Nepal–India Cooperation in River Water Management

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Abstract: There is a perception in certain quarters that Nepal was not given due share in the three major water deals between Nepal and India, namely the Kosi Agreement, the Gandak Treaty and the Mahakali Treaty. However, these projects were found to be mutually advantageous to both Nepal and India. If there was any shortcoming in the Kosi Agreement or the Gandak Treaty, it was due to the lack of experience on the part of India. As and when the need was felt, India reciprocated the Nepalese sentiments by way of making revisions in the treaty/agreement. It is a pity, however, that the positive dimensions of the water deal between Nepal and India have not been properly understood because of over-politicisation of the issue.

Background

More than 6,000 rivers exist in Nepal with a combined run-off of about 200 billion cubic metres. All the river systems in the country finally end in the Ganges. These rivers contribute 46 per cent of the flow in the Ganges. In the lean season, their contribution to the flow of the Ganges increases to 71 per cent. In 1920, the British Indian government entered into an agreement with Nepal in the water resources sector for the construction of the Sarada Canal Project on the boundary river, the Mahakali. After India achieved independence in 1947, the governments of Nepal and India signed a landmark agreement for the construction of the Kosi Project in the Nepalese territory in 1954. Another important agreement between Nepal and India was the Gandak Irrigation and Power Project signed between the governments of the two countries in 1959. Finally, the Treaty on Integrated Development of the Mahakali River, including the Sarada barrage, the Tanakpur barrage and the Pancheswar Project, was signed between the governments of Nepal and India in 1996.

The Kosi Agreement

For a long time, the Kosi river was regarded as the ‘sorrow of Bihar’ (India) as it brought about massive destruction of life and property through floods each year. During British rule in India, as far back as 1779, certain British officials visited the Barahachhetra area along the Kosi river in Nepal, but nothing concrete developed in terms of taming the river.

After India achieved independence in 1947, the Nepalese and Indian leaders realised the need to tame the Kosi river through joint efforts. Accordingly, Nepal and India signed the Kosi Agreement in 1954. Following this event, a barrage was
the floods and providing irrigation facilities to land in Nepal and in Bihar state of India. In the process of building the 1.1 km barrage in Nepal, about 41 square km of Nepalese territory was submerged in the upstream region.

Among all the irrigation projects in Nepal, the Kosi Project is the largest. It irrigates 164,000 hectares of agricultural land, including 117,000 hectares from the Chatara Project, 26,000 hectares from the Western Canal Project and 14,000 hectares from the Chandra Canal Project. Initially, the Chatara Canal Project was expected to irrigate 66,000 hectares of land in Sunsari and Morang districts. Upon its completion in 1974, however, it could irrigate only up to 20,000 hectares of land. Subsequently, the capacity of the Chatara project was increased with the help of the World Bank.

**Main highlights of the Kosi Agreement**
The Kosi Agreement has a total of 18 articles. Some of the striking parts of the agreement are given below.

**Prior approval of the Nepalese government**
As per the Kosi Agreement, it was necessary for the government of India to take prior approval from His Majesty’s Government (HMG) of Nepal before undertaking certain construction activities for the project. However, in certain cases it was enough for the Indian government to intimate the government of Nepal. Clause (iii) of Article 1 of the revised Kosi Agreement reads:

(iii) Any construction and other undertaking by the Union in connection with this Project shall be planned and carried out in consultation with HMG,

Provided that such works and undertakings which, pursuant to any provision of this Agreement require the prior approval of HMG shall not be started without such prior approval;

And further provided that in situation described in Clause 3 (iii) and Clause 3 (iv) intimation to HMG shall be sufficient.

**Guarantee of Nepalese sovereignty over its territory**
The revision of the Kosi Agreement on 19 December 1966 guaranteed Nepal full rights over the Kosi river. This is reflected in Article 4 (i) of the revised Kosi Agreement, which reads:

HMG shall have every right to withdraw for irrigation and for any other purpose in Nepal water from the Kosi river and from the Sunkosi river or within the Kosi basin from any other tributaries of the Kosi river as may be required from time to time.

**Lease of land**
In the 1954 agreement, there was a provision made in Clause 5 that India was to have ownership of all lands acquired and leased by Nepal and transferred to India for project-related activities. Later on, however, in the revised agreement India accepted Nepal’s
the government of India. In Clause 5 of the revised agreement, India made it clear that the land so made available was ‘lease land’ given for the project activities for a period of 199 years at an annual nominal rate. Clause (i) of Article 5 of the revised Kosi Agreement reads:

(i) All the lands acquired by HMG under the provisions of clause 3 hereof as of the date of signing of these amendments shall be leased by HMG to the Union for a period of 199 years from the date of the signing of these amendments at an annual Nominal Rate.

Royalties

The government of India made provisions in the Kosi Agreement to pay royalties to the government of Nepal for the generation of power or the use of stone, gravel and ballast obtained from Nepalese territory and used for construction, maintenance of the barrage and other project-related activities. There was also provision made in the agreement for due payment of compensation for the use of timber for the construction of works in the project. Clauses (i), (ii), (iii) and (iv) of Article 6 of the revised Kosi Agreement read:

(i) HMG will receive royalty in respect to power generated and utilised in the Indian Union at rates to be settled by agreement hereafter: Provided that no royalty will be paid on the power sold to Nepal.

(ii) HMG shall be entitled to receive payment of royalties from the Union in response of stone, gravel and ballast obtained from Nepal territory and used in the construction and future maintenance of the barrage and other connected works at rates to be settled by agreement hereafter.

(iii) The Union shall be at liberty to use and remove clay, sand and soil without let or hindrance from lands leased by HMG to the Union.

(iv) Use of timber from Nepal forests, required for the construction, shall be permitted on payment of compensation.

Use of bridge for public traffic

Until completion of the Kosi barrage, Nepal’s eastern region was almost cut off from the western region due to the absence of bridges. But the barrage served the purpose of a bridge between the eastern and western regions of Nepal. Such a development helped to foster economic, social and cultural ties between the people of the two sides of the Kosi river. Before the construction of the barrage/bridge, the only means to cross the mighty river was by ferry, which had very little capacity to transport goods and services. On its part, the Indian government in Clause (iv) of Article 9 of the Kosi Agreement opened the Hanuman Nagar Kosi bridge to public traffic. In fact, the construction of the bridge initiated a new era for the development of the eastern and western parts of the Kosi river. It also played a crucial role in the modernisation of Nepal.
Article 10 of the Kosi Agreement presents details about the use of watercraft and navigation rights on the Kosi river. The Indian government treats the use of watercraft as the exclusive domain of the government of Nepal. However, there are provisions for putting restrictions on the use of watercraft such as boats, launches and timber rafts within two miles of the barrage and headworks for safety reasons. Special permission from the competent authority of the Nepal government in consultation with the executive engineer of the barrage is required before using watercraft in close proximity to the barrage area.

**Fishing rights**

Under Article 11 of the Kosi Agreement, Nepal enjoys exclusive rights for fishing in the Kosi river. Fishing activity is, however, restricted within two miles of the barrage and headworks area for security reasons. The revised Kosi Agreement contains provisions for giving permission for fishing within two miles of the barrage. The permits for such activities can be given by the competent authority of the Nepal government in consultation with the executive engineer of the barrage.

**Use of Nepalese labour**

In all project-related activities, provision has been made for giving preference to Nepalese labourers. Article 12 of the Kosi Agreement states:

> The Union shall give preference to Nepali labour, personnel and contractors to the extent available and in its opinion suitable for the construction of the Project but shall be at liberty to import labour of all classes to the extent necessary.

**Kosi High Dam Project**

Before undertaking work on the Kosi river barrage, a detailed survey was carried out. It was found that a high dam could be constructed for this purpose at a height of 783 feet lying at a distance of 1.6 km from the foothills at Barahachhetra temple, Chatra. This project had tremendous potential to generate hydropower, provide irrigation to vast tracts of land and promote navigation facilities up to the sea. More than anything else, the Kosi High Dam had the capacity to produce more power than the total power available in India at that time.

However, the building of a high dam has not materialised. It may be that the planners and policy-makers in India lacked the foresight and vision to implement the project. For some years both the Nepalese and the Indian governments have been trying to initiate work on the Saptakosi High Dam Project. Towards this end, the two governments signed a memorandum of understanding on 9 January 1997 to carry out a joint DPR study for the Kosi High Dam cum Sunkosi Storage cum Diversion Scheme. Significantly, the Indian government was expected to bear all the costs involved in the investigation and DPR studies, which were expected to be completed within three years.

The Sunkosi–Kamala diversion project is part of the Saptakosi High Dam Project, which aims to divert 72 m$^3$/s of water from the Sunkosi river to the Kamala river through a 16.6 km tunnel. There is a prospect for the production of hydropower up to
the natural water of Kamala is expected to be re-regulated at the Kamala dam nearly 20 km from Chisapani, which could generate an additional 32 MW of hydropower, as well as providing a year-round irrigation facility for nearly 160,000 hectares of agricultural land from Saptari district in the east to Sarlahi district in the west. It is estimated that the Kosi High Dam together with Sun Kosi Storage cum Kamala Diversion Scheme could irrigate as much as 721,000 hectares of agricultural land in Nepal, as well as generating hydropower to the extent of 4,689 MW. In addition, new vistas of economic cooperation between Nepal and India could open up through the development of 165 km of waterway from Chatara in Nepal to Kolkata Port in India. Agricultural production and productivity in the region is expected to multiply substantially due to this project.

However, the investigation work at the Sapta Kosi High Dam site (269 m) has been suspended since May 2007 due to opposition from local groups, despite repeated assurance from the Nepalese government that it will provide all possible security to the staff engaged in such work.

**Benefits of the Kosi Agreement**

It might be a moot point whether the Kosi project benefited India more than Nepal or vice versa. But it cannot be negated that the benefits from the project have been substantial even for Nepal. There was no cost involved for Nepal for the construction of the Kosi barrage and the appurtenant works. The entire costs of such activities were borne by the government of India. The Nepalese territory was protected from the floods in Kosi that used to bring about massive destruction to life and property each year. In addition, it provided irrigation facilities to Nepal. The country also received 10 MW of hydropower from the canal drop. Another important benefit of the Kosi barrage for Nepal was that it connected the eastern region of Nepal with the western region. Before construction of the project, the eastern region of Nepal was almost disconnected from the western region.

Nepal also received royalties from the government of India for the use of materials such as gravel and boulders in the construction, repair and maintenance of the project activities. The Indian government offered Rs 30 million to construct a separate canal on the eastern side for the benefit of the Nepalese in the Terai region. However, the Nepalese government used this for the construction of the Trisuli Hydro-Electric Project located north of Kathmandu in Nuwakot district.

The locals of Morang and Sunsari districts of Nepal, meanwhile, became dissatisfied with their government’s bid to divert the money sanctioned by the Indian government for the irrigation of land in the eastern part of the Kosi river in the Terai region. So a further request was made by Nepal to the Indian government in 1964 to concede to the demands of the people of Morang and Sunsari districts for the development of an irrigation project. Accordingly, in November 1964 the Indian government extended an additional Rs 40 million for the construction of the Chatra Canal Project as part of the Kosi Agreement to provide irrigation facilities for 66,000 hectares of land in those two districts east of the Kosi river.

Subsequently, the Nepalese government further increased irrigation facilities to 41,800 hectares of land in Morang and Sunsari districts at the cost of US$145.5 million, with the support of the World Bank. On the western side of the Kosi, Nepal was able to irrigate a total of 34,690 hectares of land, including 10,210 hectares from the
through the Kosi river water.¹³

Some concerns
There are some concerns in Nepal about the Kosi Agreement. A notion prevails that the agreement is more favourable to India than Nepal and that Nepal has not been fairly treated in the deal. But the Indian perception is that Nepal has been reaping benefits from the agreement while making no investment in the deal, apart from the submergence of certain parts of its territory. The Indian feeling is that the Nepalese authorities on many occasions have ‘stymied effective water cooperation for narrow political gains’. They feel that there are few faults with the existing treaty and problems are more due to the lack of ‘will’ on the part of the Nepalese authorities to implement it. On several occasions, the Nepalese authorities have failed to cooperate with the Indian technical teams in the maintenance and related works of the barrages and other structures.¹⁴ This is one of the reasons there is so much loss of life and property in Bihar each year due to the monsoon floods in the river.

The Gandak Treaty
The history of exploiting the water of the Gandak river goes back to the 1871–1872 when the British Indian officials considered using water from this river for irrigation purposes. But it was not until 1909 that the Tribeni canal from this river was completed. By 1960, the command area of the canal was extended to 161,871 hectares on the Indian side of the border.¹⁵

Initially, the irrigation of the agricultural land through the Tribeni canal of the Gandak river was carried out on a small scale, when there was far greater potential to use the river water for irrigating vast tracts of agricultural land both in Nepal and India. Realising this prospect, the governments of Nepal and India signed the Gandak Irrigation and Power Project Agreement in December 1959. The agreement, however, came into force only when it was amended in 1964.

In 1968–1969, the Gandak barrage (a part of the Gandak Project) was constructed over the Gandak river in order to provide irrigation to the land in Nepal and India. The barrage over the Gandak river is 2,749 feet long at the international border at Valmikinagar (Bhainsaloton). The Gandak Project is the second largest project in Nepal next to the Kosi Project. It irrigates 63,000 hectares of agricultural land in Nepal¹⁶ and 1,850,520 hectares of land in India.¹⁷ Nepal had virtually no financial investment in the construction of the Gandak Project but it gained from it in diverse ways, for example through irrigation, flood protection and to some extent through hydropower generation. Certain experts believe that the Gandak Project would have proved more beneficial in terms of irrigating still larger tracts of land in Nepal and India if the barrage was located upstream closer to Dev Ghat in Nepal instead of at its present location at Bhaisalotan along the border of the two countries.

Main highlights of the Gandak Treaty
The Gandak Treaty contains 13 articles (Annex Two). Major highlights of the treaty are presented below.
One of the important aspects of the Gandak Treaty is that it helped Nepal to restore its riparian rights. As per the amended version of the treaty, the government of Nepal secured the right to withdraw water from the river or its tributaries in Nepal for the purpose of irrigation or any other purpose. The revised version of Article 9 of the Gandak Treaty states:

His Majesty’s Government will continue to have the right to withdraw for irrigation or any other purpose from the river or its tributaries in Nepal such supplies of water as may be required by them from time to time in the Valley.

For the trans-Valley uses of Gandak waters, separate agreements between His Majesty’s Government and Government of India will be entered into for the uses of water in the months of February to April only.

In the initial Gandak Treaty, Article 9 had curtailed Nepal’s right to use water. Nepal succeeded in convincing India to amend the treaty with the purpose of safeguarding Nepal’s interests. Significantly, India reciprocated positively. The revised Gandak Treaty was a substantial improvement over the 1959 version. Being the lower riparian country, India believed that the upstream riparian country, Nepal, had the right to consumptive use of water.

Irrigation and control

The treaty proposed to construct the Western Nepal canal, including the distributaries with a minimum discharge of 20 cusecs for irrigating 16,187 hectares of land in the gross command area. In addition, there was a provision in the treaty to provide an additional 20 cusecs of water for irrigating 41,884 hectares of land through the Eastern Nepal canal.

Later on, the government of Nepal improved the Eastern Nepal Gandak canal system with the assistance of the World Bank in order to remove certain deficiencies of the project. Similarly, the Nepalese government mitigated the deficiencies of the Western Nepal Gandak canal with the assistance of the Asian Development Bank (ADB) to ensure the flow of 300 cusecs of water from the Gandak barrage.

Most importantly, the Nepalese government was given the responsibility to operate the head regulator of the Don Branch canal so that the irrigation requirements of the people on both sides of the Nepal–India border region were addressed. Clause (V) of Article 7 of the amended treaty states:

Also, the head regulator of the Don Branch Canal shall be operated by His Majesty’s Government keeping in view the irrigation requirements of area irrigated by this branch canal in India and Nepal.

Power development

Both Nepal and India agreed to construct one powerhouse to generate electricity with an installed capacity of 15 MW with provision to transfer to Nepal. Subsequently, the powerhouse was constructed and handed over to Nepal in 1981.
In Article 10 of the Gandak Treaty, Nepal’s sovereignty and territorial jurisdiction was kept intact with regard to the lands acquired by the Nepalese government and transferred to the Indian government for investigation, execution and maintenance of the project.

**Right to prior use of water**

Nepal restored its right to prior use of water in the Gandak Project. It is sovereign in withdrawing water from the rivers or their tributaries within the country. The revision of the treaty proved remarkably successful for Nepal.

**Compensation for land acquisition**

The Indian government was committed to pay the government of Nepal due compensation for the use of either the acquired land or the government land transferred by the latter to the former in the course of the investigation, construction and maintenance of the Gandak Project. Clauses (i) and (ii) of Article 3 clearly state

(i) His Majesty’s Government will acquire or requisition, as the case may be, all such lands as are required by the Government of India for the Project, i.e., for the purpose of investigation, construction and maintenance of the Project and the Government of India shall pay reasonable compensation for such lands acquired or requisitioned.

(ii) His Majesty’s Government shall transfer to the Government of India such lands belonging to His Majesty’s Government as are required for the purpose of the Project on payment of reasonable compensation by the Government of India.

**Royalty against quarrying**

The government of India agreed to pay the government of Nepal ‘reasonable royalty’ if the former made use of Nepalese quarry materials such as the block stones, boulders, shingles and sand in the course of the construction and maintenance of the Gandak Project.

**Establishment of link**

The treaty allowed free movement of people and transportation of goods between Nepal and India by agreeing to open the Gandak barrage to public traffic. It was only under special circumstances, such as the period of repair or bridge construction, that the movement of people or the transportation of goods through the barrage was liable to be temporarily halted. Without the bridge, it was not easy for the people of the two countries to cross the river. They had no other means but to use the small boats or ferries, which often discouraged them from taking due benefits in economic, trade and other activities. Against this background, the opening of the barrage was the opening of greater opportunities for the people of the two countries.
Certain deficiencies in the Gandak Project had been corrected in the revision of the treaty in 1964. However, Nepal is still barred from transvalley uses of Gandak water during the dry months between February and April. Therefore, it is believed that Nepal might make a claim for further revision of 1964 Revised Gandak Treaty before implementing the Buri-Gandak Storage Dam Project. As is well known, the Buri-Gandaki river is one of the major tributaries of the Gandak. With the completion of the Buri Gandaki Storage Dam, the dry season flow of the river in the months of February to April would be doubled. Expectations are that further revision of the 1964 Revised Gandak Treaty will put Nepal in a similarly advantageous position to the 1966 Revised Kosi Agreement as far as the recognition of the country’s right to use water of the Gandak and its tributaries is concerned.

The Mahakali Treaty

After obtaining consent from Nepal, the British constructed the Sarada barrage on the Mahakali river at Banbasa in 1928. Since the construction of the barrage, India has been using the water from this river to irrigate land in Uttar Pradesh state. India also produces about 40 MW of power from the river at Lohia powerhouse. By allowing the British to construct the barrage, Nepal received 460 cusecs of water from the river. In addition, the country was entitled to receive up to 1,000 cusecs of water between 15 May and 15 October in the summer season and up to 150 cusecs of water between 15 October and 15 May in the winter season if there was surplus water available. However, Nepal was able to make use of the allocated water from the Mahakali river only after several decades, with the completion of the World Bank-supported Mahakali irrigation project in 1997–1998. The project has a command area of 11,600 hectares of land in Kanchanpur district in Nepal.

Moreover, the Integrated Development of the Mahakali River, including Sarada Barrage, Tanakpur Barrage and Pancheshwar Project (Mahakali Treaty) was signed at the highest level between Sher Bahadur Deuba (prime minister of Nepal) and P.V. Narasimha Rao (prime minister of India) on 12 February 1996 in New Delhi. The Pancheshwar Project under the treaty was expected to produce 6,000 MW of hydropower with the investment cost of US$4 billion for the eight years up to 2002. There was also provision for the irrigation of vast tracts of agricultural land both in Nepal and India, as well as the benefit of flood control.

Ratification of the treaty

As per Article 126 of the Nepalese constitution, the Mahakali Treaty was presented to the joint session of Nepalese parliament for ratification on 11 September 1996. Over two-thirds of the members of parliament endorsed the treaty. The treaty, which was valid for 75 years, came into force on 5 June 1997 and subsequently the instruments of ratification were exchanged between the two countries. The DPR of the treaty was expected to be prepared within six months of the exchange of documents of ratification.
The signing of the Mahakali Treaty in 1996 was perhaps the only occasion when Nepal demonstrated rare boldness to move forward towards economic nationalism. All the major political parties in Nepal, including the Nepali Congress, the CPN-UML, the Rastriya Prajatantra Party and the Nepal Sadbhavana Party supported the treaty as they all found it in Nepal’s best interests.

The CPN-UML was fractured when certain factions could not reconcile with the party’s stand on the Mahakali Treaty. But the party did not give up and demonstrated its solidarity with other political parties in supporting the treaty. It was significant that a national political party like the CPN-UML remained firm on the issue of the treaty even at the cost of party division.

Cutting across the party line, the Mahakali Treaty was hailed by all political parties, intellectuals and academicians of the national mainstream. Only a few from within and outside parliament opposed it. The treaty was considered historic as it was prepared mostly on Nepal’s terms. The government of Nepal claimed that no better deal was possible. Whether in the case of the Tanakpur barrage, the Sarada barrage or the Pancheshwar Project, Nepal got its due share in power, irrigation and the other sectors.

It was the negotiating skill on the part of the Nepalese government leaders and the maturity demonstrated by the political parties, including the Nepali Congress, the CPN-UML and the Rastriya Prajatantra Party, that helped to bring about a consensus and enabled Nepal to achieve something concrete from India on an equal footing in the deal of the Mahakali integrated development project. Indian political leaders, intellectuals and journalists were equally in favour of the Mahakali Treaty.

**Main highlights of the Mahakali Treaty**

In the Mahakali Treaty, Nepal and India agreed that an integrated project including power stations of equal capacity would be constructed and operated on each side of the Mahakali river, with the total energy thus generated being shared equally between them. Since the investment in the project was huge, they agreed to make joint efforts to mobilise financial resources for its implementation.

Under Article 9 of the treaty, there was a provision for the formation of a Mahakali River Commission in order to provide expert evaluation of the projects and to coordinate and monitor plans of action in the course of the implementation of the treaty.

Under the treaty provision, the Pancheshwar Multipurpose Project was to be constructed on a stretch of Mahakali, the boundary river between Nepal and India, as there was provision for equal entitlement in the utilisation of the waters. The treaty was based on the principle that the cost of the project would be borne by the respective countries on the basis of benefits in the form of irrigation and flood control. Section 3 of Article 3 of the treaty clearly stipulated that the ‘cost of the Project shall be borne by the Parties in proportion to the benefits accruing to them’.

Because of the above provisions, Nepal made a claim for 8,000 cusecs of water in the Mahakali river out of the total excess water of 16,000 cusecs. Of the 8,000 cusecs of water in Nepal’s share, the maximum the country could use was 4,000 cusecs to irrigate the entire 930,000 hectares of land of Kailali and Kanchanpur districts. In such a case, Nepal made a provision to allow India to use the extra 4,000 cusecs of water with the condition that it would have to seek fewer loans and India would have to invest more heavily in the project, which many believe was in Nepal’s national interest.
DPR within six months. However, nothing tangible developed for 13 years until Nepal and India signed a pact to set up the Pancheshwar Development Authority (PDA). This was made possible due to more accommodative provisions of Nepali concerns. India agreed to establish the PDA office in Nepal’s Mahendranagar, not in India. A provision was made that the chief executive officer for the PDA would be selected through open competition from among Nepali and Indian candidates. There would also be an equal number of staff in the PDA from both countries.

**Benefits of the treaty**

The Pancheshwar Project under the Mahakali Treaty was the most viable and cost-effective project, although it had some adverse impacts, including the displacement of 21,621 people from the area. However, there have been plans to minimise the adverse impacts of the projects related to resettlement, rehabilitation and other environmental issues. The project’s return is estimated at 25.4 per cent and on this basis the country could reap the returns in just three to four years. Significantly, the electricity cost after completion of Pancheshwar will be Rs 2.55 per unit, which is quite low. Currently, Nepal imports electricity from India at the cost of Rs 6 per unit.  

As the power production in the Pancheshwar Project was expected to be pollution-free, there was high potential for growth of the tourism industry. Agricultural production in the region was expected to boost due to the access to irrigation facilities. Infrastructural facilities such as roads, education and health facilities were expected to develop. There was also a prospect to save lives and property in the region from floods in the Mahakali river.

More than anything else, the Mahakali Treaty was expected to open new vistas of economic cooperation between Nepal and India through interdependence. Various articles and clauses of the treaty clearly stipulated that neither Nepal nor India would be able to do anything without each other’s cooperation in any matter related to the harnessing of the water resources of the Mahakali river. If Nepal was dependent on India for the export of water for irrigation or for power from Pancheshwar, India too was dependent on Nepal for the import of water for irrigation and the purchase of power. This could remove the monopoly of either side in making use of the Mahakali river.

**Some concerns**

Despite the fact that the Mahakali Treaty was applauded by all the major stakeholders in Nepal and India, certain concerns have been expressed about the credibility of the treaty in both countries. There is a feeling in certain quarters in Nepal that there are unequal benefits in the water-sharing deal with India. They feel that the regulated water from the river projects is value added and so it must carry a certain price for its benefits to the lower riparian state. They want India to be more accommodative to this stand.

**Conclusion**

In certain quarters in Nepal, there is a sense of mistrust about the Kosi and Gandak deals. Certain clauses of the initial Kosi Agreement and the Gandak Treaty favoured Indian interests more than the Nepalese interests. The agreements on these rivers were
cised for not making adequate provision to enable Nepal to charge an additional price for its share of regulated water intended to benefit the lower riparian country, India. Some of these aspects of the hydropower deal between Nepal and India cannot be overlooked. Yet it would be an injustice to raise doubts about the Indian intention to benefit Nepal. India lacked vision and prior experience in executing mega projects like the Kosi and Gandak agreements in foreign lands. The Kosi and Gandak agreements were signed in the 1950s, when India did not have much experience in dam technology. But there was no hesitation on the part of India to amend such clauses of the Kosi Agreement or even of the Gandak Treaty when they were found deficient. On several occasions, India positively reciprocated the Nepalese complaints and removed the deficiencies in the original agreement/treaty through revisions. India’s response to Nepalese concerns was prompt and action oriented.

Sometimes questions are raised about the disproportionate way in which the water of the Kosi, Gandak or even Mahakali rivers is shared between Nepal and India. It is argued that India has taken a larger portion of water from these rivers and provision has been made in the Mahakali Treaty for irrigating vast tracts of land in India more than in Nepal. However, it is not possible to provide irrigation to larger areas of agricultural land in Nepal under the existing structure due to the limited availability of land. More Nepalese land could have been irrigated if the barrages on the rivers, particularly in the case of the Kosi and Gandak rivers, were placed upstream. But it is still a moot point as to why Nepal agreed to the existing structure and did not press India to place barrages upstream. If there is any fault, it does not lie only on one side.

Most importantly, the positive dimension of the water deals with India has not been properly understood. If India took away a sizeable portion of water for irrigation in its territory, it tried to compensate Nepal by constructing the Trishuli hydropower project north of Kathmandu, as well as building roads in the Terai region and in Kathmandu Valley. The Kosi barrage linked the eastern part of Nepal with the western part and the Gandak barrage linked Nepal with India. All the investments in the Kosi and Gandak rivers were made by India; Nepal only provided land used for certain structures. In the case of the Mahakali Treaty, provision for investment in the project is based on the benefits accrued from the river water. Accordingly, if India wants to take a larger chunk of water, over and above half of its portion, it is expected to make an additional investment in the Pancheshwar Project.

Without the Kosi and Gandak Projects, Nepal would not have been able to irrigate the agricultural land that it is irrigating now. The country would not have benefited from the infrastructure, such as roads and electricity, that have resulted from the water projects. No country or international agency so far has taken as much interest in developing Nepal’s water resources as India has.

Moreover, Nepal entered into a new era of cooperation with international organisations after it gained certain experience in the Kosi and Gandak Projects. The experience of working with India in the water resources sector enabled Nepal to develop expertise both technically and economically. Nepal thereby developed linkages with other countries, donor agencies and multilateral agencies such as the World Bank and ADB for further cooperation in other projects in the water resources sector. It was also due to the experience gained from the Kosi and Gandak Projects’ that Nepal was able to make a pioneering deal with India in the form of the Mahakali Treaty, which is highly appreciated by the people of Nepal.
leftist forces are not reconciled with any positive development with India, be it related to water resources development or any other such deal. Policy-makers and planners in the country are helpless to take any initiative as they are mere tools in the hands of those with a vested interest. As a result, the Mahakali Treaty, which is so important to Nepal, could not be implemented even after 16 years of its ratification. No water deal in Nepal has received as much public support as the Mahakali Treaty, because India addressed all the genuine demands of the Nepalese people. It could be argued that no other country has achieved a better deal in hydropower development on a river serving as a common boundary between two countries as Nepal has achieved. It was for this reason that the treaty was supported by more than two-thirds of the members of the Nepalese parliament in 1996. As the water deal with India is more a political than a technical issue, very little purpose is likely to be served even if a constitutional provision is made towards this end.

In view of the above analysis, the following factors needs to be taken into account when making any future deal in the water resources sector between Nepal and India.

- Until there is a change in mindset, there will be no progress in the water deal between Nepal and India, be it with regard to the Mahakali, Sapta Kosi High Dam Project or any other project.
- India should be cautious in ensuring that there are no flaws in the contents of the treaties/agreements that could create doubt in the minds of the Nepalese people about the intention of Indian projects in Nepal.
- The outcomes of research on the positive dimensions of the water deals between Nepal and India should be regularly disseminated through print and electronic media.
- The intentions of those with vested interests who create hurdles in the implementation of hydropower projects in Nepal, including in the Pancheshwar Project, need to be exposed.
- It is not practical to allow water from the Mahakali river to flow into India without harnessing it for power and irrigation and to hope for something that is not likely to be achieved.
- Dialogues for implementation of water deals should carry on despite the hurdles.

Notes
4. After the political change in 1990, the name of the Nepalese government was changed from His Majesty’s Government (HMG) to Government of Nepal (GoN).
6. Dwarika Nath Dhungel, no. 1, p. 16.
8. Ibid., p. 92.

10. Ibid.
12. Ibid., p. 19.
13. Ibid.
15. Ibid., p. 22.
22. Ibid., pp. 46–47.