Water Economics and Governance Prof. Manoj Kumar Tiwari Department of Ocean Engineering Indian Institute of Technology, Kharagpur

Lecture – 59 Global Water Diplomacy: Conflict vs Cooperation

Hi everyone. So, we will continue the discussions on global water diplomacy from the previous session when we were discussing about the major reason for such conflict or the major issues.

(Refer Slide Time: 00:31)

ailure of climate-change mitigation and adaptation \$\$36.7% Extreme weather events \$\$26.5% Food crises \$\$25.2%	Water crise	s 🗖				= \$ 39	.8%	
	ire of climate-change mitigation and adaptatic	on 📖			-	\$ 36.79	6	
Food crises \$25.2%	Extreme weather event	ts 📼			\$ 26.5%	5		
	Food crise	s 🗖			25.2%			
Profound social instability 23.3%	Profound social instabilit	ty 📼	_	•	23.3%			

So, the world economic forum in 2016 has basically assessed a top 5 concerns for global risk, which can lead to the highest issues or highest concern in the next 10 years and as per that the water crisis with around 40 percent of the sort of votes were topped the list.

So, people are of the perception that water crisis is one of the major one, the most sort of the most highest concern for a global risk in the next 10 years. Then, there is the food crisis and all that follow later this, the climate change mitigation is placed at the second rank. So, that is how the world perceives about the about the risk related to the water disputes at international scale.

(Refer Slide Time: 01:36)



Now, while there has been conflicts related to the water and there are chances of the water turning into the conflicts, water issues turning into the conflicts particularly at the trans boundary waters and such conflicts have been seen in few international basins. There are many shared basins which sort of have very nice cooperation and manage the basin in a fairly positive way without too much of the conflicts. So, there are many such examples are also there.

There are over around the close to or may be little higher at present around 300 ah, this treaty is related to the international waters and many of them are actually working fine ok. There has been some disputes from the time and again, but still these kind of cooperation and relations survive you can take example of India and Pakistan. So, we have a treaty with Pakistan, Indus water treaty which was signed back in around 1960 and it is still surviving in spite we have had several military infiltrations and military level war and national disputes there, but still this treaty is more or less still surviving.

So, that is the kind of examples for cooperation as well. Now, the it is very important to realize that whether what one can achieve from a conflict and what one can achieve from a co operation. Since we are talking about trans boundary river. So, whether conflict or a kind of co operation, it does not depend on a single player ok one nation, one single nation, if we want to have some sort of cooperation and it is not getting dual support from the others it becomes very difficult for the nation.

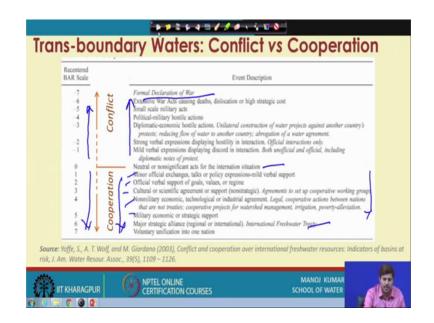
So, that is why particularly for cooperation purpose it is essential that all the players join hands together and then only we will be able to achieve some sort of co operation. On the other hand in a conflicting situation people have their own set or different agendas and that takes us nowhere, because somebody is trying to fulfill its own agenda while there is agitation from the other side.

So, eventually the issue can turn very big and at in today's time when the whole world is watching, whole world is basically aware of this and there are a lot of pressure from the international communities, it becomes very difficult to sort of do the monopoly over such things. Still some players are or some nations are doing it, but it still it in due course of time positively even that will be scrutiny under the international laws or some sort of co operation.

One more very important aspect related to water conflict or cooperation is, water is a resource which is something which cannot be like as one cannot grab it completely, one cannot steal it ok. Somebody can come in a nation and loot it for all its precious articles and those kind of things, but nobody can loot or nobody can steal water that way, of course, upper riparian state can stop the flow and those kind of things can happen, but its that to within a limitation particularly because if one cannot prevent all the water or excess water because that will disturb the course of the entire environment over a period of time.

So, this thing is that that it actually calls for a corporation. There is interdependency on each other and without a healthy cooperation, without a healthy without under properly understanding even somebody at say aiming for short term benefits, it may not actually sustain in a longer run.

(Refer Slide Time: 06:00)



So, there has been sort of studies conducted, lot of studies conducted on the international or trans boundary water conflicts. So, 1 article by Yoffe, which is on the conflict and cooperation of the international freshwater resources. So, he developed the international sort of indicators matrix and based on that says that it can actually the water can the issue can be under conflict of cooperation based on where it lies in this scale.

So, neutral or non significant act when neither lead cooperation and nor lead any sort of dispute or conflict while there could be mild verbal expression which is displaying the discord of the interaction. It could be both on official or unofficial level, is the first step or first order or first degree of conflict. Then, it could basically turn stronger for second then diplomatic and economic hostile actions are taken, the protest takes place or the abrogation of water agreement, these things takes place it can turn in a larger conflicts.

Then if political military hostile actions are sort of adopted, it is going to turn to bigger conflict for small scale military acts it is rand as minus 5 scale, minus 5 in on an indicator scale of the conflict, which is just a couple of orders lower than the most serious. Then extensive are acts causing death dislocation or high strategic cost are a major conflict and then formal declaration of the war is the worst possible conflict in terms of the water which was ranked at minus 7.

So, from 0 to minus 7, slowly moving towards up in the scale and they were up in the order of the conflicts and ultimate one being the formal declaration of the war. On the

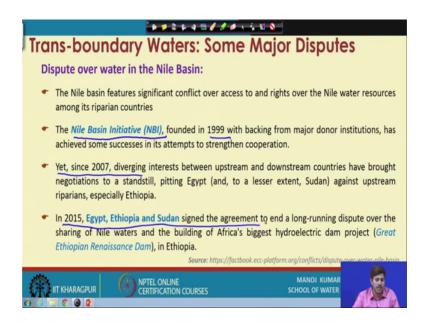
other hand, there is on a cooperation scale if one sees. So, the minor official exchange that takes place on policy expression and mild verbal support will start the initiate the co operation will be the first order of the cooperation. Then official verbal support and goal will lead to the further cooperation cultural and scientific agreement in support of the water or agreement to set up the co operative working groups, those kind of agreements will lead to the next degree which is third degree of co operation.

Then, then nonmilitary economic technological and industrial agreement taking place on a legal based, market based, policy based or cooperative project takes place based on the irrigation, poverty allocation in a jointly by the nation is the next degree of the co operation. Then, military economic and strategic support if it comes it is the another degree of cooperation. If it forms a major strategic alliance on a regional and international scale it, if it undergoes some international freshwater treaty that is the another level or the second highest level of the cooperation and as per the study or as per the report the voluntary unification into 1 nation is the highest degree of co operation.

So, highest degree that is how the cooperation increases. So, that means, when basically the highest degree of cooperation when the two nations decides to basically merge their political boundaries voluntarily and become one nation. So, that is the best way to cooperate in terms of such issues highest degree of cooperation. Otherwise even if like you take even if nations are taking any positive step, they are ranked positively, while not considering the resource allocation in equitable manner or creating some sort of conflict or not being in to verbal or diplomatic or political or military conflicts will lead to the higher and higher order of the conflicts.

So, that the paper suggested that the conflicts as well as cooperation can be ranked from a scale of 0 to 7 co operation positive and conflicts on a negative scale. So, that is how the importance of this.

(Refer Slide Time: 11:14)

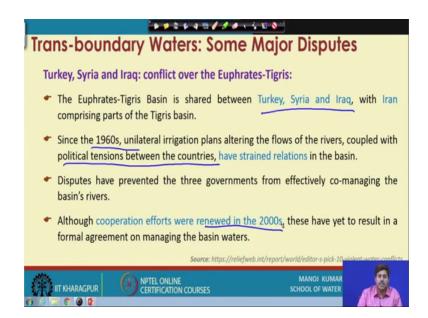


Now, let us look at some of the major water disputes on Trans boundary waters was the dispute over the water in the Nile basin. So, this is a river which has around 10 or 11 riparian countries involved in it. So, it is a, that way a large Trans boundary. This there has been significant conflict over the access to and right of the water over the Nile water resources among the countries.

So, in order to look after that there was a NBI, which is Nile basin initiative was founded in 1999, back in 1999 and it was backed from the major donor institutions and has achieved some success in managing or attempting the strengthening the co operation between the riparian states, riparian nations. However, since 2007 basically the disputes become again more apparent, particularly because the upstream nation which is Ethiopia was there. So, they are Egypt and to some extent even Sudan started having points or this thing against the upper riparian Ethiopia. The interest was negotiated to a standstill point; however, the Ethiopia was actually planning to make a big hydroelectric dam project.

So, in relation to that, in 2015, a sort of agreement was signed to end this long running dispute over the sharing of the water and building of the Africas biggest hydroelectric dam project, which was great Ethiopian renaissance dam which was supposed to be build an Ethiopia.

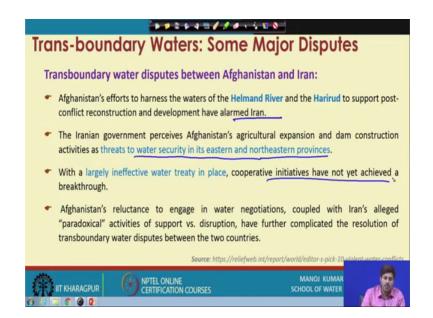
(Refer Slide Time: 13:39)



So, that sort of another agreeing took place in 2015 and since then it is still there although there has been still little issues but the co operation is also being managed or maintained under this agreement. Then, you trust it is conflict between Turkey, Syria and Iraq is another major international dispute, where the water is shared between Turkey Syria and Iraq and Iran also comprises part of this Tigris basin.

So, in 1960 it is very like old that way. In 1960 there was a unilateral irrigation plans. So, each nation is having its own irrigation plan which alters the flow in the river and this created lot of political tensions between these countries and have strained relations in the entire basin. So, dispute have prevented the governments particularly governments of Turkey Syria and Iraq from effectively co managing the river basin because of these disputes. So, there has been cooperation efforts were which were renewed in the 2000s, is still these are yet to result in a formal agreement and the tensions are still prevailing in the basin.

(Refer Slide Time: 15:00)



So, then there are Trans boundary disputes between Afghanistan and iran. So, Afghanistan efforts to harness the water from the Helmand River and the Harirud to support sort of post conflict reconstruction and development has again alarmed Iran. So, Iran has again sort of started creating or making objections to the Afghanistan plan. So, the Iranian government perceives that Afghanistans agricultural expansion which he is planning and the dam construction activities which it is involved in is actually a threat to water secure in the eastern and northeastern provinces of the Iran. With the largely ineffective water treaty in place, there is a water treaty their water treaty exists, but its largely ineffective.

The co operative initiative have not sort of resulted in any significant development and Afghanistan is sort of reluctant to engage in the water negotiations because for water co operation as we were discussing, one has to have the one has to have the support from all the parties and if 1 nation is not engaging in the negotiation, it becomes very difficult to come up with a plan can come up with a cooperation plan which can actually be implemented.

So, this kind of situation far more dangerous and turns you know far more bigger conflicts in general. So, Irans is alleging for the paradoxical activities of support versus disruption and Afghanistan is reluctant to basically engage in any sort of negotiation. So, this has a long standing dispute between the countries and is basically creating problem in the basin.

(Refer Slide Time: 17:14)



Then there are dam project and disputes in the Mekong river basin is another big international issue particularly because of the scale of the countries involved. So, this Mekong river basin is witnessing enormous expansion of dam building for hydroelectric generation in China. The China is making several dams on the river for the purpose of a generating hydroelectric power. Now, this has led to the diplomatic tension in the downstream countries of the dam.

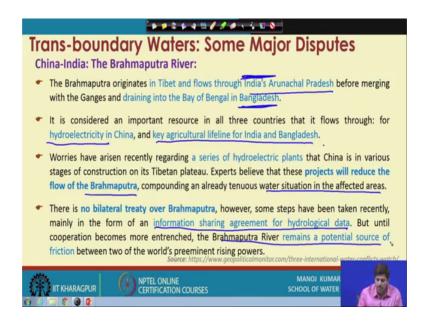
So, there are a Myanmar, Laos, Thailand, Cambodia and Vietnam. Even in fact, the Laos also to some extent is because of the next after China, it comes to the Laos and Laos is also planning to build some dam and all that and it still gets some water because it has to follow go to the further downstream countries, but the still like all these countries, all these nations Myanmar, Laos, Thailand, Cambodia, Vietnam they have sort of a fear of the adverse impact of the negative impacts that the dam building activities of China is going to have on these lower riparian states because china building so many dams will stop water at different levels and then from there is chance of lack of water coming into the lower riparian state while if in particularly the high flood season because China has a storage capacity. So, it can release bulk of water together and that will lead the flooding conditions in the lower riparian countries.

So, those kind of risks are there, those kind of negative impacts are perceived and that is what is leading to the diplomatic tension. This Mekong river commission was basically established, but it remains more or less ineffective in resolving these tension so far and that is primarily because its lack of enforcement power and it first thing it does not have the enforcement power over China and China is reluctant to join this as a full member.

So, when China is reluctant or is not willing to join the commission or not willing to basically collectively see the issue, that is what their there is what problem being aggravated. Similar to the earlier case what we are discussing with the Afghanistan not willing to engage in the negotiation, China is not willing here to engage in the negotiation with all member countries. Although instead it is trying instead of joining the, this Mekong river commission, what china is trying to engage in the downstream riparian by literally. So, having discussing with each riparian nation individually and. In fact, proposing to make build some dams in the lower riparian states as well, but that is what that is not probably going to serve the purpose in the entirety.

So, without more formalized cooperation especially between the lower riparian countries and China, it is going to basically the dispute is going to stay, the conflict is going to further deepen and contemporary dam building activities of china will basically be likely to act as a destabilizing force in the river basin. So, that is another point of major disputes as on a multinational level.

(Refer Slide Time: 21:12)



China has dispute with India also over Brahmaputra river and here also China is upper riparian state and India is the lower riparian state. So, the Brahmaputra river which originates in Tibet and flows through the Indias Arunachal Pradesh and then eventually merges with the Ganga and drains into the bay of Bengal in Bangladesh. So, it is not only with India, India and Bangladesh both are the parties to this and this Brahmaputra river is one of the very prime rivers, one of the very important resource it is as perceived, it is very important resource for all the countries involved ok. Although the prospective is different,

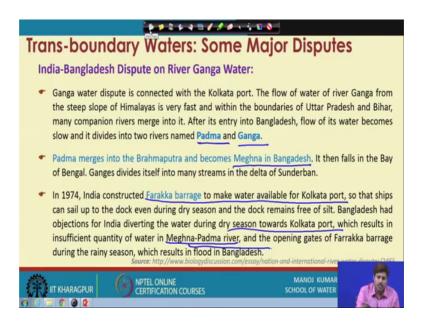
The China purpose, China actually is harnessing hydroelectricity from the river. So, China is trying to because the energy demand in China is very high. So, China is helping to generate hydroelectricity from many rivers and just earlier we were discussing the case of the Mekong Rivers, in Brahmaputra also china is planning to make a series of hydroelectric plants through dams and reservoir and that is what is leading to sort of issues and leading raising concerns for the India.

So, the Brahmaputra river is utilized for hydroelectricity in China, while it is a key agricultural lifeline for India as well as Bangladesh and these worries have arisen in both the nations India and Bangladesh over a series of hydroelectric plants that China are constructing in its Tibetan plateau. So, these projects are in a different scale and experts believe that these projects will reduce the flow in the Brahmaputra because if it is water is prevented from the dam construction. So, it is likely to reduce the flow in the Brahmaputra and that will compound the already aggravated or already poor water situation in the affected areas in India as well as in Bangladesh.

The issue here is again that there is no bilateral treaty or Brahmaputra exist. India is trying to have one, but China is reluctant and; however, in the recent government there has been some steps taken up. There has been a information sharing agreement on hydrologic data has been signed, formal agreement on the information sharing only though it is not a proper water sharing treaty as it is, but there has been at least information sharing agreement has come up.

But until co operation becomes more sort of formalized more balanced, this Brahmaputra River remains a potential source of friction between the world's two most populated and two most prominent rising powers.

(Refer Slide Time: 24:40)

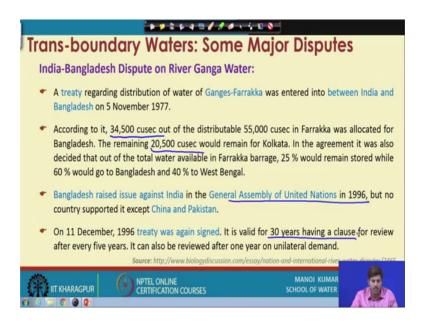


So, that is another point of possible dispute in higher degree of dispute in future. India has dispute with Bangladesh also over river Ganga water. So, Ganga water dispute is connected with the Kolkata port basically. The Ganga water which actually flows from the Himalayan region and comes very fast and then in up and Bihar, it meets with the several other rivers where river merged into the Ganga act as a tributaries of Ganga and after that it eventually enters into Bangladesh flow becomes slow and it divides into 2 rivers, Padma and Ganga.

Now, the river Padma eventually merges to Brahmaputra and then it is called Meghana in Bangladesh, that becomes Meghana and it eventually falls in the Bay of Bengal, while Ganga divides itself into several streams and merges into the delta of the sunder ban. So, around that side the Ganga Sagar side in 1974, India constructed Farakka barrage to make the water available for Kolkata port the idea was because the Kolkata which was one of the prime cities for as a water port.

So, in the India wanted that ships to sail through the dock, even in the dry weather season when the flow is low and in order to ensure that they need water in the river up to Kolkata port and that is why they created the barrage in order to basically divert some of the water towards the port side in dry weather season and also keep the also keep the dock remain free of the silt. The other hand Bangladesh had objections for India diverting the water during the dry season at Kolkata port because diverting the water in the dry season will are was expected to result in insufficient quantity of water in the Meghna Padma river and then opening gates of the Farakka barrage during rainy season could lead to the flood in the Bangladesh. So, problems were similar of the dram dam construction that in dry weather season there will be low flow because flow will be retained and will be diverted towards Kolkata while in the high flow seasons, if India opens the gates or more number of gates it is likely to basically create flood situation in the Bangladesh.

(Refer Slide Time: 27:24)

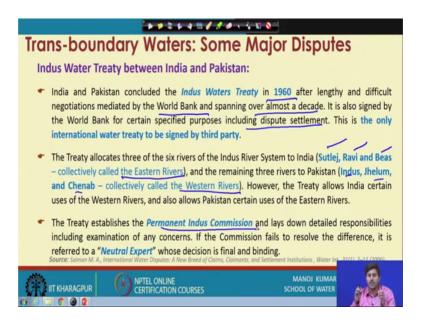


So, a treaty was signed on the Ganga Farakka and both the nations India and Bangladesh entered into the treaty in 1977 and according to this treaty around 34500 cusec water out of the distributor out of the total 55 cusec water which was distributable was allocated to Bangladesh and remaining 20500 cusec was sort of went to Kolkata. The agreement said that out of total water available, 25 percent would remove remain stored in the barrage ok. So, barrage will keep 25 percent of water stored always and of the rest 60 percent to Bangladesh and 40 percent to the west Bengal.

Later on Bangladesh raised issues against India and actually their prime minister delivered a lecture also in the general assembly of the united nations in 1996 against India charging that the Bangladesh is facing issues because of this Farakka barrage in India. That lecture that statement was supported by China and Pakistan; however, all other countries did not, no other countries came in the support, it was not supported by anyone else apart from the China and Pakistan,

Probably because of the political conflicts India shared with the China and Pakistan. So, then in December 1996 again a treaty was resigned, treaty was signed again and which is valid for 30 years and then India and Bangladesh are now under the treaty and that is being followed and honored. So, it is kind of at now the cooperation is working as per the signed agreement.

(Refer Slide Time: 29:33)



Then Indus water treaty between India and Pakistan is another example of dispute or one can say cooperation as well because the India and Pakistan entered into this treaty back in 1960 and this was a very lengthy and difficult negotiations and these negotiations was mediated by the world bank and this sort of went on for almost over a decade.

Then in 1960 the treaty was signed, it was also signed by the world bank. So, this is the only international water treaty to be signed by a third party. Otherwise all such treaties all such international treaties have always been signed by the 2 parties only or not 2 means it could be many party, but there was all the parties which were involved no independent party. While here in Indus water treaty is the only treaty where the involved parties India and Pakistan have signed, but apart from that a neutral third party world bank also signed the treaty and there were certain specified purposes and duties of the world bank under that treaty and that included dispute settlement as well.

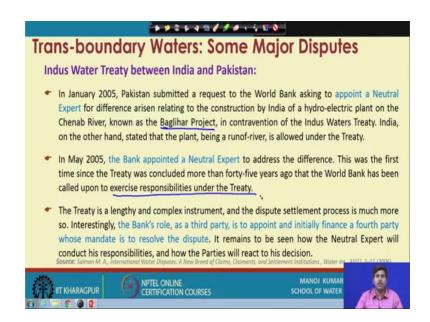
So, many of the all other duties have almost completed of the world bank. The only like there was some funding and this kind of terms were there. So, all that has been fulfilled; however, the dispute settlement issue still remains and this is the only international water treaty which considers the which which has been signed by third individual party.

So, this treaty allocates three of the total six reverse systems to India. So, the Sutlej river Ravi and Beas has come into the Indian jurisdiction and these are collectively called the eastern rivers, while the remaining three rivers, Indus Jhelum and a Chenab went to the Pakistan and they are collectively called the western rivers of the Indus valley. So, our treaty means although the eastern rivers were allotted the water of the eastern rivers were allotted for India to to India for use water of the western rivers were allotted Pakistan to use; however, treaties treaty still allow India of certain uses of the western river and also allowed Pakistan of certain uses for the eastern river. So, India could still use western river for some applications and Pakistan could still use eastern river for some applications. Though the allowable uses for India of western rivers are far more higher or greater as opposed to the allowable uses to Pakistan of the eastern rivers.

So, the treaty also established a permanent Indus commission and lay down a detailed responsibility including examination of any concerns or question which arise. So, this permanent Indus commission has the responsibility, they were basically a representative from both the countries and it has duty or responsibility that if any concerns or question arises over the treaty. So, they will try to discuss an amicably solve that and if commission fails to resolve such differences or such issues or such questions it the question is to be referred to a neutral expert whose decision is going to be the final and binding. So, that was there in the treaty.

Now, the problem is the kind of political scenario the kind of political system India and Pakistan shares, it becomes very difficult for the this committee Indus commission to resolve the issues because India and Pakistan are in a state of conflict over politics state of political conflicts

(Refer Slide Time: 33:49)



So, such resolution typically is although it is mentioned, but has never been seen. Moreover such issues also did not arises on small issues were settled within the commission, but in January 2005, Pakistan submitted a request to the world bank for asking appointment of a neutral expert for differences arise and related to the because India was planning to construct a hydroelectric plant on Chenab river which was known as Baglihar project. So, the Pakistan opposed this and said that because Chenab river is allotted to Pakistan. So, India cannot do that and they went to the World Bank asking for the appointment of a neutral expert, for the first time ok.

So, India said that it has it has been allowed some uses and being a runoff river it is allowed to basically construct those sort of project under the treaty which Pakistan opposed. So, in 2005, a bank, world bank appointed a neutral expert to address the differences. So, this was the first time since the treaty was concluded in 1960. So, there were almost 45 years after the world bank has been called upon to sort of exercise its authority and under the treaty and then world bank appointed a neutral expert. Although the decision of the neutral expert has also not come yet and the treaty has lot of because it is one of the very big treaties there are around 150 page treaty. There are various clauses and the sub clauses. So, it is a very lengthy and complex instrument in in a way and the dispute settlement process is also much more complex that way.

So, the World Bank rolls in a particularly in a dispute resolution if you see. So, is a third party World Bank acts as a third party because it is not invo involved from India or Pakistan side. So, its act as an independent third party. Now under this treaty it has to

appoint a neutral expert. So, neutral expert is kind of the fourth party, again a fourth neutral party. So, world bank will appoint and initially finance a fourth party who is meant, who is who will basically look after the case and try to resolve the dispute.

So, there is an involvement of third party as well as fourth party in this dispute resolution and that is the unique feature of this treaty. Now, it remains to be seen how these neutral expert tackles the issue because that is still under consideration. So, these are the some of the major water disputes over international rivers. So, we end this session here and we will talk about co operation and some international norms in the next session.

Thank you.