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**MASHROOF
HOSSAIN:**

So thank you very much for the opportunity of the presentation. So today, I will be presenting about the Ganges water conflicts between India and Bangladesh, which is actually one of the major bone of contents that's happening between the two neighboring countries.

So I will be speaking about-- it is basically-- it follows three flows. The first part, will speak about from where the problem originated. And the second part will say that-- what is the present condition.

And the third part will be steps, which I think will be the most relevant part for our class. That is the water diplomacy part on how we can actually approach that problem, and how we can try to find a solution. So let me go to the next slide.

So I would be putting a little bit of disclaimer. Some part of my discussion might not match with Bangladesh government's official view. So I would-- this is important because of years of training-- because I am not an academic-- because of years of training, two things happen.

The first one is subconsciously-- and I have found it even when I've taken classes in Japan or in the US-- that's automatically, I actually reflect the views of a typical Bangladeshi bureaucrat, the particular government's point of view.

It is very-- I had to train myself to stay away from that view, and try to match with the academic standard, and come up with as much as objective point of view as possible. So here, I would try deliberately, I mean, not to match the typical stuff that is said by the Bangladesh government, or any government too per se. So that is one thing.

And the second part is the political history. Because although it's a river treaty, but it is very sensitive both for Bangladesh and India. And the political history between Bangladesh and India has a influence in this whole discussion. So knowingly or unknowingly, sometimes that political history will visit us in my presentation. So with these two disclaimers, I'll start my presentation.

So first, a little bit of history and geography. So you all know about the Indian subcontinent, that there are many countries. It was basically under the British rule for 200 years. And before that, it was 600 years under the Mughals, or the Muslims.

So before 1947, the leftmost, the huge map that you see total blue, this is the situation of Indian subcontinent. And in 1947, right after the Second World War, the Indian subcontinent was divided into two.

And that is after the partition in 1947, you can see the green part still stays the India, the present day India. And the orange part, a deep orange part, that is-- on the upper side, it's West Pakistan. And on the lower side, this small country, it's East Pakistan, which is the modern-day Bangladesh.

So in 1971, we had a war against the western part of Pakistan. It was actually very natural. You see that there is almost 2,000 miles gap between the two parts. So it was obvious for many reasons.

So in 1971, this first one single country that is India, second, India and Pakistan, and after '71, it became three countries. That is India, Pakistan, and Bangladesh. So this is the case.

And here, I'm bringing this little bit of history to explain the relationship dynamics of Bangladesh and India. Because without bringing the relationship dynamics between Bangladesh and India, it is kind of tough to understand that how and why this treaty is so sensitive.

So here, we can see that in 16 December, 1971, you can see, this is the surrender ceremony. This is the surrender ceremony of the occupying force in 16 December. And on the left side, 3 million people, that is the official number Bangladesh claims. It is disputed. But this is the official number that it was killed. So there was-- we say that there has been genocide and murders, which happens almost in all the wars.

So this is the surrender ceremony. And there is an interesting fact, you will see, that in the left side, someone who is signing for Bangladesh, this is an Indian general, General Jagjit Singh Aurora. So you can understand the historical connection between India and Bangladesh. It's very deep.

And it used to be-- during the liberation war, India directly helped us militarily. And later, after the independence, which-- both the parties considered that both India and Bangladesh would be very friendly. But after the independence, that actually changed. And major anti-Indian sentiment has been present there.

And one of the reasons this happened is the Farakka Dam, which has created serious trouble for Bangladesh. And for that, gradually there has been some treaties. And it was so serious that-- let me explain the basics a little bit first. So I will be reading from an article by Saidur Rahman.

So this is the Ganges water basin. You can see that, from here, the Ganges is coming, and coming, and coming. And it is entering from the Hooghly. Hooghly falls in the West Bengal. So previously, before the partition, Bengal was united. So there was no East Bengal or West Bengal.

So after the partition, one part of Bengal fall into India. We speak the same language. Our culture is almost same. The religion is a little bit different. The Hindu majority is in the western part, the West Bengal. And the Muslim majority is in the eastern part.

Because the partition happened for the two nations theory, that the Muslims will be living in Pakistan, and the Hindus and other religions will be living in India. So that was a theory. But that didn't work.

So here, when we speak about this Ganges Water Basin, we would speak about the Ganges River. The Ganges River originates in the central Himalayas at the altitude of 7,010 meters, and extends into the alluvial and Gangetic plains, then drains into the Indian Ocean at the Bay of Bengal.

The Ganges is a transboundary river, which has a total length of approximately 2,600 kilometers and a total catchment area of 1,087,000 square kilometer. The river basin spreads across India, Nepal, China, and Bangladesh.

Well, India shares the major portion, which is 79% of the total basin area. And in contrast, Bangladesh is the furthest downstream country of the basin and shares only about 4% of the basin area, which nevertheless represents 37% of the total area of Bangladesh.

The hydrological cycle and water resources of the Ganges basin are governed by a Southwest Monsoon, characterized by high temperature, heavy rainfall, strong seasonal variations. The region is characterized by flooding in the wet season, which is June to October, and water scarcity in the dry season, which is November to May.

And during the monsoon season, there is an abundance of water. But during non-monsoon season, a lower precipitation causes a reduced flow in the basin. The insufficient supply of water in the downstream during the dry season causes significant socioeconomic impacts, through disruption to the agriculture, fisheries, forestry, and navigation of this region.

So here, we can see a little bit more details of the close-up, the Ganges River that is entering. Here is the Farakka Dam. And there, it's-- Ganges enter Bangladesh through the West Bengal, the Hooghly area, Hooghly River. And it enters and it becomes Padma, which is the biggest river in Bangladesh, also, which is the economically most significant river in Bangladesh.

And the impact, you can see in the next picture-- you can see that in the lower part, which means this part, this whole part, this Ganges Delta, the lower part, the Ganges River, when it enters Bangladesh, it becomes Padma. And any change in the flow, or any climatic change, or any man-made change has serious impact in the lower region of the southern part of Bangladesh.

And I actually have seen directly because my hometown is actually in the Bagerhat area, which is in this region. So although it's like anecdotal experience, but I can actually see that our village area, it was actually very full of flora and fauna. But with time, it actually reduced. And now, when I go to the village after five or 10 years, we see that it has totally changed. So this actually matches with the academic articles that I've read here.

So what are the major water diplomacy events between Bangladesh and India since 1971? As you know that, in 1971, Bangladesh became independent. And India had direct help. India had direct contribution towards that.

So in 1972, right after Bangladesh became independent in 1971, December, and in 1972, the Bangladesh father of the nation, Sheikh Mujibur Rahman, and Indian prime minister, Indira Gandhi, they sat down. Water was actually an issue back then. Water was actually an issue back then between India and Pakistan, especially this Farakka Dam, the Ganges River water sharing treaty.

So for the first time, they actually sat down immediately after the independence in 1972, which actually shows that how important it is for the region to maintain the peace and tranquility between the two countries. So the first joint water commission between India and Bangladesh was established in 1972.

And this newly-made joint water commission between India and Bangladesh actually tried to survey. And they try to determine what are the course of actions that can be taken. Because for decades, for India-Pakistan rivalry, no development actually happened.

So in 1974, it was declared by that commission that-- there was this joint declaration to resolve water sharing issues, the existing issues that were there. But in 1975, Bangabandhu, Sheikh Mujibur Rahman was killed with his family. And there was a coup d'état. And the military took over. So in 1976, India unilaterally withdrew from this declaration.

So after this happened, in 1977, there was this temporary five-year treaty, which ended in 1982, which started in 1977, giving the Bangladesh national party regime, which is historically considered as anti-India. So in 1982, it was not renewed.

And after that, after a long break, in 1996, there was this treaty between India and Bangladesh, which is a Ganges water sharing treaty between Bangladesh and India, which was signed by Deve Gowda, the then-prime minister of India and the present prime minister of Bangladesh, Sheikh Hasina Wazed. So this is more or less the major developments.

And there is this interesting fact that is there, that from India to Bangladesh, 54 rivers actually come. And Bangladesh is in the downstream. And India is in the upstream. 54 rivers from India-- Bangladesh is a riverine country. There is hundreds of rivers. 54 of them actually comes from India. And it is spread in Bangladesh throughout, just like a net.

But unfortunately, so far, there has been only one treaty, one proper treaty, which is the Ganges water treaty with treaty sharing. And for last quarter century, there has been no treaty.

And another water treaty, the Teesta water treaty, there has been many talks. But still, there has been no development. So we can actually understand that why we are speaking about this Ganges water sharing treaty and its significance.

So what do we find in 1996 water treaty between Bangladesh and India? So this was the treaty. This is the very, very minimum. That treaty was there.

The sharing calculation was like this-- 70,000 cusecs or less water, when it's available, 50% will go to India, 50% will go to Bangladesh. If it's between 70,000 to 75,000, India will maintain the balance of the flow, and the Bangladesh will have remaining a 35,000 cusecs. And 75,000 or more, when there is water availability, 40,000 cusecs will go to India, and Bangladesh will maintain balance of the flow. So that was the very basic and the very minimum of the water sharing treaty between Bangladesh and India.

So what are the real scenario? I mean, this is the treaty that we have got. But what is the real scenario? So here, we can see the real scenario, that Bangladesh has been frequently deprived of its minimum share during the most critical periods of the dry season.

And this has caused the loss of agricultural land, created problem in salination. The wellness of the people has decreased. And it has created such a huge issue, that in every election that Bangladesh happens, this repeatedly comes.

And during the March 21 to 31, the 10-day cycle, in the year 2010, the actual release to Bangladesh was 44% lower than the indicated release. And in 2016, the situation became even worse. The actual release during March 21 to 31 was 47% lower than the indicated share, followed by a further 34% and 49% decrease of flows during the other alternate political periods.

So we can see that whatever that is written there in the treaty, unfortunately, this is not. The real scenario is very, very different, which is why, I mean, we have to look into these issues very seriously. And we have to decide.

Because this is going to end in 2025. This is 2021. And if it is not renewed, a very different scenario might happen. We don't know what is going to happen. But now is actually the perfect time to think about this particular scenario and think of different possibilities, especially from the conflict resolution point of view.

And what are the problems with the treaty that we can see? That it underestimated the impact of climate variability, the frequency of low flow events, and increased water restrictions upstream. And the future climate change and higher upstream water demands were not predicted.

And also, in several locations, neither Bangladesh-- this is very interesting. I was speaking about the problem that Bangladesh is facing, but a few articles actually indicated that the treaty was made in such a way that, in several occasions-- not only once, not only twice, but several occasions-- neither Bangladesh nor India was able to receive their respective shares as stipulated in the treaty.

And some other problems that we can discuss with the treaty is that Bangladesh frequently did not receive its fair share during the most critical periods of the dry season, when water demand is relatively high in both countries. And there was no guarantee clause for Bangladesh, which would ensure that-- I mean, although there is treaty.

But if Bangladesh does not get, there is no guarantee that is ensured for Bangladesh. So that became another major problem. And the opponents of the current government, they used to say things like there is no guarantee, which means this is just a show-off, which also created huge political turmoil in Bangladesh scenario.

And it is evident that the advanced hydrological models were not used, because if advanced hydrological models were used, the prediction would not be creating so much trouble. If there was deliberate error, then maybe one side would be benefited, and one side would not be benefited.

But unfortunately, the standard was set in such a way, it shows that none of the countries, several times, do not get what they are supposed to get according to the treaty. So some of the authors, like [INAUDIBLE], he actually questioned the hydrological models that has been used to deal with the treaty.

And he also claimed that the advanced models were not used, which is why the treaty is in the pen and paper. But in reality, the quantitative distribution of water has not take place properly.

So this is, we can see, there are some picture-- two pictures, actually, that I picked, what happened during the dry season. So Bangladesh is a country, which used to be full of blessings from the nature, a lot of-- I mean, you wouldn't see dry lands very often. But after this barrage actually happened and during the dry season, this actually happened.

And what happened is the poor farmers, I mean, many of them actually lost their lands. And they had to-- I mean, some of them actually-- there has been cases that some of them could not even survive. Physically, they couldn't survive.

And many of them in those areas, they left their lands. And they came to the capital city, which is why, after they came to the capital city, they didn't do anything but agriculture. But they started to find a job. They didn't find it. So they tried to do other things, which didn't work.

And at one point, what happened that crime rate increased very high. Because these people, they cannot survive in their area. And they come to the capital city or the big cities. And they start a career in crime.

So that is how actually, indirectly, even with the crime perspective, even the law enforcement perspective, this Farakka is actually affecting Bangladesh. So let's see the ground realities.

So now that we will enter into the third part of our presentation, which is the water diplomacy part. So let us check out some of the ground realities. First of all, I mean, India has economic, political, geographical, and military advantage. And not only that, it has been very few-- I mean, for last almost 15 years, the present government is in power. And they have very strong tie with Indians.

And many of the political experts, they say that without India's support and backing, this government wouldn't probably survive. So some of the political scientists, they actually come up with that sort of analysis. So I mean, whether this is true or false, that is a separate issue.

But one thing that is clear, that a huge, huge population, a major population group, they actually believe this. And once they believe this, they automatically have the anti-India sentiment.

And India, by cashing out on this sentiment, even the political leaders, they also get paranoid. They also think that if we try to take any decision that does not directly go in favor of India, maybe India will try to pressure the Bangladesh politics, and the Bangladeshi political leaders will lose their seat.

So with this fear, very, very little instance up there that Bangladesh actually confronted India. And I'm sure that this situation is not uncommon in other parts of the world. So also, like in 1971, India was directly supporting Bangladesh to become independent. Their soldiers actually died with our freedom fighters.

So what happened that when the war ended, immediately, there was a joint commission initiated. But it is very unlikely that that sort of warmth of relationship between the two countries is going to come back in the near future.

And even there is a strong political will, there is animosity, both from Bangladesh side and the Indian side. And as I say that there is very strong anti-Indian sentiment currently living in Bangladesh.

And these feelings is mutual due to the political scenario both in India and in Bangladesh. The present government in India, they try to-- they are a populist government. And there is us versus them-- this sentiment is being very much played in India, and also in Bangladesh. So these are the ground realities.

So what are the things that we can do that I'm trying to portray? The first water diplomacy approach that I try to find is finding common grounds. What are the common grounds that we can say? Because Bangladesh actually stand no chance by confronting India, saying that you have to give us. India will just say that well, we won't give you. Do whatever you want. So here, this International Water Management Institute. So from there, I actually brought this.

And so these are the issues that we can see, that low-dry season freshwater flow, the increasing siltation, accumulation of sediments, water resources along the areas of the river basins are depleting. The small rivers and the distributor is getting dried and disconnected, reduced length of waterways used for links and navigation, and riverbed erosion, formation of dry lands, and the socioeconomic vulnerabilities.

So the problems that has been there-- Goral is actually a variant of the Ganges River, on the middle side of the Bangladesh. And Hooghly-Bhagirathi River is in the West Bengal, another river. So these common issues that is actually there both between India and Bangladesh.

So the joint water commission that we have, and in our water diplomacy syllabus, what we have studied in various times, that an emphasis on joint protocol and finding the common ground, and finding the common challenges is very much stressed in water diplomacy.

So I think these are the issues that happens both for India and Bangladesh during the dry seasons in West Bengal and in Bangladesh. So these are the things that both the parties can discuss. And they can try to share some common ground, which can be exploited. And that is how the treaty can be upgraded.

So another modern diplomacy approach is indicating India's own problems with Farakka. This is a 2017 newspaper article with some references. So there is this Indian chief engineer. He actually discussed when this plan was happening in 1961. So he actually pointed out some various problems, for example, the drought and the climate change.

These are the things he actually pointed out to the Indian government. He's a Bengali guy, Krishna Bhattacharya. So he actually pointed out those problems. But back then, his career took-- he was a chief engineer on the West Bengal side when this Farakka Dam was happening.

And when he indicated those problems, for example, the different parts of Patna into and for other districts in Bihar, the flooding, the drought, and the change of biodiversity, and the salinity issues. And also, the annual silt dredging in Kolkata port quadrupled from 6.4 million cubic meter to 21.88 million cubic meter till 2003. So this sort of things happened. And these were actually predicted.

So this problem, not only it's from an academic report. This was so serious that Bihar, in the Bihar area, some very influential politicians-- the chief ministers-- and they actually say the central government that why don't you, I mean, demolish the Farakka Dam?

So the way Bangladesh wants a solution for this Farakka problem, even some parts of India there actually wants the same. So when there would be a discussion, maybe, from Bangladesh's perspective, this India's own interest can be exploited and come to a middle ground.

And this is something which Bangladesh repeatedly failed at, India became repeatedly successful. Bangladesh, after the 1982, when another party, which is historically considered as anti-India, they came to power, they tried to internationalize the Farakka situation. They tried to-- I mean, the SAARC was built. And then this issue was taken.

But India was actually stressing that this is a bilateral issue. But if you look at the basin, you will see that there is China, Bhutan, Nepal, and Bangladesh. Well, Bhutan and Nepal, their case is exactly like Bangladesh.

But the surprising new scenario is that, now that China has global aspirations, China more than once, they came out with the Teesta river-- which is another river in the northern part of Bangladesh. They came up with the proposal that we would help you with the technology and the money so that you can build another bridge on another side.

So this became another bargaining chip for Bangladesh, that using the China factor and building an international - the Joint Commission can be international. It needs not to be bilateral. It can be international, bringing China, since China is actually trying to provide Bangladesh with some new options. And they are actually saying that China's water weapon, that is the word they have used.

But this is a concept that I've borrowed from the [INAUDIBLE] class. They're bringing other bargaining chips that is not usually considered. For example, this is Bangladesh. On the left side, the West Bengal is there. You can see the Jharkhand, Bihar. And this is Nepal, Bhutan. This is Bangladesh.

And you see a huge part of India is actually there. And the majority of the border is with Bangladesh. And there is, I mean, sentiment-- there is strong sentiment against the central Indian government, because it is very much - I mean, it is called the Seven Sisters.

And the Seven Sisters, well, this is far from the central government, which is why the control is very much-- I mean, not as strong as Delhi or the nearby states. And many of these states, they actually want independence of their own, which is why, even when, at present, Bangladesh and India has a very strong tie because of the historical reasons.

The present prime minister, when his whole family was killed, for six years, he actually lived under the Indian protection. So it is considered that she would probably never go against the interests of India.

But when anti-Indian sentiment comes with a new political party, there is always threat that this part of India would be very much tumultuous. There will be terrorism. And many of the terrorist leaders, many of the nationalist leaders of those parties, they actually-- I mean, they used to operate from Bangladesh.

And one famous incident that I can say that in 2004, a 10-truck load of most advanced military weapons were passing towards Bangladesh. But it was a fluke that it was caught. So it became a huge case. So I mean, it can be a huge trouble for India.

So this particular issue can actually be brought in the negotiation table, by saying that well, we will provide you full support with safety and security of the Seven Sister's part. In exchange, maybe we can discuss about the sharing of the water treaty. So this is one bargaining chip, which I think can be exploited. I try to check the literature. But so far, I haven't seen that Bangladesh has went through that path.

And another chip can be-- there are some articles from the Indian sides. They actually claim that the Bengal-- Bengal means the West Bengal-- they need Teesta. And the Teesta, we have a barrage in Teesta. We have a dam in Teesta. And still, there has been many talks. But so far, there has been no treaty.

So I mean, although we are speaking about the advancement of Ganges treaty, double relations Ganges treaty, maybe the Teesta River, to get some advantage in Ganges river treaty, Bangladesh actually can think of discussing with India whether they can bring this Teesta river treaty with them as well.

Teesta is very sensitive, because Teesta is actually-- it has originated in Sikkim, which is very close to China. And this is the Teesta River, especially for which the Chinese actually offered Bangladesh technical support to bring for the dams, and by doing that, changing the course of the river. So it became a very serious issue between Bangladesh and India. And the diplomatic talks are still going on.

So these are actually the steps that we can think of using as the bargaining chip so that a new joint commission can be made. And the things like climate change and the other problems, which was not considered in 1996, can be considered now. Because in almost 30 years, the technology has changed, the GPS has come, and many other-- the scientific scenario has changed. So maybe, by bringing all these things together, a better solution can be saved.

And before I finish with all the criticisms, I would actually again say that-- which I did feel and I also read from the [INAUDIBLE] article, that this Ganges water treaty is probably-- it is not perfect. It is definitely not perfect. But if it was not there, the situation for both the countries would probably worse.

So the treaty should be there. And we should try our best to-- we have four years. Maybe we can try our best to think of the advancement of that treaty and also addressing the limitations that we are currently facing.

Thank you very much. If you have any comments and if you have any questions, I would like to answer them.
Thank you very much.

DR. GAIN: Thank you, Mashroof, for the nice presentation. So now, I would like to ask others to make comments, like Aaron and Gemma. Do you have any comments or feedback?

AUDIENCE: Thank you, Mashroof, for a really great presentation. I learned a lot. I really appreciated how much geographic and geopolitical context you brought in. I thought that was really helpful. And I really liked the back third of your presentation, where you really kind of thought through all of the water diplomacy framework elements. So yeah, great job.

I think my feedback, as you're thinking about writing your paper, would be-- I was a little confused at times about how the treaty has failed to be implemented, thinking about most specifically around how neither country is able to receive their respective share as it was stipulated in the treaty. Is that a technical problem? Is that a diplomatic problem?

I think you could maybe identify where the specific limitations or weaknesses of the treaty are and in terms of how that actually is manifested on the ground. So that's one thing to keep in mind. Yeah, I don't know if you could talk about that at all. Are there technical flaws or political flaws that might be helpful to understand?

MASHROOF HOSSAIN: Well, the technical flaws-- I actually accept my limitations. I'm not really a technical guy. I try to read some technical papers. I actually read one of Professor Animesh's paper, which gave me some insight.

So the one technical paper that I read, they say that in last two decades, almost last two decades, very few papers or very few research has been done to actually trying to quantify the amount of water that has been there.

One of the reasons was there that initially, the historical data was not there, for example, in first five years, probably-- I mean, first one or two years-- the type of precision that you need to get to predict that what is going to happen through the history. Now that we have it, fortunately, because it has been quite long, so the research has already started. So maybe I will try to put that.

And the diplomatic problems that we are say that-- one major problem that I can say, I mean, since this is-- I would never say this outside the classroom-- that for example, US, it has a national policy. The government changes, but the policy, the main theme of the policy, remains.

Maybe some sides changes, but if you have to change the main theme of the policy-- for example, US has a defense policy. Right, US has a defense policy that we will do this, we will do that. How will we do that, maybe that can be discussed. And maybe different governments can do it in a different way.

So in India, of course, Indian democracy is not as strong as the US or the UK. But in India, in some basic sectors, for example, the defense or whether they would share this or that, they also have some sort of policy. They also have some sort of strict policy that even though the political government changes, this doesn't change much. And they strongly uphold the Constitution.

And one of the reasons is that there has not been, in the history of India, more than 60 years-- from '47 to 2021, more than 60 years-- no military takeover was there. And because India is so huge, military takeover is actually not very much feasible.

But in Bangladesh, it's a country 50 years of age. Out of 50 years, more than 15 years there were military governments. And I would be very blunt here at present. We are also have some autocratic government.

And the system has become such that, I mean, it is very tough for Bangladesh to come out from this political. So when you speak of diplomacy, we have some wonderful diplomats, really well-trained diplomats. But the decision actually comes from the politicians. I would not blame them. They definitely have their point of view.

But due to this lack of political culture, of having a straight aim, I mean-- it is like, I mean, total one government comes, so for the five or 10 years, one policy was going. The government changes, it goes backwards. So it's zig-zag, zig-zag.

So I mean, it is an issue. But thank you very much for the input, because I will try to address these things. Specifically, maybe I wouldn't be speaking too much about diplomacy, because I work for the government. And they read those papers. But the technical part, maybe I will seek help from Larry and Professor Gain to include more of the technical parts in my paper. Thank you very much.

AUDIENCE:

Hi, Mashroof, also I learned a huge amount in your presentation. The question I have-- and perhaps you addressed this somewhat-- but I would like to speak more to it. Maybe I missed it, but does the current treaty have-- how does it manage water measurement?

And in the processes for actually determining how much water there is different times of year and how much water there is over time-- because you talked about the ways in which the amount of water has changed, partially as a result of droughts and the different pieces of infrastructure that have been built.

But I'm interested in if there's any ongoing collaboration, or shared effort, or even individual kind of national efforts to quantify how the water, both quantity and quality, is changing over time.

MASHROOF HOSSAIN: Well, I do not know very details of the technicalities. But I can give you some very basics, which is there on the treaty. So the geography of the two regions is more or less the same, the West Bengal and Bangladesh. So although we are speaking of India, India is a very big country, right, so 28 states.

But ultimately, Bangladesh shares with West Bengal, from where the Ganges River comes. So I mean, by studying Bangladesh or by studying West Bengal, a very basic idea actually can be found. For example, the dry season in Bangladesh, from January to May, it is same in West Bengal. And the wet season in Bangladesh, which falls up to December, so from July to December, that is also same in both the parties.

So the joint committee, they probably used some hydraulic models to actually set the amount of water. For example, it is 70,000 cubics, the basic standard. The first one is if there is 70,000 cubic seconds-- the unit is cusec-- if 70,000 cusecs is there, both the countries will share 50-50%. So this is how they have made.

And from 70% to 75%, so there would be-- the balanced ratio would be for India. And Bangladesh would get a minimum 34,000 cusecs. And if it's 75 to-- 75 and above, then the same kind of ratio is there. So this much I know.

AUDIENCE: Is there ongoing-- for example, you mentioned that there have been years in which neither side has gotten the amounts that they've been allocated. Have there been any ongoing efforts to know, if there's under 70,000, to quantify how much is flowing? And how?

MASHROOF HOSSAIN: Yes. I think that Bangladesh, we have an agency-- Bangladesh Inland Water Authority-- we have Bangladesh Water Development Board. So they actually conduct some scientific studies. And based on those, I will be honest with you that the government organizations-- I mean, for example, the scientists who have that expertise, the Bangladesh-- those organizations are not really the most lucrative jobs for them. So we do what we can.

And sometimes, we bring foreign consultants. And with those, some studies are made. And based on that, actually, these sort of distributions are made. But then again, there are flaws in this study.

DR. GAIN: Mashroof, I think in terms of measurement, the joint river commission is-- so there is joint collaboration between India and Bangladesh. The Joint River Commission is responsible for measuring the things. So in terms of theory, both the Indian side, there is a Joint River Commission. And in the Bangladesh side, there is Joint River Commission. So both parties, in terms of theory, theoretically, they measure. And in terms of dry season river, they measure the flow. And they agree on that. So I think in terms of agreement, they do have these kind of things. But in reality, this kind of collaboration, although that exists, but this kind of enforcement is-- they rely only on the Indian side, that maybe they don't regularly go to the Farakka point to measure the things. But I think the way that Indian Joint River Commission communicate to the Bangladesh Joint Commission, they agree on that kind of measurement. So that's the idea.

MASHROOF HOSSAIN: I was actually looking for some articles whether the state water department-- I'm not sure that whether the Indian states have separate water departments or not, or whether it's federal. I'm not sure. So I'll try to find whether there is any collaboration between not only the state level, but also the-- not only the federal level, but also the West Bengal state and Bangladesh. But probably, I probably missed. I didn't find any such collaboration.

DR. GAIN: So is there any other feedback that you would like to bring, like Anselmo or Hasnain?

AUDIENCE: Mashroof, congratulation on the presentation. I learned a lot from you today.

MASHROOF Thank you very much.

HOSSAIN:

AUDIENCE: Especially the visual was very rich, your presentation. I just have one quick suggestion, because you said that you are not going to mention a lot about the diplomacy because you are part of the government. But when you read the Larry's book, on the-- specific on the page 133, it mentions about the water management in the state hold the key approach to the conflict, using the traditional way. Or they can use the non-zero-sum approach. And I think that's very interesting, if you can include in your final paper.

MASHROOF Yeah.

HOSSAIN:

AUDIENCE: Specific when they talk about the water management, that's fall in two categories-- a higher authority can force a decision, or the other parties themselves can negotiate a settlement that formal talks helped to implement. I think this chapter is very interesting for your presentation.

MASHROOF Thank you very much. I will look into that and I will try to incorporate it.

HOSSAIN:

AUDIENCE: It's on page 132, 133.

MASHROOF Thank you very much.

HOSSAIN:

DR. GAIN: Yes. Yeah, Larry?

PROFESSOR SUSSKIND: Thanks for the presentation. I'm hoping that you can synthesize the diplomacy discussion in the final version of the paper.

And it would be wonderful if you had a one-page introduction to your discussion about diplomacy that highlighted two or three ideas about what new or different, with regard to diplomacy, that could be tried that hasn't been tried, without going into all the explanation in this summary of how this would be done, but to just highlight.

You talking about bargaining chips, you're talking about linking other issues, it's a lot. Pick two or three things that you want to suggest that are new. And say, I think the focus should shift to involving all of the states and not just the national governments. OK? If that's one of your proposals, then state that as a new emphasis that might change the whole story.

If you think, as Aaron was implying, that a new approach to joint measurement would provide timely and believable information in a different way, and that with that information, new joint management, under different sets of circumstances, would be improved even if the treaty isn't changed, then say that.

But not more than two or three ideas that could be expressed in a couple of sentences as the contribution to your discussion about diplomacy. Because otherwise, it's too much. It's impossible to follow all the different lines of diplomacy that are implied by the different maps, and the different bargaining chips, and the different relationships, and what might be done. And it's just too much.

Just choose two, no more than three, but even those two ideas about changed diplomacy and highlight those, OK? I know that you have lots of other stuff.

I think for the paper, the power of the paper will be improved if you zero in on just a couple of ideas about changes in the diplomacy going forward that haven't been given enough or the right attention in the past.

MASHROOF HOSSAIN: Professor, in that case, maybe I will try to speak about the one point that I say. Maybe instead of three or two, I will just focus on one. That is the bargaining chips, the alternate bargaining chips. Maybe I can choose just this one and go deeper on that. What do you think?

PROFESSOR SUSSKIND: I think that there are different bargaining chips that are more or less attractive to one country or another. And that instead of saying bargaining chips is one thing--

MASHROOF HOSSAIN: I would specify the bargaining chip. Pick one bargaining chip and go deeper on that.

PROFESSOR SUSSKIND: Which ones? I mean, I thought the idea that you have all these states, they're not happy with their own national government, it's possible that a negotiation involving those states could change what gets talked about, and shift the balance of power, and provide an opportunity for sub-regional piece of the treaty to go ahead.

So that's about bargaining chips. But it's about the involvement of sub-national units on the India side and why their involvement could make a difference. So I'm really saying, don't just talk about things at the level of bargaining chips. It's too broad.

MASHROOF HOSSAIN: Pick.

AUDIENCE: Pick a couple of bargaining chips that you think are most promising and say who should do what with this new bargaining chip that might lead to either a new treaty, or better administration of the existing treaty, or a completely different kind of treaty.

I mean, not-- keep the one you have. And in addition, adopt maybe a new treaty about this additional river. Maybe that's what opens things. But take specific bargaining chips and make them into your recommendations. OK?

MASHROOF HOSSAIN: OK, professor. Thank you.

DR. GAIN: Yeah, so in line with Larry's suggestion, so my suggestion would be-- so you mentioned only the state versus state diplomacy. But you know, the India's water resource responsibility is given to the state-- I mean, not federal state. So more most of the water power is given to the state-- I mean, West Bengal state has the power for managing water resources in the West Bengal.

So the central government cannot intervene anything regarding the decision of the West Bengal's water resources issues. So in that case, one of the key stakeholders would be the West Bengal. And I mean, how the Teesta water treaty didn't work although the central government was--

MASHROOF HOSSAIN: Agreed.

DR. GAIN: --agreed with the Bangladesh government. But because of the West Bengal government, it didn't happen. So I think this, as Larry mentioned, we can incorporate, or you can incorporate the state as stakeholders. Maybe that can also important.

And I think that is essential, not important, because without the state, you cannot negotiate with the central government. So this is on point. And in terms of identifying issues, already, if you ask some of the peoples, key peoples, then it would be easier for you.

So you already identified several key issues. One of the issues is Bangladesh is concerned regarding the climate change and its impact on the future river flow. And so this is one of the key aspects.

But also, other aspect for the [INAUDIBLE], you already mentioned incorporating how the Seven Sisters and the transit Bangladesh can help achieving this-- the new water treaty that incorporates ensuring future river flow.

But also, the last few years, there was a discussion for developing barrage in the Ganges within the Bangladesh part, which India denied and which India opposed. And that plan has been halt.

MASHROOF HOSSAIN: The deep sea base. The deep sea base.

DR. GAIN: Not deep sea, barrage in the--

MASHROOF HOSSAIN: Oh, the barrage, yeah.

DR. GAIN: Yeah, the freshwater flow barrage in the Bangladesh to a store freshwater for southwest part of the Bangladesh. So this kind of option creation can be helpful for treaty negotiations.

So I believe, if you can ask some of the peoples that I already mentioned to you, if you interview them, I think you can have much more insight for the paper. You might not consider them, given the time limit. But as Larry mentioned, if you consider only two or three specific points that can be helpful for incorporating-- so one could be the climate change.

Other could be the engaging stakeholders, like state-level stakeholders and interacting with the Seven Sisters state for the transit and how this can help treaty negotiations. These are specific aspects you can consider.

MASHROOF HOSSAIN: Thank you very much.