demand the reducing agricultural productivity, means the potential for more malnutrition and poverty. Many families living in rural communities have determined the fate of their area to crop farming.

The pace that the government is trying to tackle food security problems is evident as they have been implementing solutions to make agriculture more resilient and also diversify food. Yet the overlapping water disputes together hinder these attempts requiring holistic water management and agricultural sustainability. Higher food prices could result from small decreases in supply and thereby contribute to a rise in price volatility, thereby provoking social

unrest and heightened susceptibility among the poorest populations.

### **Adaptation Strategies**

Farmers from Bangladesh are using different adaptation strategies to face up the water conflicts. Which consist in diversifying the crops (and the more efficient use of rainwater harvesting techniques, with improved irrigation method). Government and NGO role is significant to support these initiatives, by training, resources for enhancing agriculture resilience. And local community-based water management projects are also catching on

Another major contribution of resilience is within the integration of traditional knowledge into current agricultural practices. Often local communities are knowledgeable on sustainable farming that has been handed down from their ancestors. Can Bangladesh Develop Better strategies to address water scarcity and climate change through the harnessing of indigenous practices combined with science?

### **Socio-Economic Impacts**

Water disputes have implications for agriculture productivity, over and beyond the crops. This will drive up migration from rural to urban areas with water scarcity, in the name of opportunity. Urban resources and infrastructure are stretched by this migration exacerbating management of water, food insecurity etc.

Also, the loss of livelihoods in rural areas can lead wider poverty and inequality in the social deprivation that is hard to escape a pathway to crisis.

Water scarcity has the most striking economic consequences in rural areas where agriculture constitutes the main source of livelihood. The increased debt and financial stress created as farmers battle to survive. That, in turn can result to a rural underdevelopment and zero-inputs for government assistance programs leading to over utilise/straining national resources .

### **The gendered expression of water scarcity**

Water scarcity rarely affects women as the core production in agricultural or primary food security of the household. In rural areas of Bangladesh, women often have water responsibilities both for domestic use and

irrigation for agriculture. Water scarcity increases the pressure on women to access water for their families and crops as well. Which exacerbates gender inequality and increases stress further from reduced economic activity.

Equitable and sustainable agricultural practices require gender-sensitive management of water availability. Many studies have shown that educating women on projects with resources significantly increases their contributions to agricultural productivity and community resilience as well.

More participatory and inclusive strategies are addressed coming from projects emphasizing women's participation in management of water resources decision-making

### **Transboundary Water Cooperation and Sharing Arrangements**

South Asia needs to work more together on the sustainable use of water in order for any of these things to be possible. DIALOGUE-Between India, Pakistan and Bangladesh can lead to better deals over water sustainability for the needs of all the countries all over. International examples from similar regions, such as the Nile basin initiative can be models of how collaboration can be strengthened and tensions alleviated. This could allow for ongoing discussions and negotiations by involving the regional water management body, keeping all interested parties in the loop throughout decision-making processes.

### **Water Conservation Technologies for Investment**

Water conservation technologies are important to upgrade water efficiency in agriculture because these technologies can significantly save water. Farmers will also need to be able to adapt to fluctuations in the availability of water through techniques such as drip irrigation, or harvesting rainfall and growing drought resistant crops. Government subsidies and investment of research and development can help to come in adoption of new practices. Also, public-private partnerships can help wider the uptake of water-saving technologies.

### **Encouraging Agriculture Practices for a Sustainable Future**

Agriculture requiring less water and thus sustainable agriculture practices to be promoted faced this is the need of enhancing resilience in Bangladesh's agricultural system. Farmers training programs on sustainable agriculture, soil conservation and integrated pest management can increase productivity under reducing water use. Moreover encouraging agroecological practices can increase biodiversity and soil health to ensure long term agricultural sustainability.

Government can also help in the beginning of farmer co-operatives towards sustainable practises i.e. they should have collaborative resources and experiences. Farmers can work together to take a community based approach on issues such scarcity water or climate change.

### **5.Mitigation Strategies**

Some of the mitigating the negative impact of water disputes on agriculture in Bangladesh are strategies -- Water sharing agreements with the neighbouring regions

In South Asia, there is an urgent need for regional cooperation to enable sustainable use of water resources in managing water.

Dialogue among India, Pakistan and Bangladesh can help in devising more equitable water sharing arrangements that would fulfill the needs of all adjoining countries. Successful themes from other places, like the Nile Basin Initiative are models from which we can learn and reduce tensions between rival nations. Regional water management body could continue dialogues and negotiations, making all stakeholder voice heard in every decision-making process.

### **Water Saving Technologies (Investment)**

Water conservation technologies need to be invested in to increase water efficacy in agriculture. Methods that can assist farmers adapt to changing water availability include drip or trickle irrigation, rainwater harvesting and crops that are drought tolerant. This can be done in the ground by providing government subsidies for research and development within these fields. Public-private partnerships are also critical in

facilitating the deployment of water-saving technologies.

### **Supporting Sustainable Agriculture**

Supporting the shift towards agriculture that needs less water is a necessary strategy for strengthening resilience in Bangladesh agriculture sector. Farmers Training on sustainable farming methods, soil conservation and integrated pest management are some of the ways to increase productivity with less use of water. In addition, more work on the ground toward agroecology would increase biodiversity, soil health and long term sustainability for agriculture.

### **6.Concluding the research**

South Asia's water, which will spoil you dry one river basin anywhere means war the time of siloed water is over this entire and We have to go with collaborative water management.

Complexity of the current dispute is to some extent a function of the colonial legacies and geopolitical tensions that inform these longstanding issues but this needs to stop. This research project indicates that especially the necessity for regional cooperation and sustainable water management system under climate change is an urgent evidence; as case of Bangladesh in food crops IT IS A BIG ALARM TO DEAL. It also results in nuances of local community participation and involvement in the decision making process, sustainable agricultural practices as a way for fostering resilience.

Role of international bodies in promoting dialogue and collaboration on the part of India, Pakistan and Bangladesh is significant to confront climate-initiated water disputes that these three countries are facing. Organizations are able to support the development of a more cooperative approach to water management in South Asia through providing technical assistance, financial and venue for dialogue. Finally, climate driven water conflict is not a zero sum game that affects only countries directly involved in the water disputes of food security, economic stability and social equity in Bangladesh. It is of the utmost that all those comprehensive plans that treat water management and an agricultural

sustainability should be taken seriously. Integrated approaches must be integrated into policies, which take into account transboundary challenges as it relates water resources and agriculture and climate change.

Critical steps to build resilience in the Bangladeshi agriculture sector include the enforcement of basin wise water sharing agreements, promotion of water conservative technologies and sustainable agricultural methods. In addition, integrating the local communities and building effective legal frameworks will guarantee that water management strategies would be just and effective.

This demands that the necessity for collaborative action by India, Pakistan and Bangladesh over climate change be brought to a larger limelight with the manifestations of its impacts continuously registering. Working together, these countries can find new and more sustainable ways of addressing the problem posed by water scarcity and climate change in order to secure a future for its agriculture sectors, that in turn support millions of farmers with their life-lines. The way forward is to chart a course of dialogue, cooperation and shared stewardship in the management of the water resources of a region once considered a bottomless pit. Only through collective action can the countries of South Asia find ways to do the hard things required and secure food security and sustainable development for generations to come.

### **7. Recommendations for Future Research**

Conclusions for Future Research on Impacts and Adaptation of Climate Induced Water Conflicts in South Asia Water availability and agricultural Productivity over time-longitudinal studies

Longitudinal studies that examine alterations in water availability and agricultural productivity through time may provide crucial information on the consequences of climate change and water conflicts. Such studies can shed light on patterns, guide policy and establish effective strategies for adaptation.

### **Community-Based Research**

Involvement in community-based research that integrates local farmers and

stakeholders can give a better lived challenges and responses to water scarcity. Research like this can possibly bring out the traditional knowledge and practices which may get missed in global plans, and thus offers a more holistic approach towards sustainable water management.

### **Policy Analysis and Evaluation**

Future work should further the analysis and evaluation of existing water management policies in India, Pakistan and Bangladesh as well. Studying these policies and identifying their strengths and weaknesses is crucial to develop more useful frameworks that can facilitate regional cooperation, benefits for people and sustainable livelihood.

### **Climate change Impact Assessments**

This can be done feature-wise about vulnerability due to climate change and agricultural sector in Bangladesh so that climate change impact assessments be conducted more specifically to targeted areas or community. These assessments can also help to point towards the direction of where targeted interventions and resource allocation could be needed for building resilience.

### **Technology Element in Water Management**

Other areas of future research should include the role of technology in better water management practices is another. New to this research effort will be consideration of different tech suite approaches including remote sensing, data analytics, smart irrigation systems etc. that can be undertaken to assess how technology mitigates against reducing water use but enhancing productivity.

### **International Cooperation Mechanisms**

Further research on international cooperation modes and architectures that have proven effective in other regions can be one of the main resources to learn lessons from South Asia. Examining the use of these mechanisms in the specific context of India, Pakistan and Bangladesh might help to better cooperate over shared water resources.



### Account of Gender and Social Equity in Water Governance

Future research should likewise delve the gender issues of water administration and the social equity of water disputes. Different social actors could respond dissimilarly to water scarcity / agricultural challenges and building the capacity for a more inclusive solution strategies. Focusing on these aspects, future research can further elucidate various dimensions of complexities that are involved in climate induced water disputes in South Asia and help in the design and implementation of more effective strategies for sustainable water management & agriculture resilience.

### REFERENCES

- Brahmaputra River Basin. (2021). Water Resources of South Asia: Problems and Prospects South Asian Journal of Water Resources. South Asian Journal of Water Resources
- Indus Water Treaty. (1960) Between India & Pakistan on the Indus waters. Government of India Resources of Government of India
- (FAO) Food and Agriculture Organization (2020) Climate Change and agriculture: impacts on Adaptation strategies. FAO (2020) Retrieved from FAO
- The Intergovernmental Panel on Climate Change (IPCC). (2021). Climate Change 2021: The Physical Science Basis Cambridge University Press. IPVR Click here to access
- Bangladesh Delta Plan for 2100 (2018). Government of bangladesh. Ministry of Water Resources Reviewed on Bangladesh Delta Plan
- National Climate Change Policy(2012). Retrieved from Pakistan (Govt.)
- Judgement Conflict Assessment and Policy Goal Mekong River Commission (MRC) (2020). Strategic directions for Development on Mekong River Basin Retrieved from MRC
- Nile Basin Initiative (NBI) (2020) Shared Vision Program. Achievements and Future Directions. Retrieved from NBI
- U.S. Bureau of Reclamation, obtained from Roger Raloff (2015), The Colorado River was redirected to irrigate the dry land as well as solve a short-term crisis that has devolved into decades-long flows notwithstanding 900%).... Colorado River Compact (1922). Innocence among the States of the Colorado River Basin.
- World Bank (2019). Water Scarcity and Food Sec. In South Asia: A Review of the Evidence ReportWorld Bank. In World Bankitates
- Sustainable Development Goals (SDGs). The United Nations General Assembly Resolution 70/1 (2015). Retrieved from United Nations
- Khan M. A. Hossain M (2020). Water Scarcity and the Effect on Agriculture in Bangladesh: A Review. Journal of Water Resource and Protection 12. Retrieved: Journal of Water Resource And Protection.5,545–345-6055 DOI: 10.4236/jwarp.2020
- Rahman MM Rahman MA (2019) Climate Change and water resources of Bangladesh — Challenges & opportunities inEnvironmental Science & Policy 101:010020-0 doi:10
- T. & van der Blik, J., Water management in South Asia: an overview of the challenges and opportunities, Water International 43 (5) ,635-50. doi: 10.1080/02508060.2018.1490523
- Zhang Y.Wang Y. (2021). South Asia Ocean Transport Management- The current status and future directions. Water Resources Management 35(3), 789–803 doi: 10
- Bhaduri A, Ranjan R (2020) Water conflicts of south Asia: A Review of the literature. Journal of Water Resources Planning and Management, 146,0402019doi:10
- Haq (2019). A historical analysis and appraisal of the Indus Water Treaty in Pakistan—a Journal of South Asia International Law 23(1) pp: 1 10. doi: (10).
- Kumar, Rajesh and Singh, Rupakamala. (2020). Climate Change and Water Resources in India : Impacts with Adaptation Strategies. Indian Journal of Environmental Protection 40(3): 234–240 10.