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THE MULLAPERIYAR CONFLICT



NATIONAL INSTITUTE OF ADVANCED STUDIES

Bangalore, India

BACKGROUNDERS ON CONFLICT RESOLUTION

Series editor: Narendar Pani

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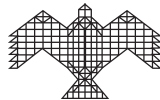
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Backgrounders on Conflict

THE MULLAPERIYAR CONFLICT

Madhusoodhanan C.G.
and
Sreeja K.G.



NATIONAL INSTITUTE OF ADVANCED STUDIES
Conflict Resolution Programme
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ABBREVIATIONS

CM	Chief Minister
CWC	Central Water Commission
DMK	Dravida Munnetra Kazhagam
GoI	Government of India
HEP	Hydro Electric Project
IIT	Indian Institute of Technology
KFRI	Kerala Forest Research Institute
LDF	Left Democratic Front
MDMK	Marumalarchi Dravida Munnetra Kazhagam
MPDRC	The Mullai Periyar Dam Rescue Committee
MEPF	Mullaperiyar Environmental Protection Forum
MoEF	Ministry of Environment and Forests
MoWR	Ministry of Water Resources
NDA	National Democratic Alliance
PAP	Parambikulam Aliyar Project
PMK	Pattali Makkal Kakshi
PTR	Periyar Tiger Reserve
PWD	Public Works Department
RTI	Right to Information
TN	Tamil Nadu
UPA	United Progressive Alliance
cusec	cubic feet per second
FRL	Full Reservoir Level
ft	feet
ha	hectare
km	kilometer
m	metre
Mcft	Million cubic feet
mm	millimeter
Mm ³	Million cubic metre
msl	mean sea level
MU	Million Units
MW	Megawatt
MWL	Maximum Water Level
sq.km	square kilometer
tmc ft	thousand million cubic feet

EXECUTIVE BRIEFING

The Mullaperiyar project is an inter-state inter-basin scheme which diverts water from the upper reaches of the west flowing Periyar River in Kerala into the eastern plains of Vaigai River Basin in Tamil Nadu for irrigation after power generation. It is one of the earliest trans-basin projects in India and was commissioned in 1895 by the British in the then Travancore State by an agreement signed in 1886 which was ratified after independence by the respective states of Tamil Nadu and Kerala.

The project situated in the territory of Kerala benefiting Tamil Nadu has been a source of conflict. The simmering tension took the form of a full-blown conflict between the two neighbouring states after leaks were detected in the Mullaperiyar dam following which the reservoir level was brought down to 136 ft from 152 ft in 1979. Over the years, the two states have been involved in a tussle over the issue of raising the water level back to its

original height and related safety concerns. Implicit in these issues are other deeper disquiets that have protracted and aggravated the conflict. The State and Central governments, various scientific and sociopolitical institutions and the media have shaped the conflict and the resolution process during this tumultuous period.

ISSUES

The Mullaperiyar issue that has been the bone of contention between the two neighbouring states of Kerala and Tamil Nadu for the last 40 years is apparently over the height of the water level maintained at the Mullaperiyar dam and over the safety of the century-old structure. The dam which is designed to hold waters up to a height of 152 ft above its deepest foundation is currently maintained at 136 ft owing to Kerala's concern over the safety of the dam. Though the conflict revolves around these two primary arguments and recently over the proposal for a new dam

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 - The paper has benefited from comments by Himanshu Thakkar and P K Gautam. They are, of course, not responsible for the views presented here.

replacing the old structure, there are other implicit and deep-rooted issues that have defined and moulded the conflict over the years. The conflict has its roots in the lease deed signed between the erstwhile Maharaja of Travancore and the British wherein all of the waters of the Mullaperiyar had been diverted to the then British territory of Madras Presidency for a period of 999 years with a nominal compensation to the donor. The dam built in Kerala territory, maintained and operated by Tamil Nadu has been a point of friction between the two states from time to time. While the detection of leaks and the threat to safety of the downstream population in Kerala brought the conflict to the surface, the growing water scarcity and demand have impelled both the states to take non-negotiable stands in the issue. The environmental concerns related to the project, the competence of the supreme technical authority of the country to decide over dam safety and the threat to interstate relations are the emerging issues in the Mullaperiyar conflict.

INSTITUTIONS

Most of the institutions involved in the Mullaperiyar conflict resolution process have had significant roles to play in directing and shaping the conflict at various critical junctures. The major

players right from the start had been the respective state governments represented by their Chief Ministers and departments in charge of water resources. The present conflict over the maintenance of the water level at Mullaperiyar was initiated by these state institutions. Failure to resolve the issue at the state level necessitated the entry of Union Ministry of Water Resources and the Central Water Commission under it, into the resolution process. While MoWR's role has been that of a lukewarm negotiator, the CWC has had a proactive role in the conflict through its technical evaluations of the safety of the Mullaperiyar dam at various points. The findings of the CWC were later contradicted by other scientific institutions in the country. Farmers' organizations in Tamil Nadu and organizations representing the downstream population in Kerala who are the major stakeholders in the conflict, have contributed to keeping the issue live and were the first to move for a legal remedy in the issue.

OPTIONS

The resolution process of the Mullaperiyar issue is notable for the legal battle over the first decade of the twenty-first century, punctuated by attempts by the Union Ministry of Water Resources to resolve the issue amicably as per court

directions. Due to the technical issues involved in the conflict, various expert committees were constituted. These expert committee assessments had redefined the course of conflict rather than initiate a resolution process. The failure of the options accessed points to the need for certain initial commitments to create a background for an informed public debate which involve the

collection, documentation and public dissemination of the existing documents on the subject, independent technical studies to verify the claims and charges of both the states and an open discussion on the Periyar Lease Deed and its amendments to lead towards the framework for a new agreement that would address the grievances and insecurities of both the states.

THE MULLAPERIYAR CONFLICT

FLASHPOINTS

Signing of Periyar Lease Deed 1886

The Maharaja of Travancore signed the agreement after more than 20 years long resistance saying, “*I am signing this agreement with my blood*”. The British Government held that the waters of the Periyar were “useless and likely to remain useless” to Travancore and that the land being an uninhabited jungle, was of little value. The Travancore Government contended that the lease value should be appraised in terms of the high utility of the land to the British Government.

Amendment of the Periyar Lease Deed in 1970

This validated the agreement after Independence. The new agreement on Periyar Hydro Electric Project legalized the power generation by Tamil Nadu with retrospective effect from 1954, prohibited in the Umpire’s award in 1942. On the same day, another agreement was signed between the two states on the interstate water sharing Parambikulam-Aliyar Project with retrospective effect from

1958. Through this agreement, water from the area belonging to Tamil Nadu in the Periyar River Basin was diverted to the Coimbatore plains in Tamil Nadu.

Floods of 1961

Following heavy floods of 1961, the ‘Times of India’, Bombay dated 11th May 1962 carried news on the Mullaperiyar dam being unsafe citing that the old dam built in lime surki mortar with no provision for inspection due to the absence of scouring sluice to drain the reservoir fully, was liable for a dam break leading to downstream disasters. Consequent to this report a joint inspection was held in 1964 after which it was decided to limit the water level at 152 ft without allowing it to reach MWL of 155 ft.

Leaks detected in 1979

These leaks generated significant public concern in Kerala especially after the Machhu II dam failure in Gujarat. The incidence of leaks was widely reported by the Kerala press and the safety of

Mullaperiyar dam became the major focus of the controversy. The CWC after inspection, reduced the reservoir level to 136 ft and recommended emergency, medium and long term strengthening measures. As an alternative to the long term measures, the possibility of construction of a new dam was also suggested. In Tamil Nadu, the dominant public feeling was that the fear psychosis of leaks was created deliberately to allow the waters of Mullaperiyar to flow into the Idukki reservoir in Kerala.

Chief Ministers Meeting 2000

By the mid 1990s, political and public pressures in both the states started mounting regarding the water level maintained at 136 feet. The chief ministers of the two states met in April 2000 but failed to agree on the appropriate water level. Immediately following the talks, protest meetings were held in the southern districts of Tamil Nadu condemning the adamant stand of Kerala. Farmer's rallies were also held in these districts threatening food blockade to Kerala if the Kerala Government refused to raise the dam level. After this fateful meeting, the Tamil Nadu legislature decided to move to the Supreme Court for a redress.

Earthquakes in 2000 and 2001

Two earthquakes occurred in the

vicinity of Mullaperiyar during the years 2000 and 2001. The first earthquake that occurred on 12th December 2000 had a magnitude of 5 in Richter scale followed by another earthquake on 7th January 2001 having a magnitude of 4.8 in Richter scale. These incidents heightened the panic in the region regarding dam safety.

Navy divers inspect the Mullaperiyar dam in 2006

Following a sudden spurt in the storage of the Mullaperiyar due to copious rainfall from the North-East monsoon, Kerala sent a team of Navy divers on 23rd November 2006 to inspect the Mullaperiyar dam below the current water level which move was aborted by Tamil Nadu. By noon, there were widespread protests in Tamil Nadu and inter-state traffic between the two states was blocked and some Kerala state-owned buses were damaged. Tamil Nadu CM threatened to boycott the meeting with Kerala CM scheduled on 29th November 2006. The Prime Minister Dr. Manmohan Singh had to intervene at this juncture to avoid a severe face-off between the two states and to get them back onto the negotiation table.

Demand for Central Forces to protect Mullaperiyar dam

Damage to the parapet of the dam was reported in January 2007. In Tamil Nadu,

the press, public and politicians berated it as a deliberate damage in collusion with the Kerala Police, who is in charge of dam security. Tamil Nadu CM Thiru. M. Karunanidhi urged the Centre to provide Central security to protect the Mullaperiyar dam. Kerala, on the other hand said that the cement plastering had fallen off the parapet wall of the dam owing to its age.

Widespread agitation in Tamil Nadu 2006

Tamil Nadu threatened to stop supply of all materials to Kerala. The protesters blocked inter-state traffic between Tamil Nadu and Kerala on the National Highways, inter-state arterial roads and

the feeder roads in rural areas on 4th December 2006. This resulted in traffic jams over 20 kilometers long. Thousands of people and trucks carrying essential commodities to Kerala were stranded.

Move for a new dam

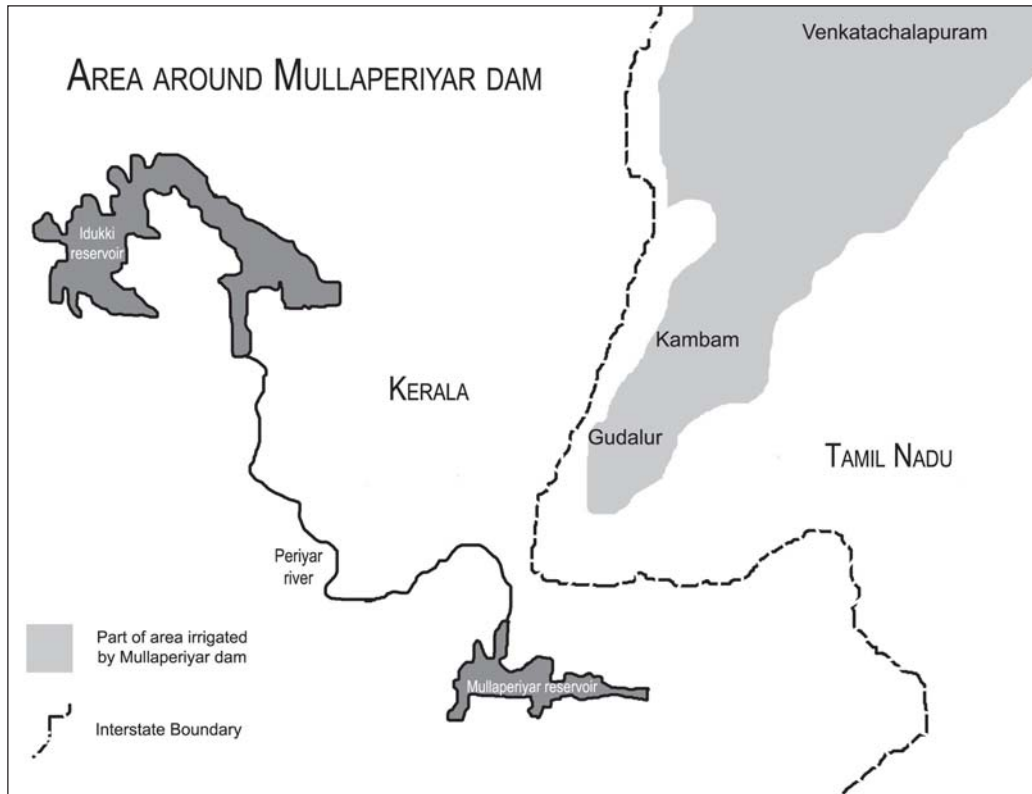
When the Kerala Cabinet approved a proposal to start preliminary work on a new dam in August 2007 there were widespread protests in Tamil Nadu against the new dam proposal. Various political factions in Tamil Nadu such as the Thiru. V. Gopalaswamy (Vaiko) led MDMK and Dr. S. Ramdoss led PMK vociferously opposed the proposal with threats to resume the economic blockade of Kerala.

TERRAIN

The geographical area related to the Mullaperiyar (also called Periyar, Mullaiperiyar) Project comprises of the donor Periyar River basin in Kerala and the recipient Vaigai River Basin in Tamil Nadu. The west flowing perennial river Periyar originates from the Sivagiri group of hills in the Western Ghats and traverses through the districts of Idukki and Ernakulam in Kerala to join the Arabian Sea. The Mullaperiyar dam is located in the upper reaches of Periyar River just after its confluence with Mullayar tributary, at an elevation of about 850 msl, in the protected forested tracts of Periyar Tiger Reserve in Kerala. The catchment area of the dam is 648 sq. km. with an annual average rainfall of about 2000 mm. The reservoir of the Mullaperiyar dam is a major wildlife tourist destination known as Thekkady Lake (Periyar Lake). The total drainage area of the Periyar river basin is 5398 sq.km, of which 114 sq.km lies in Tamil Nadu. The area belonging to Tamil Nadu in the Periyar basin is drained by the tributary Nirar, which is diverted to Tamil Nadu as a part of inter-state Parambikulam-Aliyar Project (PAP)

agreement. The catchment area of Mullaperiyar Dam falls completely within the territory of Kerala and hence there is no riparian right to Tamil Nadu as far as this tract is concerned. The Idukki and the Lower Periyar Hydel Projects and the Periyar Valley Irrigation Project of Kerala are located downstream of the Mullaperiyar dam in the main Periyar River. There are numerous thickly populated human settlements in this downstream stretch including the metropolitan township of Kochi.

The recipient Vaigai River originates from the eastern slopes of the Western Ghats in the Varshanad ranges beyond the eastern watershed boundary of the Periyar basin and flows through the arid plains of southern Tamil Nadu to the Bay of Bengal near Palk Strait. The river en route had been widely abstracted through a network of numerous tanks which served as reservoirs for irrigation. As Sir Richard Sankey, Chief Engineer and Secretary in the Public Works Department to the Madras Government, between 1878 and 1883 had observed during a discussion on the Periyar Project, "In the central and



southern portions of the peninsula dependence had from time immemorial been placed to a great extent upon rainfed tanks - a system of irrigation followed by the natives with wonderful success and energy. In the Madras Presidency there were about forty two thousand. Such a vast system, or anything comparable to it, did not exist in any other part of the world. Nearly all the rivers and tributaries were, almost from their sources to a certain point, stopped by a succession of earthen banks. The natives had carried out the whole system, but in times of

continued drought, particularly when dry seasons followed each other, the country was left with little if any assistance from water, depending entirely upon the tanks, which, being rainfed, often dried up and failed.”

These tanks supplied by the river channels defined the terrain and character of the Vaigai plains before the Periyar Project had made many of these tanks redundant. The catchment area of the basin is 7030 sq.km which lies in the rain shadow regions of southern Tamil Nadu. The area receives an average

annual rainfall of about 1000 mm with its major share from the NE monsoons. The water diverted from the Periyar Project, after power generation, is let into a tributary of Vaigai River called Suruliar,

into the drought prone plains of Tamil Nadu for irrigating an area of two lakh acres in the districts of Theni, Dindigul, Madurai, Sivaganga and Ramanathapuram.

HISTORY

The Periyar Project was initiated in the latter half of 19th century by the erstwhile Madras Presidency in the then Princely State of Travancore in South India as a measure to overcome the recurring famines in the drought prone districts of Madurai and Ramanathapuram. The proposal gained strength in the latter half of 19th century when several massive irrigation projects were being undertaken as a strategy to combat drought in various parts of British India. The British Government held that the waters of the Periyar were “useless and likely to remain useless” to Travancore and that the land being an uninhabited jungle, was of little value. The Travancore Government contended that the lease value should be appraised by its high utility to the British Government. After resisting for 20 years, in 1886 the Maharaja of Travancore signed the ‘Periyar Lease Deed’ with the Secretary of the State for India in Council. The agreement reflected the unequal relationship between the colonial power and a small princely state. It allowed the lessee (Madras Presidency) to use all the waters of Mullaperiyar for

a period of 999 years after which the lessee could extend it to another 999 years if it desired to do so. This meant the complete diversion of water from about 648 sq. km. of the Periyar basin above the dam to Madras. The lessee had to pay a lease for an area of 8000 acres occupied by the reservoir at Rs. 5 per acre. This was to be deducted from the tribute payable by the lessor (Travancore State) to the British.

The project in its final form was proposed and accomplished by Col. J. Pennycuick, of the British Army Engineering Corps. The upper reaches of the west flowing Periyar River within the territory of Travancore state was diverted eastward for the purpose of irrigating the arid lands in the Vaigai Basin of British province of Madras. The project consisting of a masonry dam in lime and surki mortar, considered the first of its kind to be accomplished by the British Royal Engineering Corps, was completed in 1895. In 1899 the Periyar lake and the surrounding area was declared a reserved forest by the then Maharaja of Travancore. The status of these reserved forests was raised to that of a Wildlife Sanctuary in

1950 and it was declared as the Periyar Tiger Reserve (PTR) in 1978.

The Periyar project did not envisage power generation at the time of its conception. Investigations were later carried out to ascertain the prospect of utilizing hydroelectric power for metallurgical purposes in the region. In 1932, when power generation became economically feasible, Madras proposed to generate power utilising the waters of Mullaperiyar. This was fiercely opposed by Travancore who insisted that the agreement provided for the use of water solely for the purpose of irrigation. The matter was taken to arbitrators who differed in their awards. Finally the British Government appointed an Umpire who ruled in 1942 that water should be used only for irrigation purposes by the lessee.

After independence, the two states informally agreed to maintain the status quo with regard to the Periyar Lease Deed. In spite of the 1942 Umpires award and without any formal agreement with Kerala (successor to Travancore) Madras State (successor to Madras Presidency) started hydropower generation using the Mullaperiyar waters in 1959 in a phased manner. This project was fully commissioned in 1965 with four units of 35 MW totaling 140 MW installed capacity. For facilitating the power generation project, the withdrawal

capacity of the channel and tunnel was increased from 1320 cusecs to 1600 cusecs during 1956. By 1959 the Vaigai reservoir with a storage capacity of 6800 Mcft was completed for the expansion of the irrigation command of the Periyar Project.

In 1970, the 1886 agreement was amended and a new agreement ratifying the Periyar hydroelectric project with effect from 1954 was entered into by the two states of Kerala and Tamil Nadu. The amendments allowed the continuance with the lease period of 999 years though it deleted the provision of extension of the deed to yet another 999 years. The amended deed raised the lease amount to Rs.30 per acre and it incorporated provisions for the review of the lease rate alone after every 30 years. The fishing rights in the Periyar reservoir previously vested with the Madras Presidency were handed over to Kerala. An additional agreement was also signed between the two states on the same day in 1970 ratifying the Periyar Hydro Electric Project with retrospective effect from 1954, according to which Tamil Nadu shall pay Kerala Rs.12 per kilowatt year (one kilowatt year is 8760 units of electricity i.e., 0.14 paise per unit) upto a generation of 350 MU at Periyar HEP annually and Rs. 18 per kilowatt year (0.2 paise per unit) for the electricity

generated in excess of 350 MU. There is no provision to review the agreement on Periyar HEP. In all the agreements dispute resolution was sought through arbitration.

The project, as originally envisaged, benefits 36,423 hectares (ha) (90,000 acres) of the first paddy crop and 24,282 ha (60,000 acres) of the second paddy crop. The entire command area had been localized in the erstwhile Madurai and Ramanathapuram districts on the left flank of the Vaigai River below the Peranai regulator. The ayacut (irrigation command area) of several existing rainfed minor irrigation tanks was also absorbed and served by the distribution system created under the project. The ayacut of the Periyar command area has since been extended in various stages and with the modernization of Periyar Vaigai Irrigation Project with World Bank aid the total ayacut is now 81,036 ha (2,00,241 acres) in the districts of Theni, Dindigul, Madurai, Sivaganga and Ramanathapuram. Tamil Nadu diverts annually an average of 22.5 tmc ft of water from the Mullaperiyar reservoir kept at 136 ft level. Apart from irrigation, Tamil Nadu generates 490 million units of electricity per annum. The water from the project is also used

for meeting the domestic and industrial requirements in these districts.

The Government of Kerala receives an annual lease rent of Rs.2.60 lakhs per annum for an area of 8,692.97 acres leased out to Tamil Nadu. The royalty which Kerala receives from power generation comes to Rs.7.67 lakhs per annum. The total share of benefits accrued to Kerala therefore comes to about Rs.10 lakhs. Kerala is also benefited by the lake created by the Periyar Reservoir which is a popular destination for wildlife tourism.

Records show that there was wetness and seepage on the downstream face of the dam from initial filling onwards which the authorities had treated by guniting¹ the upstream face and by grouting² the inside dam body during 1930-35 and 1961-65. The total quantity of cement consumed during these two grouting operations was 543 tonnes. The continuing seepage through the dam body created a sense of insecurity in the downstream population. The safety of the dam was brought before the Central Water & Power Commission (CWPC) (now Central Water Commission - CWC) by Kerala in 1964. Subsequent to this, the Central Water & Power Commission inspected the Mullaperiyar dam along

¹ Guniting refers to the process by which concrete can be applied on irregular, vertical and overhead surfaces. This application is used commonly to protect slopes from erosion, as well as structures of large areas or uneven surfaces.

² Grouting refers to filling cracks and crevices in masonry using mortar.

with engineers of Kerala and Tamil Nadu and decided to lower the Maximum Water Level (MWL) of Mullaperiyar dam to 152 ft from 155 ft. In 1978 the CWC directed to lower the Full Reservoir Level (FRL) to 145 ft.

Mullaperiyar issue was brought into the public domain when major leaks in the dam were reported by the Kerala press in 1979. The Machhu II dam failure in Gujarat in August 1979 further aggravated the feelings of insecurity over the Mullaperiyar dam. The then CWC Chairman Dr. K.C. Thomas inspected the dam along with technical officers of both the states and came up with emergency, medium-term and long-term measures to strengthen the Mullaperiyar Dam. One of the emergency measures was to lower the reservoir level to 136 ft. As an alternative to long term measures for the strengthening of the existing dam, it was suggested to jointly explore the possibility of a new dam which was dropped in later discussions.

In 1980, the CWC suggested that after the completion of emergency and medium-term measures, the water level in the reservoir could be raised to 145 ft. Further in 1986, the CWC issued a 'Memorandum on Rehabilitation of Mullaperiyar Dam' and recommended

raising the water level to 152 ft after completion of all the strengthening measures that were advocated. Meanwhile, Tamil Nadu was carrying out the strengthening measures of the dam as suggested by the CWC. The emergency measures of raising the shutters of the spillway fully to lower the reservoir level to 136 ft was done in 1979 and providing reinforced concrete capping for the entire length of the main dam was completed in 1981. The medium-term measure to strengthen the cable anchoring was completed in 1991 and the long-term measure of strengthening the existing dam with reinforced concrete backing on the rear face was completed in 1994. The remaining emergency measure of providing additional spillway capacity for the purpose of controlling the water level was completed only in 1997. The additional measure suggested by CWC for strengthening of the baby dam³ could not be taken up as it was objected to by Kerala. By then there were relentless and fierce public agitations in Tamil Nadu demanding the raising of water level in the Mullaperiyar dam. The Government of Kerala was firm from 1980 onwards that the FRL of the reservoir should be maintained only at 136 ft even after carrying out the strengthening works as

³ Baby dam is situated to the left of the main dam along which the river was diverted during the construction of the main dam.

that would not impart the old structure its original strength. Expert committees constituted by the State at various points of time cautioned the Kerala Government against the demand of Tamil Nadu to raise the storage level.

During 1997-98, various writ petitions regarding the Mullaperiyar issue were filed before Kerala and Madras High Courts, which were transferred to the Supreme Court of India following two transfer petitions to avoid the possibility of conflicting orders from the two High Courts.

In 2000 the Supreme Court directed the Minister of Water Resources to convene a meeting of the Chief Ministers of both the States, to amicably resolve the issue. Since no consensus could be reached, the Minister of Water Resources constituted an Expert Committee to go into the details of the safety of the dam and advise him on raising the water level in the reservoir. The committee had CWC member B.K. Mittal as chairman and R.S. Washni (retired Chief Engineer, Uttar Pradesh), O.D. Mande (Chief Engineer, Design, CWC), B.M. Upadhyay (Chief Engineer, Dam Safety, CWC), J.K. Tiwari (Director, Dam Safety, Madhya Pradesh), A. Mohanakrishnan (Tamil Nadu's representative) and M. K. Parameswaran Nair (Kerala's representative) as members. The Expert Committee submitted its final report in 2001 to the Ministry of Water

Resources, with a dissent note by the representative of Kerala, recommending raising the water level to 142 ft without delay and to consider raising it to 152 ft after strengthening the baby dam. The Supreme Court of India delivered its final judgment on 27th February 2006 allowing Tamil Nadu to raise the water level of Mullaperiyar reservoir to 142 ft and to carry out the remaining strengthening measures. The Supreme Court also remarked that after the strengthening work was complete to the satisfaction of the CWC, independent experts would examine the safety angle before the water level was permitted to be raised to 152 ft.

Following the judgment, the Kerala Legislature amended the Kerala Irrigation and Water Conservation Act, 2003 in March 2006. The amended act placed the Mullaperiyar dam in the schedule of 'Endangered Dams' and restricted its FRL at 136 ft. Tamil Nadu challenged the constitutionality of the amended Act 2006 of Kerala in its application to Mullaperiyar dam, in the Supreme Court.

The constitutional bench of the Supreme Court in September 2006 in an interim order, asked the two State Governments independently or with the intervention of the Union of India, to try and sort out the dispute. Despite numerous meetings in the presence of representatives of the Union government

no consensus could be reached between the two states.

Meanwhile, the Government of Kerala had entrusted various independent experts to study the safety aspects of the Mullaperiyar dam with regards to hydrology and seismicity. The flood routing study conducted in 2008 by IIT Delhi declared the Mullaperiyar dam as hydrologically unsafe. The IIT Roorkee report in 2009 on the site-specific seismic study for the Mullaperiyar dam stated that the dam is situated in a quake-prone area and that in the event of a maximum considered earthquake there were chances of dam failure.

On 14th August 2007, the Kerala Cabinet approved a proposal to start preliminary work on a new dam at

Mullaperiyar. The Ministry of Environment and Forests, GoI granted permission on 16th September 2009 to Kerala to conduct survey and investigation for a new dam at Mullaperiyar in the Periyar Tiger Reserve. Tamil Nadu approached Centre and later SC against this approval, which plea was subsequently rejected on 21th October 2009.

In February 2010 the constitution bench of the Supreme Court constituted a high-level empowered committee. While the Supreme Court will decide on the legality of the dam safety law passed by the Kerala government, the panel will look into other issues, including the safety aspects of the dam, raising the water level beyond 136 ft and Kerala's demand for a new dam.

ISSUES AND CONTENDERS

The present conflict is apparently over the safety of the Mullaperiyar dam and not over water allocation. But the issues of rights over the resource and unequal sharing of benefits derived from the project have also now surfaced as the focus of conflict between the two states with the proposal for a new dam and the attendant demand for a new agreement. At a time when there is growing scarcity and crisis over water resources, calling for a redefinition of what was once considered to be 'surplus' and unutilised waters, the Mullaperiyar issue has every potential to turn into a conflict over water sharing and allocation. For a long-term sustainable solution of the Mullaperiyar conflict, it is necessary to address these new emerging issues as well.

PRIMARY ISSUES

The maintenance of water level at Mullaperiyar

The water level at Mullaperiyar is presently maintained at 136 ft against its full reservoir level (FRL) of 152 ft. This has been one of the main points of contention between Kerala and Tamil

Nadu over the last four decades. Tamil Nadu claims that it has completed the strengthening works suggested by the CWC and is therefore entitled to restore the water level to its original height whereas Kerala fears that the century old structure is no longer safe to withstand water above 136 ft. The Supreme Court verdict of 2006 permitting the raising of the water level to 142 ft and the subsequent amendment of the Irrigation and Water Conservation Act of Kerala freezing the water level at Mullaperiyar permanently at 136 ft have further aggravated the conflict. Presently Tamil Nadu diverts about 640 Mm³ (22.5 tmc ft) of water from the Periyar Reservoir. The reduction in the water level since 1970s, according to Tamil Nadu, has led to severe crop failure in 8000 ha of agricultural lands and a drought-like situation in the ayacut solely dependent on Mullaperiyar waters. Kerala contests this argument by pointing out that the Mullaperiyar waters are now being used to irrigate more land than the dam was originally designed for. Even after the reduction in the water level to 136 ft, the original ayacut of the Periyar

project has more than doubled from 36,423 ha to 81,036 ha. Tamil Nadu insists that the increased ayacut area is the result of better water management practices on its side. Tamil Nadu alleges that the real motive of Kerala behind the reduction in the Mullaperiyar water level is to increase the water availability at the Idukki HEP of Kerala located downstream of Mullaperiyar dam. It is argued that if the water level of the Mullaperiyar dam is increased from 136 ft to 152 ft, Tamil Nadu can divert an additional 320 Mm³ (11.25 tmc ft) of water from the reservoir and consequently the storage at Idukki reservoir will be reduced. Kerala points out that the data maintained by Tamil Nadu PWD itself depicts an increase in water flow from Mullaperiyar to Tamil Nadu even after the reduction of the reservoir level. Kerala claims that at the present level of 136 ft, Tamil Nadu can divert more than 95 percent of the water from Mullaperiyar which has resulted in a reduced spill into the reservoir of Idukki HEP in Kerala. Kerala further alleges that what Tamil Nadu is actually concerned about is the reduction in electricity generation at the Periyar HEP due to the reduced water level.

Both states try to justify their respective stands on the water level issue by their own interpretations of the statistical data maintained by

Government of Tamil Nadu on water availability, water diversion, spill, electricity generation, ayacut and drought affected area of the Mullaperiyar Project.

Safety of a century old structure

Kerala believes the primary issue with regard to Mullaperiyar is the safety of a structure that has outlived its useful life and which was built during an era when dam building was in its infancy. The leaks detected in the dam structure, leaching of the surki mortar from the structure, intermittent seismic disturbances in the area and severe floods during strong NE monsoon years and related disasters have increased the concerns of Kerala. The breach of the dam, according to Kerala, would wash away a stretch of about 25 km between Mullaperiyar and Idukki dam affecting a population of around one lakh people. Kerala also fears that the Idukki dam may not be able to withstand the onslaught of the Mullaperiyar waters in which case a major disaster would ensue that would destroy the downstream dense settlements affecting millions of inhabitants. The Central Water Commission on being appraised of the situation by Kerala in 1979 had without delay suggested emergency, medium and long-term measures to strengthen the dam after which the dam could be considered safe.

The conflict has arisen because Tamil Nadu claims it has completed the strengthening works suggested by the CWC and demands the restoration of the dam to its full capacity. It applies the Expert Committee findings and the subsequent Supreme Court verdict to assert that the dam is safe. Tamil Nadu therefore sees Kerala's arguments on dam safety as a ploy to deny the state water. It argues that after the renovation works the dam is as good as new and that even if there is a break, the downstream dam at Idukki would be able to contain the waters.

Kerala challenges Tamil Nadu's claim on the grounds that that no repair work has been carried out in the main dam below 112 ft due to standing water column. It also argues that even if it were to accept Tamil Nadu's claim that the dam at Idukki would be able to contain the waters in the case of a tragedy at Mullaperiyar, there is still the stretch that lies between the two dams. Kerala has gone to the extent of pointing out that there is vast number of Tamil speaking population in this stretch. Kerala feels that it is not right to overtax a century old structure at the cost of the life of the people of the donor state. It goes on to point out that a dam failure and its ramifications would make it impossible for Tamil Nadu to enjoy the benefits of

the present deed. Both states accuse each other of being callous to the fate of the other's people.

New Dam, New Deed

Another major issue of contention at present is the proposal for a new dam replacing the old structure, which Kerala is vociferously demanding and Tamil Nadu is vehemently opposing. The suggestion for a new dam had come up quite early in the discussions between the two states mediated by the Centre. Tamil Nadu had right from the start expressed distaste for that solution and recently opposed the decision of Ministry of Environment and Forests to sanction the survey for a new dam. Kerala argues that it is imperative to replace the old dam since it will not in any case survive the deed period of 999 years. Tamil Nadu on the contrary feels that a new dam will eventually replace its historic rights even though Kerala claims that it will ensure water to Tamil Nadu. What remains unarticulated in the discussions on a new dam is whether the old deed steeped in controversy would remain in force for the new one also. When this question was raised by the Supreme Court during the hearing in 2009 both the states remained silent on the issue. Kerala aims for a new contractual agreement which would ensure it too benefits from the interstate

river water diversion, whereas Tamil Nadu for whom the present arrangement under the 1886 deed is the best possible scenario fears a new deed that would inevitably follow a new dam.

The present dam though situated within Kerala is now fully controlled by Tamil Nadu in accordance to the Periyar lease deed of 1886 amended without much change in 1970. A new dam, Tamil Nadu doubts, would not maintain this status quo. In a conciliatory circumstance in the Supreme Court, Tamil Nadu suggested in 2009 that the new dam possibility can be considered if Tamil Nadu gets full control over it. Moreover, it was ready to part with the electricity that is generated at Periyar HEP to Kerala provided the new dam was entrusted to Tamil Nadu. Even this initial step towards reconciliation was aborted later due to intense political pressure in Tamil Nadu where acceptance of a new dam is perceived as a means to make them accept a new agreement which would threaten the established use of water there for over a century.

SECONDARY ISSUES

Environmental Concerns

Mullaperiyar dam is located within the Periyar Tiger Reserve. The environmental concern that has received

the attention of Kerala so far is with regard to the submergence of the reservoir fringe area that has emerged (11.219 sq.km) after lowering of the water level to 136 ft from 152 ft. A study on the impact of raising of water level in the Mullaperiyar reservoir was carried out in 2001 by a team of scientists from the Kerala Forest Research Institute (KFRI), the Tropical Botanic Garden and Research Institute (TBGRI), Centre for Water Resource Development and Management (CWRDM) and the Salim Ali Centre for Ornithology and Natural History (SACON). It reported that vegetation and wildlife habitat in the Periyar Tiger Reserve would be adversely affected if the reservoir level was raised. The report also indicated the adverse impact on the revenue generated from tourism related activities in the area. Tamil Nadu assuages these concerns of Kerala by pointing out that the area that would be submerged was meager (1.4% of the Periyar Tiger Reserve) and would not drastically alter the ecology of the region. Tamil Nadu was also of the view that Kerala's real concern is about the new human settlements and resorts that have cropped up in the reservoir area that face a threat of submergence if the reservoir level is raised back to its height.

The issue that has never been addressed by both sides is the

downstream environmental impacts due to the complete diversion of a tributary which has resulted in the drying up of the river course for more than 25 km below the Mullaperiyar dam for a period of about six months. The environmental flow requirements of altered rivers are now being recognised all over the world as a crucial component of water allocation to reduce the downstream environmental impact.

Interstate Relations

As the original conflict over Mullaperiyar deepened over time leading to frayed nerves on both sides of the border, the repercussions of it spread into various other realms of relations between the two states. This was openly brought into the public sphere by the time the legal battle between the two states was in full swing in the Supreme Court during 2000 and reached its peak in 2006 after Kerala passed the controversial amendment. Such emergent secondary issues revolve around the economic dependency between the two states. Inter and intrastate political power struggles had Mullaperiyar as a focal point. Threats to curtail the food supply to Kerala and obstruct transport between the states were made by various political factions in Tamil Nadu as a strategy to pressurize Kerala to agree to

raise the water level in the Mullaperiyar dam. This rose to a unanimous political call for public agitation in 2006 when all national highways, arterial roads and rails to Kerala were blocked in Tamil Nadu as a protest against the amendment. The proposal for a new dam has again sparked off similar moves in Tamil Nadu towards an 'Economic blockade'. According to Tamil Nadu's politicians, the dependence of Kerala's food supply on it justifies its claim of rights over Kerala's waters. Kerala's political class counters this by asserting that the farmers of Tamil Nadu equally depend on Kerala as the chief market for their produce so that any move to block agricultural produce would also adversely affect the farming community of Tamil Nadu.

The political call to 'boycott Kerala' and the massive public response to it in Tamil Nadu are but indications of the deep emotions over Mullaperiyar. The economic embargo now resorted to, hides within it seeds of social and cultural intolerance which can shoot up if the conflict between these two highly interdependent states intensifies. With the kind of political mileage that the Mullaperiyar issue promises in local politics, public sentiment can be easily influenced with serious aftermaths in both the states.

Competence of technical and scientific authority

The Mullaperiyar has thrown up issues of a wider ambit beyond the two states involved in the conflict. The technical issues related to safety of the dam were raised before the technical authority at the Centre which acted by restricting the water level and suggesting the strengthening measures. A power play between Kerala and the Centre over the authority to decide on the safety of the dam began when the CWC-led expert committee with representatives from both the states failed to reach an amicable and unanimous solution on the issue of dam safety. Dissatisfied with the decision of the expert committee of the Ministry of Water Resources, Kerala entrusted national level institutes to conduct independent assessments and moreover enacted an act to restrict the water level at Mullaperiyar to ensure its safety. These actions have furthered the trouble brewing between Tamil Nadu and Kerala. This could have been avoided if there was a unanimous and dependable technical assessment regarding the safety of the dam.

Territorial issues

The location of Mullaperiyar dam owned by one state in leased lands within the territory of another state has itself been a point of friction between the two governments from time to time. There have been reported clashes even prior to 1979 between the Forest Department of Kerala and PWD of Tamil Nadu regarding various aspects such as quarrying, cultivation, denudation of forests etc. in these leased lands. The Forest Department of Kerala had also raised objections to quarrying operations in the Periyar Tiger Reserve for dam strengthening works during the 1990's which had caused considerable tension at the time. The law and order of the area vested with the Kerala Police had also flared up as an issue of contention. Though these clashes were seemingly minor and unrelated to the main conflict, the issue of the operation and maintenance of a structure within another state's administrative boundary has had huge implications in setting the backdrop of the conflict.

INSTITUTIONS

Identification of the institutions involved in the Mullaperiyar conflict and its resolution was guided by the Rawlsian view that an institution is a possible form of conduct expressed by a system of rules and also the realization in the thought and conduct of certain persons at a certain time and place of the actions specified by these rules.

State agencies

Being a dispute between two states, the respective governments of Kerala and Tamil Nadu represented by their Chief Ministers and the departments dealing with water resources (Water resources Department of Kerala and Public Works Department of Tamil Nadu) are the prominent state level institutions involved in the Mullaperiyar conflict. In addition, the Kerala Police and the Kerala Forest Department have also institutional roles in the conflict since the dam is within Kerala territory and Periyar Tiger Reserve. The institutional role of the Kerala Forest Department to protect the PTR from ecosystem disturbances had often clashed with that of Tamil Nadu PWD in charge of operation and maintenance of the dam

within PTR. For instance, the Forest Department had halted the dam strengthening work in the 1990s saying that quarrying for collecting building material in the PTR amounted to a violation of the Forest Conservation Act 1980.

The state machinery on both the sides had treated the Periyar Project and its Lease Deed as *fait accompli* even when the deed between the British and a princely state was no longer valid after independence. The informal agreement to continue with the project soon after independence and the amendment in 1970 that did not bring in much change to the original deed were accomplished without any public discussion. The detection of leaks in the dam which led to a lowering of the water level at Mullaperiyar, the subsequent refusal of Kerala to raise the level back and the disinclination of Tamil Nadu to take cognizance of Kerala's concern due to its trepidation that Kerala might demand a share of the Mullaperiyar waters to meet its own growing water demands were the first instances of divergent opinion and distrust between the two states. The state

institutions on both sides kept the public in the dark without sharing of factual information so that the Mullaperiyar issue became rife with political subterfuges and propaganda. The inability of the state mechanisms to recognise the potential intricacies of the issue or to create an environment for an informed public discussion and the lack of mutual confidence necessitated third party involvement for the resolution of the conflict.

Ministry of Water Resources

The Ministry of Water Resources is responsible for the coordination, mediation and facilitation in regard to the resolution of differences or disputes relating to inter-state rivers and in some instances, the overseeing of the implementation of inter-state projects. Since the Mullaperiyar is not an interstate river and there is no sharing of waters between the two states, the Ministry of WR was reluctant to involve itself in mediation. The directives of the Supreme Court in 2001 asking the Ministry of Water Resources to mediate between the two states through discussions for amicable settlement forced MoWR into the issue. The ministry constituted a seven-member Expert Committee when consensus attempts reached an impasse. But its inability to resolve the conflict took the

issue back to the legal arena. The persistence of the conflict even after the Supreme Court verdict in 2006, resulting in further legal interventions, again brought back the issue to the MoWR for adjudication. But the ministry once again proved to be ineffectual. The MoWR's attitude in the Mullaperiyar issue was subjected to severe criticism by the Supreme Court when it proposed that the cost of the Supreme Court directed Appraisal Committee in 2010 should be borne by the respective states.

Central Water Commission

The Central Water Commission functioning under the Ministry of Water Resources is the body entrusted with advising the Government of India regarding the rights and disputes between different States related to river valley development and also to conduct studies on dam safety aspects for existing and future dams. In the case of Mullaperiyar, the CWC-led Expert Committee's inability to convince Kerala regarding the safety of the dam initiated state-sponsored independent studies which contradicted the findings of the Expert Committee. The crux of the present conflict over dam safety rests on the decision of the CWC led Expert Committee that the Mullaperiyar dam is safe to hold waters up to 142 ft and later

up to 152 ft. Even the Supreme Court order of 2006 is based on this assessment.

Ministry of Environment and Forests

The Ministry of Environment & Forests (MoEF) is the nodal agency for the approval of diversion of forest lands for any non-forestry purpose through the forest and environmental clearance process. The Mullaperiyar dam situated inside the Periyar Tiger Reserve of Kerala is under the purview of MoEF so that any activity which requires fresh diversion of land needs the clearance from the ministry as per the Environment (Protection) Act, 1986, the Forest Conservation Act, 1980 and the Wildlife Protection Act, 1972. The ministry involved itself in the Mullaperiyar conflict at two decisive junctures. Both the construction of the additional spillway at Mullaperiyar as a part of the dam strengthening measures undertaken by Tamil Nadu and the survey for a new dam carried out by Kerala had to be approved by the Ministry through its environment and forest clearance mechanism, which had taken its own toll through procedural delays, on the persistence of conflict over all these years. MoEF's critical role as an institution involved in the conservation of the country's natural resources will be put to test in the event of application for forest and environmental clearance for the new

dam, emerging as an option for the resolution of the Mullaperiyar conflict. It will be up to the Ministry to establish the environmental safeguards and downstream environmental flow requirements of the diverted river if a new dam becomes inevitable for the resolution of the conflict.

Scientific institutions

The inability of the Central Water Commission to convince Kerala regarding the safety of the Mullaperiyar dam led to the involvement of various research institutions in the scientific appraisal of the safety of the Mullaperiyar dam. The Indian Institute of Technology, Delhi and Roorkee and Indian Institute of Science, Bangalore had conducted studies related to hydrological and seismic safety of the Mullaperiyar dam. These institutions have played a major role in bolstering Kerala's efforts to scientifically challenge the CWC.

SOCIO-POLITICAL INSTITUTIONS

Farmers' Associations in Tamil Nadu

There are continuous rallies and protests by the farmers in Tamil Nadu demanding raising of the Mullaperiyar water level since the mid 1990's. Various farmers' organizations have been proactive in taking the conflict to newer

dimensions. The Periyar-Vaigai Single Crop Cultivating Agriculturist Society had approached the High Court of Tamil Nadu in 1997 demanding that water level be raised in the Mullaperiyar dam. Cumbum Basin Farmers' Association is another farmers group that has involved itself in the Mullaperiyar issue. They had opined that the Periyar water can be effectively put to use through an integrated use of Vaigai river system and its *kanmoys* (tanks), where water can be stored after it is released from Mullaiperiyar dam, and constructing a small dam near Varshanad, if necessary, to feed the Vaigai River. The Mullai Periyar Dam Rescue Committee (MPDRC) is another association closely working with the Tamil Nadu government and supported by many political parties, demanding an increase in the water level of Mullaperiyar reservoir.

Mullaperiyar Environmental Protection Forum

A civil society organisation that took the first public initiative to involve itself in the Mullaperiyar conflict from the Kerala side, Mullaperiyar Environmental Protection Forum (MEPF) had filed the writ petition in the Supreme Court against the Union Government and the states of Kerala and Tamil Nadu regarding the safety of the dam, the validity of the 1886 Lease Deed and the environmental

concerns related to the raising of the water level in the Mullaperiyar dam. The legal battle that ensued was fought by the organisation with little assistance from the Government of Kerala. The verdict of the Supreme Court against the interests of Kerala represented by MEPF was the turning point for the Kerala Government to take active interest in protecting its interests.

Mullaperiyar Samara Samithi

This organization became strong in Kerala at the immediate impact area of the Mullaperiyar dam in the panchayats of Vandiperiyar, Upputhura, Ayyappancoil where the threat of a dam break is the most imminent. They have been organizing protests, marches, a permanent strike outpost, hunger strikes and other mass mobilization programmes since 2006, demanding decommissioning of the dam and to garner support for the cause of Kerala. The samithi is now upholding the 'New Dam, New Agreement' slogan.

Online communities

Several online communities are actively engaged in discussions and sharing of information over Mullaperiyar. A website hosted by the Kerala side presents the case of Kerala in the Mullaperiyar controversy. Save Kerala Malayalam Bloggers Movement blog site

started in 2009 with the slogan of ‘Rebuild Mullaperiyar Dam, Save Kerala’ lists the links of all Malayalam and English blog posts related to this subject. From the side of Tamil Nadu also, there are several blog posts and online discussion groups on Mullaperiyar. Though these blog posts from both sides act as points of discussion and information sharing to some measure, a large segment of it is dedicated to inciting regional chauvinism.

Political Parties

Political parties in both states have been active in mobilizing, and influencing, popular discontent. All Political factions in Tamil Nadu have taken up Mullaperiyar as a prime issue and they have been influential in shaping the public perception and the nature of conflict in Tamil Nadu. In Kerala too, the Mullaperiyar issue overcomes the deep political divisions that otherwise exist in the state. As a result the amendment to the Kerala Irrigation and Water Conservation Act through which the Mullaperiyar water level was frozen at 136 ft was promptly achieved with unanimous support of the Assembly.

Media

Media as an institution has played a decisive role in the Mullaperiyar conflict.

There had been press reports as early as 1925 reporting leakages in the dam and expressing concern over the safety of the dam. The possibility of downstream disaster due to the breaking of the old dam was reported by ‘Times of India’, Bombay in 1962 as a fallout of which a joint inspection of the dam was held in 1964, followed by electrification and installation of wireless sets at the dam site. In 1979 a report carried in the Malayalam daily ‘Malayala Manorama’ on the unsafe dam had finally precipitated matters that marked the beginning of the current conflict. From print media to the latest online news channels, Mullaperiyar has been a topic of intense debate and opinion building since the 1990s.

Legal Institutions

The role that the legal institutions can take in interstate dispute resolution is limited because of the multifaceted issues that underlie a conflict. The extent to which the court can go into the merits of a case is also restricted. Mullaperiyar is a case in point as soon after the verdict of the Supreme Court in 2006 the case was back in court with renewed vengeance and fresh complications. The Supreme Court realizing these limitations of the legal mechanism has been trying to put in place other resolution mechanisms but these have remained perfunctory. Though the

constitution of India confers original jurisdiction on the Supreme Court to adjudicate on any interstate dispute, the judicial process which is accustomed to applying a definite standard or rule may not be of much help in situations which are vague and fluid and where each case is a law unto itself.

Expert Committees

A proliferation of committees was constituted both at the Supreme Court's and Centre's insistence and also at the

volition of the respective states. The seven-member expert committee of 2001, three-member parliamentary committee, state level expert committees, legislative committee of Kerala and most recently the high level Empowered Committee of the Supreme Court were all constituted towards adjudging the safety of the dam. Though instrumental in shaping the conflict these committees nonetheless failed in leading to a resolution since the core issues of the conflict were beyond the scope of these committees.

OPTIONS

In the case of Mullaperiyar conflict the options accessed include negotiations and third party adjudications. At the national level, interstate disputes over water are now being mostly resolved through interstate water dispute tribunals, which has not yet been attempted in the case of Mullaperiyar since the dispute at present is neither over resource sharing nor over interstate water rights. All the attempted options until now have had limited success since these have tried to resolve the conflict by addressing only the apparent issues. Any new option to be successful in long term resolution of the conflict will have to dig deeper into the issues that underlie the present conflict and ensure the participation of the multiple stakeholders in conflict resolution process.

ATTEMPTED OPTIONS

Arbitration

The lease deed 1886 makes the provision for arbitration as the mode of dispute resolution. “If and whenever any dispute or question shall arise between

the lessor and the lessee touching these presents of anything herein contained or the construction hereof or the rights, duties or liabilities of either party in relation to the promises the matter in difference shall be referred to two arbitrators or their umpire pursuant to and so as with regards to the mode and consequence of the reference and in all other respects to conform to the provisions in that behalf of the Code of Civil Procedure of 1882 of the Legislative Council of India or any then subsisting statutory modification thereof”. This provision had to be invoked very early in the history of Mullaperiyar, between the Madras Presidency and the Travancore State, over the dispute on the right to power generation. The amended lease deed of 1970 did not make any modification to this provision but it was never again attempted for resolving the dispute between the states of Tamil Nadu and Kerala.

Direct negotiation between the States

Interstate efforts at direct negotiations during the late 1990’s and early in 2000 met with little success as both the sides

were trenchant in their arguments. Even technical committees set up by the respective states did not arrive at a consensus. Moreover the suggestions put forth for further negotiations by one state were not acceptable to the other.

Mediation by the Central Government

The negotiation attempts by the Ministry of Water Resources that were often forced by Supreme Court directives, were limited in scope and constrained by the politics of coalition. The concerned states also did not approach the negotiation table with an open mind so that these meetings proved to be merely cases of buying time before the Supreme Court could be approached again.

Legal Recourse

In the forty-year conflict over Mullaperiyar the legal option has been the most heavily relied upon and thoroughly explored. After Tamil Nadu claimed completion of the CWC suggested strengthening measures by the mid 90's, there was a period of intense tension in both the states over the return to status quo of 152 ft FRL which culminated in parties seeking a legal recourse. The Supreme Court has had a critical role to play in directing the course of the dispute over the years through exploring various options such as centre-

mediated negotiations, Expert Committees and more importantly by bringing out latent issues in the conflict. The environmental concerns, grievances with the 1886 treaty, possibility of a new dam, right over resources, and the purview of an interstate water dispute tribunal were brought out during the hearing process. It is unfortunate that the only platform where the various aspects of the conflict are revealed is the highly exclusive forum of the Supreme Court. Legal recourse is also proving to be time consuming and expensive for both the states' exchequers. For instance, Tamil Nadu has spent Rs. 22.33 crores towards lawyers' fees alone until 2007 in the Mullaperiyar issue whereas the money spent in strengthening works of the dam was found to be only Rs. 18.02 crores from 1979 to 2007 as revealed by an Right-To-Information reply furnished by the Government of Tamil Nadu to the Secretary of the Tamil Nadu PWD Senior Engineers' Association.

Proposal for a new dam

A new dam as an option had come up during the initial discussions of the two states with CWC, as an alternative to long term strengthening measures to the existing dam but was later dropped. After the 2006 Supreme Court verdict the

new dam option was taken up strongly by Kerala both within the State and in the adjudication and negotiation forums. The site survey for a new dam is under way even though there are massive protests from Tamil Nadu against this option.

NEW OPTIONS

To understand the possible options that can lead to a creative and sustainable solution to the Mullaperiyar conflict there is a need to first flush out all the implicit issues of the conflict and points of divergence of mutual interests between the two states and discuss these in public forums. While the options attempted until now are at the level of the state and a few concerned organizations, there is growing rancour among the public on both sides of the border fed by incomplete and distorted information and propaganda. Therefore the quest for new options would have to be preceded by 1) the collection, documentation and public dissemination of the existing documents on the subject 2) independent technical studies to verify the claims and charges of both the states and 3) an open discussion on the Periyar Lease Deed and its amendments to lead towards the framework for a new agreement that would address the grievances and insecurities of both the states.

1. Civil Society Mediation - Multi Stakeholder Platforms

There are incipient attempts at the civil society level to start multi stakeholder discussions on the Mullaperiyar conflict. The Forum for Policy Dialogue on Water Conflicts in India is trying to bring together the various stakeholders to understand the issues involved in the Mullaperiyar conflict and to explore a common ground through dialogue. The reluctance of Tamil Nadu to engage in such an endeavour was evident in their first meeting aimed at initiating this process. If this process can persuade the multiple stakeholders in both the states to come together on a common platform, it can be a promising alternative to the present conflict resolution process.

2. Engagement of Media in the Resolution Process

There is immense potential in designing the options for resolution with the active involvement of media due to the huge role that the media as an institution has played in reconfiguring the Mullaperiyar issue from time to time. Moreover, media has been the major source of information to the public as to the directions taken by the conflict. But both the regional media have had their own versions and interpretations often

keeping with the state sentiments. If this limitation can be overcome by redefining the role of media as an essential constituent of the conflict resolution process, creative discussions towards resolution can be generated on both sides of the border.

3. Assessment of alternatives

Numerous suggestions and alternative options for the resolution of the conflict have emerged from various quarters especially after the Supreme Court verdict of 2006 failed to resolve the issue amicably. The proposal for a new dam put

forth by the Kerala Government, alternatives to the new dam proposal such as the suggestions for an integrated use of Vaigai river system and its *kanmoys* along with a small dam near Varshanad to feed Vaigai River expressed by Cumbum Basin Farmers' Association, proposals for sharing of electricity generated at Periyar power house with Kerala, are some of the options that have surfaced so far. All these and other alternatives that may emerge in future from various platforms will have to be rigorously scrutinized to arrive at the best possible solution.

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Periyar Lease Deed 1886

THIS INDENTURE made the Twenty ninth day of October One Thousand Eight hundred and Eighty Six (corresponding with the fourteenth day of Tulam 1062 of the Malabar Era) BETWEEN THE GOVERNMENT OF "HIS HIGHNESS THE MAHARAJA OF TRAVANCORE (herein after called the lessor) of the one part and THE RIGHT HONOURABLE THE SECRETARY. OF STATE FOR INDIA IN COUNCIL of the other part WITNESSETH that in consideration of the rents hereinafter reserved and of the covenants by the said Secretary of State for India in Council hereinafter contained the lessor doth hereby demise and grant unto the said Secretary of State for India in Council his successors and designs (all of whom are intended to be included in and to be referred to by the expression "the lessee" hereinafter used).

First.- All that tract of land part of the territory of TRAVANCORE situated on or near the Periyar River bounded on all sides by a Contour Line one hundred and fifty five feet above the deepest point of the bed of the said Periyar river at the site of the Dam to be constructed there

and shown in the map or plan hereunto annexed and which said tract of land is delineated in the said map or plan hereunto annexed and therein coloured blue and contains eight thousand acres or thereabouts.

Secondly.- All such land in the immediate vicinity of the tract of land above mentioned and not exceeding the whole in extent one hundred acres as may be required by the lessee for the execution and preservation of the irrigation works to be executed by the lessee within the said tract of land first above mentioned and which said works are commonly called or known as the "Periyar Project".

Thirdly.- Full right power and liberty to construct make and carry out on any part of the said lands hereinbefore demised and to use exclusively when constructed made and carried out by the lessee all such irrigation works and other works ancillary thereto as the lessee shall think fit for all purposes or any purpose connected with the said Periyar Project or with the use exercise or enjoyment of the lands rights liberties and powers

hereby demised and granted or any of them.

Fourthly.- All waters following into through over or from the said tract of land firstly hereinbefore demised.

Fifthly.- All timber and other trees woods underwoods and saplings which now are or shall during the continuance of this demise be growing or standing upon any of the said demised lands with liberty to the lessee to fell grub up and use free of all charge for the same all such of the said timber and other trees woods underwoods and saplings as shall be required in or about the construction or maintenance of or otherwise for all or any of the purpose of the said works or any of them or in connection therewith provided always that the lessee shall not be responsible for the destruction of or for any damage done to any others of the said timber or other trees woods underwoods or saplings for the time being growing or standing upon any of the said demised lands by or through the construction or maintenance of the said works or any of them.

Sixthly.- The right of fishing in over and upon such waters tanks and ponds as now are or shall during the term hereby granted be upon or within any of the said demised lands.

Seventhly.- Free way leave and right and liberty of way and passage in manner hereinafter mentioned through and over the lands of the lessor and liberty for the lessee his officers agents servants and workmen to enter upon and to make lay and repair such one and not more than one main or wagon way from any point on the boundary line between British Territory in India and the territory of Travancore to any part of the said demised lands, in the usual manner by digging the soil and levelling the ground and making gutters through and over the lands of the lessor between such point and the said demised lands for leading and carrying with horses and other cattle wagons carts and other carriages over and along the said wagon way unto and towards the said demised lands all materials required for all or any of the said works and other materials matters and things whatsoever to and from any of the said demised lands and liberty for the lessee his officers agents servants and workmen as occasion shall require to lay and fix wood timber earth stones gravel and other materials in and upon the lands of the lessor and to cut dig and make trenches and water courses for the purpose of keeping the said wagon way free from water and to do all other things necessary or convenient as well for making and laying the said wagon way as for repairing

and upholding the same whenever there shall be occasion and liberty for the lessee his officers agents servants and workmen to go pass and re-pass along the said wagon way either on foot or with horses and other cattle wagons carts or other carriages unto and from the said demised lands and all other liberties and appurtenances necessary or convenient for making laying altering repairing using or removing the said wagon way or any part thereof the lessee making reasonable compensation unto the lessor and the tenants or occupiers for all damage occasioned by or in the exercise of the said liberties to the lands belonging to him or them except those actually taken and used for the line of the said wagon way. Except nevertheless out of this demise all sovereign rights of the lessor in and to the said demised lands or any of them other than the rights liberties and powers hereinafter particularly mentioned and expressed to be hereby demised and except all minerals and precious stones whatsoever in and under the said lands hereby demised or any of them other than earth rubble stone and lime required for the said works or any of them together with liberty for the lessee to erect build and setup alter maintain and use upon or within the lands hereby demised such houses and other buildings and to take free of all charge for the same all such

earth rubble stone and lime therefrom as shall be necessary or proper for effectually or conveniently making and maintaining the said several works and generally to do all such things whatsoever in or upon hereby demised lands as shall be necessary or expedient for the construction and repair of the said irrigation and accommodation works and for any of the purposes of these presents to have and to hold the premises herein before expressed to be hereby demised and granted unto the lessee from the first day of January one thousand eight hundred and eighty six for the term of nine hundred and ninety nine years yielding and paying therefore by the same being deducted from the tribute from time to time payable by the lessor to the Government of India or Madras the yearly rent of forty thousand rupees of British India commencing from the day on which the waters of the said Periyar river now flowing into the said territory of Travancore shall by means of the said works be diverted and shall flow into British territory the first of such payments to be made at the expiration of twelve calendar months from such last mentioned date and yielding and paying from the date from which the said yearly rent of forty thousand rupees of British India shall become payable and over and above the same the further yearly rent

(hereinafter called acreage rent) after the rate of five rupees of British India currency every acre and so in proportion for a less quantity of the lands hereby demised and granted which on the completion of the said works shall be found on measurement to be included within the said contour line in excess of the said area of eight thousand acres the first of such payments of acreage rent to be made at the time and place when and where the said yearly rent become payable hereinbefore provided and the lessee doth hereby covenant with the lessor that the lessee will pay to the lessor the several rents hereinbefore reserved at the times hereinbefore appointed by allowing the same to be deducted from the tribute from time to time payable by the lessor as aforesaid and will at the expiration or sooner determination of the said term peaceably deliver up to the lessor all the said premises hereby demised in such state and condition as shall be consistent with a due regard to the provisions of this lease and in particular will within two years after the expiration or determination of the said term clear from the said lands hereby demised all machinery and plant in or about the same or any part thereof or shall at the option of the lessee abandon all claim to such machinery and plant or to such part or parts thereof as the lessee shall think fit provided always

and it is hereby agreed and declared that it shall be lawful for the lessee at any time before the expiration of the said term to surrender and yield up all the demised premises to the lessor in which case and immediately upon such surrender the rents hereby reserved shall cease provided always and these presents are on this express condition that if and whenever there shall be a breach of any of the covenants and agreements by the lessee herein contained the lessor may re-enter upon any part of the said premises in the name of the whole and thereupon the said term of nine hundred and ninety nine years shall absolutely determine without prejudice nevertheless to the recovery of any rent or money then payable or to the liability of the lessee to perform and to the right of the lessor to enforce the performance and observance of every or any covenant or stipulation herein contained and which ought to be performed or observed after the expiration of the said term in case the same had expired by effluxion of time and the lessor doth hereby covenant with the lessee that the lessee paying the rents hereinbefore reserved in manner aforesaid and performing and observing all the covenants and agreements by the lessee herein contained may quietly hold and enjoy all the lands rights and premises hereinbefore demised and granted during

the said term and also free of rent so much of the said lands as shall then be required for any machinery or plant for two years after the expiration or determination of the said term without any interruption or disturbance by the lessor or any person claiming through or in trust for the lessor and that if the lessee shall be desirous of taking a renewed lease of the said premises for the further term of nine hundred and ninety nine years from the expiration of the term hereby granted and of such desire shall prior to the expiration of the said last mentioned term given to the lessor six calendar months previous notice in writing signed by any Secretary to the Government of Madras and shall pay the rents hereby reserved and perform and observe the several covenants and agreements herein contained and on the part of the lessee to be observed and performed up to the expiration of the said term hereby granted the lessor will upon the request and at the expense of the lessee forthwith execute and delivery to the lessee a renewed lease of the said premises for the further term of nine hundred and ninety nine years at the same yearly acreage rent and under and subject to the same covenant provisions and agreements to including this present covenants as are

herein contained, if and whenever any dispute or question shall arise between the lessor and the lessee touching these presents of anything herein contained or the construction thereof or the rights, duties or liabilities of either party in relation to the premises the matter in difference shall be referred to two arbitrators or their umpire pursuant to and so as with regards to the mode and consequence of the reference and in all other respects to conform to the provisions in that behalf of the Code of Civil Procedure of 1882 of the Legislative Council of India or any then subsisting statutory modification thereof.

In Witness whereof Vembankam Ramiengar Esq., C.S.I., Diwan of His Highness the Maharaja of Travancore by order and direction of the Government of His Highness the said Maharaja and John Child Hannyngton Esquire, Resident of Travancore and Cochin by order and direction of the Right Honourable the Governor in Council of Fort St. George acting for and on behalf of the Right Honourable the Secretary of State for India in Council have hereunto set their respective hands and seals the day and year first above written.

Signed sealed and delivered by the
above named Vembankam Ramiengar in
the presence of

V. RAMIENGAR

K.K. Kuruvila,
Maramath Secretary, Travancore Sircar

J.H.PRINCE
Ag. Head Sircar Vakil,
Travancore Government

Signed sealed and delivered by the
above named John Child Hannyngton in
the presence of

J.C. HANNYNGTON

K.K. Kuruvila,
Maramath Secretary, Travancore Sircar

J.H.PRINCE
Ag. Head Sircar Vakil,
Travancore Government

Agreement Amending the Periyar Lease Deed of 1886

Dated 29th May, 1970

This agreement is executed on this the twenty ninth day of May One Thousand Nine hundred and Seventy BETWEEN the Governor of Kerala (hereinafter referred to as “the Government of Kerala” which expression shall, where the context so admits, include his successors in office and assigns) of the one part and the Governor of Tamil Nadu (hereinafter referred to as “the Government of Tamil Nadu” which expression shall where the context so admits, include his successors in office and assigns) of the other part.

WHEREAS by a lease deed executed on the twenty ninth day of October, one thousand eight hundred and eighty six (hereinafter referred to as “the Principal Deed”) certain properties in the erstwhile State of Travancore were leased out to the Governor of the erstwhile province of Madras in connection with the Periyar Irrigation Project subject to the terms, conditions and covenants therein contained;

WHEREAS the rights, liabilities and obligation of the parties under the principal deed have devolved on the Government of Kerala and the

Government of Tamil Nadu they being successors in interest;

WHEREAS the Government of Tamil Nadu have agreed to surrender to the Government of Kerala their rights of fishing in, over and upon the waters, tanks and ponds in the land comprised in the said lease hold and also to revise the conditions in the Principal deed regarding the rate of acreage rent in the manner herein mentioned.

WHEREAS the parties hereto are desirous to amend the Principle deed in order to give effect to this agreement;

AND WHEREAS these presents are supplemental to the Principal deed:

NOW THESE PRESENTS WITNESS and parties hereto mutually agree as follows:-

1. The Principal deed shall be read and constructed as if:
 - a) Clause 6 therein, namely:-

“Sixthly, the right of fishing in, over and upon such waters, tanks and ponds as now are or shall during the term hereby granted be upon or within any of the demised lands” is deleted;
 - b) In clause 7 for the words

“seventhly” occurring at the beginning of the clause the word “sixthly” is substituted.

- c) In clause 7, the words “yielding and paying therefore by the same being deducted from the tribute from time to time payable by the lessor to the Government of India or Madras the yearly rent of Forty thousand rupees of British India commencing from the day on which the waters of the said Periyar river now flowing into the said territory of Travancore shall by means of the said works be diverted and shall flow into the British territory, the first of such payments to be made at the expiration of twelve calendar month from such last mentioned date and yielding and paying from the date from which the said yearly rent of forty thousand rupees of British India currency for every acre and so in proportion for a less quantity of the lands hereby demised and granted which on the completion of the said works shall be found on measurement to be included within the said contour line in excess of the said area of eight thousand acres the first of such payments of acreage rent to be made at the time and place

when and where the said yearly rent shall become payable as hereinbefore provided and the lessee doth hereby covenant with the lessor that the lessee will pay to the lessor the several rents hereinbefore reserved at the times hereinbefore appointed by allowing the same to be deducted from the tribute from time to time payable by the lessor as aforesaid” shall be deleted and in their place the following words shall be substituted, namely “and the lessee doth hereby covenant with the lessor that the lessee will pay the lessor yearly rent at the rate of Rs.30/-(Rupees thirty only) for every acre of the said lands demised and granted within the said contour line including the 8,000 acres referred to in clause one and the first of such payment of yearly rent be made at the expiration of twelve calendar months from the due date of payment in the year one thousand nine hundred and sixty nine as per the Principal deed and the lessee doth hereby covenant with lessor that the rent alone herein mentioned shall be subject to revision once in every thirty years from the twenty ninth day of May

one thousand nine hundred and seventy at such rate as may be mutually agreed upon and the lessee doth hereby covenant with the lessor that the lessee will pay to the lessor the yearly rent hereinbefore reserved or at such revised rent as the case may be.

- (d) the words “at the same yearly and acreage rent” occurring after the words “will upon the request and at the expenses of the lessee forthwith execute and deliver to the lessee a renewed lease of the said premises for the further term of 999 years” and before the words “and under and subject to the same covenant provisions” shall be deleted.
2. The Government of Kerala agree to exercise the right of fishing in the lands demised under the Principal deed without affecting in any way the irrigation and power rights of the Government of Tamil Nadu.
 3. Save as varied as aforesaid the Principal deed and all the conditions and covenants whereof shall remain in full force and effect. In witness whereof Sri.K.P. Viswanathan Nair, Secretary to Government of Kerala, Water and Power department for and

on behalf of the Governor of Kerala and Thiru. K.S. Sivasubramanyan Secretary to Government Tamil Nadu, P.W.D., for and on behalf of the Governor of Tamil Nadu have hereunto set their hands the day and year first above written.

Signed by Sri. K.P.Viswanathan Nair,
Secretary to Government of Kerala, Water
and Power Department

In the presence of Witnesses:

1. Sri.R.Gopaldaswamy,
Secretary to Government of Kerala,
Public Works Department
2. Sri.P.Sankunni Menon,
Secretary to Government of Kerala,
Law Department

Signed by Thiru. K.S.
Sivasubramanyan, Secretary to
Government of Tamil Nadu, Public Works
Department

In the presence of Witnesses:

1. Thiru.R. Ramasubramaniam,
Secretary to the Government of Tamil
Nadu, Law Department
2. Thiru. G. Jas
Joint Secretary to the Government
of Tamil Nadu, Public Works
Department

(APPENDIX III)

Tamil Nadu-Kerala Agreement on Periyar Hydro Electric Scheme

Dated 29th May 1970

AGREEMENT made this the twenty ninth day of May, one thousand nine hundred and seventy seven between the Governor of Kerala (hereinafter referred to as “the Government of Kerala”, which expression shall, where the context so admits, include his successors in office and assigns) of the one part and the Governor of Tamil Nadu (hereinafter referred to as “the Government of Kerala”, which expression shall, where the context so admits, include his successors in office and assigns) of the other part.

WHEREAS an indenture was made on the twenty ninth day of October one thousand eight hundred and eighty six (hereinafter referred to as “the Principal deed”) between the Maharaja of Travancore and the then Secretary of the State for India in Council demising certain territory and waters of the erstwhile Travancore State to the then Government of Madras in connection with the Periyar Irrigation Project;

AND WHEREAS a dispute that arose between the erstwhile Government of Travancore and the then Government of Madras on the issue whether the

principal deed entitled the then Government of Madras to use the Periyar waters demised to them therein for generation of hydro electric power was referred to an arbitration tribunal consisting of Sir Davis Devadoss an Ex Judge of the Madras High Court, and M.R.R.Y Dewan Bahadur V.S. Subramoniya Aiyer Avergal, an Ex – Dewan of the Travancore State and the arbitrators who could not agree, each gave a separate award and the case was in consequence, referred to an umpire. Sir Nalini Ranjan Chatterjee and the Umpire in his award dated the twelfth May, one thousand nine hundred and forty one declared as follows:-

- (i) that, upon a construction of the principal deed, the lessee had the right to use the water for irrigation purposes only;
- (ii) that the lessee had no right to use the water for any purpose other than irrigation ; and
- (iii) that supposing it was possible to use hydro electric energy for carrying or distributing water or doing any other act in connection with irrigation, the

lessee had the right to generate and use hydro electric energy for such irrigation purpose only;

AND WHEREAS with a view to arriving at a settlement on the question of utilizing the said Periyar waters for generation of hydro electric power also the representatives of the erstwhile Government of Travancore and erstwhile Government of Madras had discussed the subject and had come to an agreement.

AND WHEREAS this deed is supplemental to the principal deed;

NOW these presents witness that the parties hereto agreed in the manner following, that is to say :-

1. The Government of Kerala hereby convey to the Government of Tamil Nadu the power rights in the said Periyar waters which, in the arbitration award of Sir Nalini Ranjan Chatterjee dated the twelfth May, one thousand nine hundred and forty one were declared to vest in the erstwhile Government of Travancore and the Government of Tamil Nadu shall be at liberty to develop, at their own cost and for their exclusive benefit hydro electric power for any purpose at the Periyar Power House from the waters of the Periyar River demised and granted to the then Government of Madras under the principal deed;
2. The government of Kerala hereby convey to the Government of Tamil Nadu full right, power and liberty to construct any head works, tunnels, pumping installations, waterways, transmissions, distribution and telephone lines, and such other appurtenances or works and camps for staff and labour which the Government of Tamil Nadu decide upon as necessary to be constructed in the territory of the Government of Kerala in connection with the generation of hydro electric power at the Periyar Power House in the manner aforesaid.
3. (a) The Government of Kerala hereby convey and demise the land measuring 42.17 acres in the territory of the said Government more fully described in the Schedule hereunder, to the Government of Tamil Nadu on the terms and conditions specified in the said Schedule in connection with the construction of the works referred in clause 2.
- (b) The Government of Kerala hereby agree to convey to the Government of Tamil Nadu for purpose of alteration, maintenance, operation and repair of the works relating to

- the aforesaid scheme such land or land as may be required by them in future of such period and subject to such terms and conditions as may be agreed upon between the two Governments.
4. The Government of Kerala hereby convey and demise unto the Government of Tamil Nadu free way, leave and right and liberty of way agents, servants, and workmen and all vehicles as well as plant and machinery of the Government of Tamil Nadu or of the contractors engaged by them for the survey, construction, alteration, maintenance, operation or repairs of the works mentioned in clause 2 or for all or any other purpose or purposes connected with the use and exercise of rights, powers, and liberties under this agreement by the Government of Tamil Nadu.
 5. The Government of Kerala agree to afford all other reasonable facilities to the Government of Tamil Nadu for the construction, alteration, maintenance, operation and repair of the works referred to in clause 2.
 6. The Government of Kerala agree not to levy any tax on the Government of Tamil Nadu for all or any of the purposes connected with the powers, rights and liberties conveyed under this agreement or the use there by the Government of Tamil Nadu.
 7. In consideration of the conveyance of the power rights under clause the Government of Tamil Nadu shall pay annually to the Government of Kerala an amount calculated at the following rates;
 - (i) When the electrical energy generated by the Government of Tamil Nadu at the Periyar Power House not exceed 350 million units in a year, at Rs.12 (Rupees twelve) per KW year of electrical energy; and
 - (ii) When the electrical energy generated at the said Periyar Power House exceeds 350 million units in a year, at Rs.12 (Rupees twelve) per KW year upto 350 million units of electrical energy so generated, and at Rs.18 (Rupees eighteen) per KW year for the electrical energy generated in excess of 350 million units.
- Note:-* For the purpose of this clause KW year shall mean 8760 units of electrical energy.
- The first of such annual payments shall become due from the Government of Tamil Nadu to the Government of Kerala on the expiry of twelve months

from the date on which the Government of Tamil Nadu begin to generate electrical energy from the Periyar waters at the Periyar Power House. Each subsequent payment shall become due on the completion of every twelve months from the date on which the first annual payment becomes due as aforesaid. The Government of Tamil Nadu shall make the said annual payments referred to above to the Government of Kerala within thirty days from the date on which each such payments shall become due.

8. The Government of Tamil Nadu agree to pay to the Government of Kerala reasonable compensation for any damage caused to any of the adjoining demised land by reason of the exercise by the Government of Tamil Nadu of the powers and rights conferred to them by this agreement.
9. The procedure and other details connected with the implementation of the provisions of this agreement shall be agreed upon between the Tamil Nadu State Electricity Board and the Kerala State Electricity Board.
10. Any dispute or difference arising between the Government of Kerala and Government of Tamil Nadu touching these presents or anything

herein contained or the interpretation thereof or the rights, duties or liabilities of either party in relation to the premises shall be referred to a single arbitrator to be mutually agreed upon by both the parties and the arbitrator's decision thereon shall be the final and binding on both the parties.

11. Save as varied as herein before provided, the principal deed as amended on date by another agreement executed to day and all terms and conditions thereof shall continue to be binding and in full force and effect.
12. This supplemental deed shall be deemed to have taken effect on the thirteenth November, one thousand nine hundred and fifty four.

THE SCHEDULE

1. *Description of the land conveyed:-*
All that piece and parcel of land situated east of Kumily village within the Kumily Panchayat area in Peermedu Taluk measuring 42.17 acres, the land comprising of three plots bounded by the lands given below:

		North S. No.	East S. No.	South S. No.	West S. No.	Area in acres
1	Plot No. 1 by the side of old shaft near Travellers Bangalow	42/1	42/1	42/1	46/32	21.72
2	Plot No.2 by the side of new shaft	28/3 & 29/1	28/1	27/2	46/25, 25/1 & 26/3	18.37
3	Plot No. 3 of 100 feet width along the road connecting the Plot No.2 and the Madras Kerala state boundary	overland	29/1			2.08
	Total					42.17

II. CONDITIONS

- (1) The Government of Tamil Nadu shall, at their own cost demarcate the land conveyed to them by the Government of Kerala
- (2) The Government of Tamil Nadu shall vacate and hand over possession of lands if any, not vacated on twenty ninth of May one thousand nine hundred and seventy to the Government of Kerala on or before the first July, one thousand nine hundred and seventy.
- (3) After the thirtieth June, one thousand nine hundred and seventy the Government of Tamil Nadu shall have no claim whatsoever either by way of ownership or otherwise on the buildings and other constructions already existing, or raised and left by them in the said land, that Government being free to clear the said land of all structures constructed for works, and excavated stones, dumped before the aforesaid date.
- (4) All rubbish dumped in the said lands shall become the property of the government of Kerala after the first July one thousand nine hundred and seventy.
- (5) The government of Tamil Nadu shall have no rights to the trees felled by them in the said lands and such trees shall, immediately after they are felled, be handed over to the game range office, Thekkadi.
- (6) The government of Tamil Nadu shall have no right for the use of any produce from the said lands or any of the surrounding forests.
- (7) The offices of the Game Department of the Government of Kerala shall have the full rights and liberty to enter the said lands for purpose of inspection only

(8) All residuary rights not specifically conferred on the government of Tamil Nadu shall vest in the Government of Kerala.

In witness whereof Sri. K.P. Viswanathan Nair, Secretary to the Government of Kerala, Water and Power Department acting for, and on behalf and by the order and direction of the

Governor of Kerala and Thiru. K.S. Sivasubramanyan, Secretary to the Government of Tamil Nadu, Public Works Department acting for, and on behalf and by the order and direction of the Governor of Tamil Nadu have hereunto set their hands the day and year first above written.

Signed by the above named
Sri. K.P. Viswanathan Nair
in presence of:

Witness

1. P. Sankunni Menon
Secretary to the Government of
Kerala
Law Department, Trivandrum
2. R. Gopaldaswamy
Secretary to the Government of
Kerala
PWD, Trivandrum

Signed by the above named
Thiru. K.S. Sivasubramanyan
in presence of:

Witness

1. I. Abdul Razack
Joint Secretary to the Government
of Tamil Nadu, PWD, Madras
2. S. Vadivelu
Joint Secretary to the Government
of Tamil Nadu, Law Department,
Madras

(APPENDIX IV)

Judgment of the Supreme Court 2006

Case Note: Case concerned with the safety of a dam if the level of the water was to be raised. The court allowed the level to be raised in view of the fact that no danger was posed to human beings and the environment in doing so.

AIR2006SC1428, 2006(2) SCALE680, (2006)3SCC643

IN THE SUPREME COURT OF INDIA

Decided On: 27.02.2006

Mullaperiyar Environmental Protection Forum

v.

Union of India (UOI) and Ors.

Hon'ble Judges:

Y.K. Sabharwal, C.J., C.K. Thakker and P.K. Balasubramanyan, JJ.

JUDGMENT

Y.K. Sabharwal, C.J.

1. Mullaperiyar reservoir is surrounded by high hills on all sides with forest and is a sheltered reservoir. The

orientation of the dam is such that the direction of wind in the south west monsoon would be away from the dam. It is said that for past 100 years, Tamil Nadu Government Officers have been approaching the reservoir during the flood season only from Thekkady side in a boat and have not noticed any significant wave action.

2. The main question to be determined in these matters is about the safety of the dam if the water level is raised beyond its present level of 136 ft. To determine the question, we may first narrate factual background.
3. An agreement dated 29th October, 1886 was entered into between the Maharaja of Travancore and the Secretary of State for India in Council whereunder about 8000 acres of land was leased for execution and preservation of irrigation works called 'Periyar Project'. In pursuance of the said agreement, a water reservoir was constructed across Periyar river during 1887-1895. It is known as Mullaperiyar Dam consisting of main dam, baby dam and other ancillary works.

4. The salient features of the dam as mentioned in the agreement are as follows:

Type of Dam	Masonry Dam
Length of the main dam	1200 ft. (365.76 mt.)
Top of the dam	155 ft. (47.24 mt.)
Top of solid parapet	158 ft. (48.16 mt.)
Maximum height of dam (from deepest foundation)	176 ft. (53.64 mt.)
FRL (Full Reservoir Level)	152 ft. (46.33 mt.)
MWL (Design)	155 ft. (47.24 mt.)
Crest level of spillway	136 ft. (41.45 mt.)
Maximum water level reached During floods (till date)	154.80 ft. (47.18mt) on 03.01.43
Spillway capacity	10 vents of 36' x 16' (10.97 m. x 4.88 m.)
Storage Capacity (gross)	443.23 m.cu.m (15.662 TMC.ft)
Live capacity	299.13 m.cu.m. (10.563 TMC.ft)
Irrigation benefit in Tamil Nadu	68558 ha. (169408.68 acres)
Length of Baby dam	240 ft.(73.15 mt.)

5. In the past, reservoir was filled up to full level of 152 ft. as per the agreement. The agreement was modified in the year 1970. The State of Tamil Nadu was allowed to generate electricity from the project and it surrendered fishing rights in the leasehold land in favour of State of Kerala. It also agreed to pay annually a sum specified in the agreement to the State of Kerala. The Government of Kerala was also granted right of fishing over and upon the waters, tanks and ponds in the land and agreed that the principal deed and all the conditions shall remain intact without affecting in any way the irrigation and power

right of the Government of Tamil Nadu.

6. According to the petitioner, there was leakage in the gallery of the dam which affected its security and, therefore, the water level was stopped at 136 feet. In view of such situation, the Central Water Commission (CWC) inspected the dam, held meetings with representatives of both the States of Kerala and Tamil Nadu for considering ways and means to strengthen the Mullaperiyar Dam. At the meeting, certain decisions were taken for the purpose of ensuring security and safety of reservoir and by taking several necessary measures. Three

types of measures were envisaged, namely, (i) emergency measures, (ii) middle term measures, and (iii) long term measures. The progress of implementation of measures was also reviewed in the meetings held in 1980, 1983, 1996 and 1997. In this light, it is claimed that water level cannot be raised from its present level of 136 feet.

7. In view of apprehension expressed in the light of leakage, in the year 1979 the water level was allowed upto 136 ft. instead of 152 ft. After thorough study and considering all aspects, the CWC felt that certain steps were required to be taken immediately and both the States of Tamil Nadu and Kerala ought to cooperate. On taking those steps, water would be allowed to be filled upto 142 feet. Some other steps were also suggested for allowing the water to be filled in at the full level of 152 feet. The State of Kerala expressed reservations against the report submitted by CWC and according to a dissent note, appended by the representative of the State of Kerala, the water level could not be allowed to be raised beyond 136 feet. For the present, the only question is whether water level can be allowed to be increased to 142 feet or not.
8. The State of Kerala has filed an affidavit justifying its stand of not allowing raising of water level from 136 feet. According to it, the life of the dam was said to be 50 years from the date of construction. Since it had completed more than 100 years, it had served the useful life. It was, therefore, dangerous to allow raising of water level beyond 136 feet. It was also stated that if something happens to the dam, serious consequences could ensue and three adjoining districts could be completely wiped out and destroyed. It was also the stand of the State that the dam was constructed at a time when the design and construction techniques were in infancy. There was no testing laboratory to get accurate and detailed tests of construction materials. The stress and other elements were observed in the dam right from the initial filling and remained there in spite of remedial measures taken out. Moreover, there were frequent tremors occurring in that area and in case of an earthquake, it could result in serious calamities and total destruction of life and property. It was also alleged that the technical officials of CWC had submitted the report without effective participation

of the technicians from Kerala and view points of Kerala had not been considered at all. According to the State, CWC also could not be considered as the highest technical body in the country for giving technical advice and the decision taken by CWC without consultation of State of Kerala, was not binding on the State.

9. On the other hand, the State of Tamil Nadu said that the apprehension voiced by the State of Kerala was totally ill-founded, baseless and incorrect and based on mere figment of imagination. CWC was the highest technical authority with the required expertise on the subject. It had inspected the dam in detail and found various allegations as incorrect and baseless. It also stated that an expert committee was constituted in pursuance of an order passed by this Court and a report was submitted in the year 2001. As per the report, water level deserves to be allowed to be raised upto 142 feet as an interim measure on taking certain steps and after execution of the strengthening measure in respect of Baby Dam, earthen bund and on completion of remaining portion, the water level could be allowed to be restored at FRL i.e. 152 feet. Unfortunately, however, the State of Kerala did not cooperate and did not allow increase of water level even upto 142 feet. It was stated that the committee consisting of experts considered the question and thereafter various recommendations were made and actions were suggested. It was, therefore, not open to the State of Kerala to refuse to cooperate and not to accept the suggestions and the recommendations of CWC. According to the State of Tamil Nadu, its prayer for raising water level upto 142 feet at the initial stage and 152 feet at the final stage deserves to be accepted. A Committee was constituted with terms of reference as under:
 - (a) To study the safety of Mulla Periyar Dam located on Periyar river in Kerala with respect to the strengthening of dam carried out by the Govt. of Tamil Nadu in accordance with the strengthening measures suggested by CWC and to report/advise the Hon'ble Minister of Water Resources on the safety of the dam.
 - (b) To advise the Hon'ble Minister of Water Resources regarding raising of water level in Mulla Periyar reservoir beyond 136 ft.

(41.45 m) as a result of strengthening of the dam and its safety as at (a) above.

The Committee will visit the dam to have first hand information and to assess the safety aspects of the dam. It will hold discussions with Secretary, Irrigation of the Kerala Govt. as well as Secretary, PWD, Govt. of Tamil Nadu with respect to safety of the dam and other related issues.

10. According to the State of Tamil Nadu, the Committee after inspecting the dam and after holding discussions with the officials of the two States, submitted its interim report wherein recommendations were made as under:

1. The Tamil Nadu PWD Department should immediately test the masonry of the Baby dam to find out the permissible tensile strength that can be adopted for the lime surkhy mortar used in the construction of Baby dam. Central Soil and Materials Research Station (CSMRS), Government of India, New Delhi, should carry out these tests. CSMRS are specialist in carrying out geophysical and core tests and have a good reputation. These tests should

be carried out in the presence of the representatives of Tamil Nadu PWD, Irrigation Department, Government of Kerala and CWC. The results of these tests should be made available to the Committee by end of November, 2000. The Government of Kerala should permit Tamil Nadu PWD & CSMRS to carry out these tests without any hindrance.

2. Core samples of Baby dam shall also be extracted and tested by CSMRS, New Delhi, at the upstream and downstream faces of the dam. These results may be used to develop co- relation between the actual tests and the results obtained by geophysical testing.
3. The strengthening measures pertaining to the Baby dam and the earthen bund as already suggested by the CWC and formulated by the Government of Tamil Nadu should be carried out at the earliest. Government of Kerala is requested to allow the execution of strengthening measures of the Baby dam and earthen bund immediately.

4. Raising of water level beyond 136 ft. (41.45 m) will be decided after obtaining the tensile and compressive strength of the masonry of the Baby dam.
11. The final report of the committee shows that certain more steps were required to be taken before raising of reservoir level upto FLR i.e. 152 feet and those recommendations are:
1. The strengthening measures pertaining to Baby dam and the earthen bund, as already suggested by CWC and formulated by the Government of Tamil Nadu, should be carried out at the earliest.
 2. Government of Kerala should allow the execution of strengthening measures of Baby dam, earthen bund and the remaining portion of about 20 m of parapet wall on the main Mulla Periyar Dam upto EL 160 ft. (48.77 m) immediately.
 3. CWC will finalise the instrumentation for installation at the main dam. In addition, instruments will be installed during strengthening of Baby dam, including the earthen bund, so that monitoring of the health of Mulla Periyar dam, Baby dam and earthen bund can be done on a continuous basis.
4. The water level in the Mulla Periyar reservoir be raised to a level where the tensile stress in the Baby dam does not exceed 2.85 t/m² (as suggested by Shri Parameswaran Nair, Kerala representative) especially in condition E (full reservoir level with earthquake) as per BIS Code IS 6512-1984 with $a_h = 0.12$ g and analysis as per clause Nos. 3.4.2.3 and 7.3.1 of BIS Code 1893-1984.
 5. The Committee Members discussed the issue of raising of water level above EL 136.00 ft. (41.45 m) after studying the analysis of safety of Baby dam. Prof. A. Mohanakrishnan, Member of Tamil Nadu Government, opined in the light of para 4 that the water level should be raised upto at least EL 143.00 ft. (43.59 m) as the tensile stresses are within the permissible limits. Shri M.K. Parameswaran Nair, Member of Kerala Government did not agree to raise the water level above EL 136.00 ft. (41.45 m).

However, the Committee after detailed deliberations, has opined that the water level in the Mulla Periyar reservoir be raised to EL 142.00 ft. (43.28 m) which will not endanger the safety of the Main dam, including spillway, Baby dam and earthen bund. The abstracts of the calculations for stress analysis are enclosed as Annex. XIX.

6. This raising of reservoir level upto a level where the tensile stress does not exceed 2.85 t/m² during the earthquake condition is an interim measure and further raising of water level to the FRL EL 152.00 ft. (46.33 m) [original design FRL of the Mulla Periyar Reservoir] be studied after the strengthening measures on Baby dam are carried out and completed.
12. The State of Kerala continued to resist raising of water level. The objections raised by the representative of State of Kerala were considered by the Expert Committee and taking into account the matter in its entirety and keeping in view the safety of dam, certain suggestions were made. It required the State of Tamil Nadu to take those steps. The Expert Committee stated that it was equally obligatory on the part of State of Kerala to act in accordance with the suggestions and recommendations made by the CWC and that the State of Kerala cannot refuse to cooperate on the ground that raising of water level would cause serious problem in spite of the report of the Expert Committee and recommendations and decision by CWC.
13. In the writ petition filed by Mullaperiyar Environmental Protection Forum, various prayers have been made. They have, inter alia, prayed that agreements of 1886 and 1970 be declared as null and void and consequential relief be granted and also that Section 108 of the States Re-organisation Act, 1956, be declared ultra vires and unconstitutional as it encroaches upon legislative domain of the State Legislature under Entry 17 of List II of the Seventh Schedule of the Constitution of India.
14. The petitioner has also raised objection about the legality of the agreement between the Maharaja of Travancore and the Governor General. It is claimed that the agreement was entered into in

- ‘unholy’ haste and virtually it was thrust upon and the Maharaja was forced to accept it. It was also submitted that under Section 108 of the States Reorganization Act, any agreement or arrangement entered into by Central Government and one or more existing States relating to the right to receive and utilize water can continue to remain in force subject to certain adaptations and modifications as may be agreed upon between the successor States. Since there was no such agreement after November 1, 1957, the agreement would not continue to remain in force. It also pleaded that the agreements are not covered by Entry 56 of List I of Seventh Schedule of the Constitution of India and hence Parliament has no power to make any law in respect thereof.
15. On the other hand, the State of Tamil Nadu seeks directions for raising of water level to 142 ft. and later, after strengthening, to its full level of 152 ft. On Section 108 of the States Reorganisation Act, the stand taken by the State of Tamil Nadu is that this Section, in pith and substance, deals with “continuance of agreements and arrangements relating to certain irrigation, power or multipurpose projects” and it figures in the Act under which the present State of Kerala was formed.
 16. According to the State of Tamil Nadu, the Act was not an enactment made in exercise of Parliament’s legislative power under Entry 56 of List I, but was an enactment covered by Articles 3 & 4 of the Constitution of India which provides for formation of new States and making of supplemental, incidental and consequential provisions. The pre-existing contractual obligation was reasserted and reaffirmed by the State of Kerala after its formation by signing fresh agreements in 1970. It is also urged that the Lists in Schedule Seven have no applicability as the point in issue is governed by Articles 3 & 4 of the Constitution of India.
 17. Another contention urged for the petitioner is that in the light of later development of law, the agreement of 1886 stands frustrated. It was submitted that the lease land was declared as reserve forest in the year 1899 by the erstwhile State of Travancore under the Travancore Forest Act. The notification remained in force under Sub-section (3) of Section 85 of the Kerala Forest Act, 1961. In 1934, Periyar Wildlife Sanctuary had been declared as a

‘sanctuary’ covering the grassy area, marshy areas, swamps of Mullaperiyar Dam which was expanded to 777 sq. kms. under the Wild Life Protection Act, 1972. Taking into account its importance as a well known habitat of tigers which is a highly endangered species, the sanctuary has been declared as “Periyar Tiger Reserve” in 1978 under the special management programme known as ‘Project Tiger’. It was said to be the oldest sanctuary in the State of Kerala which played a very important role in bio-diversity conservation in Western Ghats. International Union for Conservation of Nature and Natural Resources (IUCN) has declared it as a bio-diversity hot spot. According to the petitioner, the forest land immediately above the present maximum water level at 136 feet has special significance from bio-diversity point of view as it comprises different types of habitats like grassy areas, marshy areas, swamps and areas covered with trees. These are the prime habitats used by most of the wild animals especially larger herbivores, carnivores and amphibians. The birds like darter and cormorants nest on the tree stumps which stand out distributed

in the reservoir. Raising of water level would submerge these stumps and upset the nesting and reproduction of birds. The submergence of the forest above 136 ft. would adversely affect the bio-diversity therein and in the neighbouring forests both in terms of flora and fauna. Further, it is urged that raising of water level would also seriously affect the ecology and economy of the State of Kerala. Having regard to these developments, the State of Tamil Nadu is not entitled to increase the water level.

18. According to the State of Tamil Nadu, Periyar Project was completed in the year 1895. The Declaration of area as Reserved Forest was made in 1899. Moreover, the declaration has not adversely affected the interest of the petitioner or the State of Kerala. According to the State of Tamil Nadu, the provisions of Kerala Forest Act, 1961 and the Wild Life Protection Act, 1972 have no applicability to the case in hand. It is also urged that raising of water level in any case would not adversely affect the natural environment. Further, according to the State of Tamil Nadu, the submergence of land due to raising of water level from 136 feet to the designated FRL

152 feet would cover only 11.2 sq. kms. The percentage of area that gets submerged is only 1.44% of the total area which is very meager. It was also asserted that the raising of water level will not affect Wildlife habitat, on the contrary it would improve the Wildlife habitat. The restoration of water level will in no way affect the flora and fauna as alleged nor affect the nesting and reproduction of birds. Higher water level will facilitate better environment for flora and fauna to flourish better. It will lead to development of new flora and fauna and will also act as resting place for migratory birds and number of rare species of birds. The increase of water level in the reservoir will also increase tourist attraction and generate more funds for the State of Kerala and also result in increase of aquatic life and since the fishery rights are with the State of Kerala, it will enable the said State to generate more funds.

19. In the aforesaid background, the questions that arise for determination are these:
 1. Whether Section 108 of the States Reorganisation Act, 1956 is unconstitutional?
 2. Whether the jurisdiction of this Court is barred in view of Article

262 read with Section 11 of the Inter-State Water Disputes Act, 1956?

3. Whether Article 363 of the Constitution bars the jurisdiction of this Court?
 4. Whether disputes are liable to be referred to Arbitration?
 5. Whether the raising of water level of the reservoir from 136 ft. to 142 ft. would result in jeopardising the safety of the people and also degradation of environment?
1. RE: Validity of Section 108 of the States Reorganisation Act, 1956 (For short 'the Act').
 20. The contention urged is that the subject matter of water is covered by Entry 17 of the State List under the Seventh Schedule of the Constitution and, therefore, Section 108 which, inter alia, provides that any agreement or arrangement entered into between the Central Government and one or more existing States or between two or more existing States relating to distribution of benefits, such as the right to receive and utilise water or electric power, to be derived as a result of the execution of such project, which was subsisting immediately before the appointed day shall

continue in force, would be outside the legislative competence of the Parliament for the same does not fall in List I of Seventh Schedule, it falls in List-II. The Act was enacted to provide for the reorganisation of the States of India and for matters connected therewith as stipulated by Article 3 of the Constitution. The said Article, inter alia, provides that the Parliament may by law form a new State by separation of territory from any State or by uniting two or more States or parts of States or by uniting any territory to a part of any State. Article 4, inter alia, provides that any law referred to in Article 2 or 3 shall contain such provisions for the amendment of the First Schedule and the Fourth Schedule of the Constitution as may be necessary to give effect to the provisions of the law and may also contain such supplemental, incidental and consequential provisions as Parliament may deem necessary. The creation of new States by altering territories and boundaries of existing States is within the exclusive domain of Parliament. The law making power under Articles 3 and 4 is paramount and is not subjected to nor fettered by Article 246 and Lists II and III

of the Seventh Schedule. The Constitution confers supreme and exclusive power on Parliament under Articles 3 and 4 so that while creating new States by reorganisation, the Parliament may enact provisions for dividing land, water and other resources; distribute the assets and liabilities of predecessor States amongst the new States; make provisions for contracts and other legal rights and obligations. The constitutional validity of law made under Articles 3 and 4 cannot be questioned on ground of lack of legislative competence with reference to the lists of Seventh Schedule. The new State owes its very existence to the law made by the Parliament. It would be incongruous to say that the provision in an Act which gives birth to a State is ultra vires a legislative entry which the State may operate after it has come into existence. The power of the State to enact laws in List II of Seventh Schedule are subject to Parliamentary legislation under Articles 3 and 4. The State cannot claim to have legislative powers over such waters which are the subject of Inter-State agreement which is continued by a Parliamentary enactment, namely, the States

Organisation Act, enacted under Articles 3 and 4 of the Constitution of India. The effect of Section 108 is that the agreement between the predecessor States relating to irrigation and power generation etc. would continue. There is a statutory recognition of the contractual rights and liabilities of the new States which cannot be affected unilaterally by any of the party States either by legislation or executive action. The power of Parliament to make law under Articles 3 and 4 is plenary and traverse over all legislative subjects as are necessary for effectuating a proper reorganisation of the States. We are unable to accept the contention as to invalidity of Section 108 of the Act.

2. RE: Whether the jurisdiction of this Court is barred in view of Article 262 read with Section 11 of the Inter-State Water Disputes Act, 1956?
21. Article 262 provides that Parliament may by law provide for the adjudication of any dispute or complaint with respect to the use, distribution or control of the waters of, or in, any inter-State river or river valley. The jurisdiction of the Courts in respect of any dispute or complaint referred to in Article 262(1), can be barred by Parliament

by making law. The Inter-State Water Disputes Act, 1956 was enacted by Parliament in exercise of power under Article 262 of the Constitution. Section 11 of the said Act excludes the jurisdiction of Supreme Court in respect of a water dispute referred to the Tribunal. Section 2(c) of this Act defines 'water dispute'. It, inter alia, means a dispute as to the use, distribution or control of the waters of, or as to the interpretation or implementation of agreement of such waters.

22. In the present case, however, the dispute is not the one contemplated by Section 2(c) of the Act. Dispute between Tamil Nadu and Kerala is not a 'water dispute'. The right of Tamil Nadu to divert water from Periyar reservoir to Tamil Nadu for integrated purpose of irrigation or to use the water to generate power or for other uses is not in dispute. The dispute is also not about the lease granted to Tamil Nadu in the year 1886 or about supplementary agreements of 1970. It is also not in dispute that the dam always had and still stands at the height of 155 ft. and its design of full water level is 152 ft. There was also no dispute as to the water level till the year 1979. In 1979, the water level was

brought down to 136 ft. to facilitate State of Tamil Nadu to carryout certain strengthening measures suggested by Central Water Commission (CWC). The main issue now is about the safety of the dam on increase of the water level to 142 ft. For determining this issue, neither Article 262 of the Constitution of India nor the provisions of the Inter-State Water Dispute Act, 1956 have any applicability. There is no substance in the contention that Article 262 read with Section 11 of the Inter-State Water Disputes Act bars the jurisdiction of the court in regard to nature of disputes between the two States.

3. RE: Whether Article 363 of the Constitution bars the jurisdiction of this Court?
23. The jurisdiction of the courts in respect of dispute arising out of any provision of a treaty, agreement, covenant, engagement, sanad or other similar instrument entered into or executed before the commencement of the Constitution is barred in respect of matters and in the manner provided in Article 363 of the Constitution of India. The main reason for ouster of jurisdiction of courts as provided in Article 363 was to make certain class of agreements non-justiciable and to prevent the Indian Rulers from resiling from such agreements because that would have affected the integrity of India. The agreement of the present nature would not come within the purview of Article 363. This Article has no applicability to ordinary agreements such as lease agreements, agreements for use of land and water, construction works. These are wholly non-political in nature. The present dispute is not in respect of a right accruing or a liability or obligation arising under any provision of the Constitution {see *Madhav Rao Scindia v. Union of India*}
24. The contention also runs counter to Section 108 of the States Reorganisation Act, which expressly continues the agreement. There is, thus, no merit in this objection as well.
4. RE: Whether disputes are liable to be referred to Arbitration?
25. It is contended that the lease deed dated 29th October, 1886 provides that whenever any dispute or question arises between the Lessor and the Lessee touching upon the rights, duties or liabilities of either party, it shall be referred to two arbitrators and then to an umpire if

they differ. This clause was amended in supplementary agreement dated 29th May, 1970. Relying on the arbitration agreement, the contention urged on behalf of State of Kerala is that the parties should be directed to resort to alternate remedy of arbitration and discretionary relief in these petitions may not be granted to State of Tamil Nadu. There is no substance in this contention as well. The present dispute is not about the rights, duties and obligations or interpretation of any part of the agreement. As already noted, the controversy herein is whether the water level in the reservoir can presently be increased to 142 ft. having regard to the safety of the dam. The full water level was 152 ft. It was reduced to 136 ft. in 1979. The aspect of increase of water level is dependant upon the safety of the dam after strengthening steps have been taken. This aspect has been examined by experts.

5. Re: Whether the raising of water level of the reservoir from 136 ft. to 142 ft. would result in jeopardising the safety of the people and also degradation of environment?
26. Opposing the increase of water level, the contention urged is that it would

result in a larger area coming in submergence which is not permissible without complying with the mandatory provisions of the Forest (Conservation) Act, 1980 and the Wild Life (Protection) Act, 1972.

27. Reliance has been placed on Section 26A of the Wild Life (Protection) Act which stipulates that the boundaries of a sanctuary shall not be altered except on a recommendation of the National Board constituted under Section 5-A of the Act. The total area of the sanctuary is about 777 square kilometers. The leased area of about 8,000 acres is a part of the total area. By raising the water level, the boundaries of the sanctuary do not get altered. The total area of the sanctuary remains 777 square kilometers. Further, Section 2(17) of the Act, which defines land includes canals, creeks and other water channels, reservoirs, rivers, streams and lakes, whether artificial or natural, marshes and wetlands and also includes boulders and rocks. It cannot be said that forest or wildlife would be affected by carrying out strengthening works and increase of the water level. On the facts and circumstances of the case, the strengthening work of existing dam in the forest cannot be described as

a non-forestry activity so as to attract Section 2 of the Forest (Conservation) Act, 1980, requiring prior approval of Union of India.

28. As already noticed, it was only in 1979 that the water level was brought down to 136 ft from 152 ft. The increase of water level will not affect the flora and fauna. In fact, the reports placed on record show that there will be improvement in the environment. It is on record that the fauna, particularly, elephant herds and the tigers will be happier when the water level slowly rises to touch the forest line. In nature, all birds and animals love water spread and exhibit their exuberant pleasure with heavy rains filling the reservoir resulting in lot of greenery and ecological environment around. The Expert Committee has reported that it will be beneficial for the Wildlife in the surrounding area as it will increase the carrying capacity for wildlife like elephants, ungulates and in turn tigers. The apprehension regarding adverse impact on environment and ecology have been found by the experts to be unfounded. We are also unable to accept the contention that the impact on environments has not been examined. Report dated 28th

January, 2003 states that there is no adverse impact on the environment. Similarly, the report dated 21st April, 2003 is also to the similar effect. It, inter alia, states that:

The most productive habitats in terms of forage availability to ungulates and elephants are these vayals. This habitat is of even greater significance to wildlife since the green flush of protein rich grasses appears at a time when nutritive quality of forest forage is lowest. This is so since water is likely to be released from the Dam during the dry months for irrigation. Thus, this nutrient rich biomass is critical for maintaining condition of herbivores and their populations during the pinch period.

If the lowest water level even after increasing the water capacity of the dam is maintained at the current level, then the increased high water table will make more area available as Vayals, effectively adding some more area to the existing Vayals, thereby increasing the carrying capacity of the reserve for ungulates, elephants and in turn of tigers.

In this view, we find no substance in the contention that there will be adverse effect on environment.

29. Regarding the issue as to the safety of the dam on water level being raised to 142 ft. from the present level of 136 ft, the various reports have examined the safety angle in depth including the viewpoint of earthquake resistance. The apprehensions have been found to be baseless. In fact, the reports suggest an obstructionist attitude on the part of State of Kerala. The Expert Committee was comprised of independent officers. Seismic forces as per the provisions were taken into account and structural designs made accordingly while carrying out strengthening measures. The final report of the Committee, set up by Ministry of Water Resources, Government of India to study the water safety aspect of the dam and raising the water level has examined the matter in detail. The Chairman of the Committee was a Member (D&R) of Central Water Commission, two Chief Engineers of Central Water Commission, Director, dam safety, Government of Madhya Pradesh and retired Engineer-in-Chief, UP besides two representatives of Governments of Tamil Nadu and Kerala, were members of the Committee. All appended their signatures except the representative of the Kerala Government. The summary of results

of stability analysis of Mullaperiyar Baby Dam contains note which shows that the permissible tensile strength was masonry as per the specifications mentioned therein based on test conducted by CSMRS, Delhi on the time and agreed by all Committee members including the Kerala representative in the meeting of the Committee held on 9-10th February, 2001. It also shows the various strengthening measures suggested by CWC having been completed by Tamil Nadu PWD on the dam including providing of RCC backing to the dam. The report also suggests that the parapet wall of the baby dam and main dam have been raised to 160 ft. (48.77 mt.) except for a 20 mt. stretch on the main dam due to denial of permission by the Government of Kerala. Some other works as stated therein were not allowed to be carried on by the State of Kerala. The report of CWC after inspection of main dam, the galleries, baby dam, earthen bund and spillway, concludes that the dam is safe and no excessive seepage is seen and that Mullaperiyar dam has been recently strengthened. There are no visible cracks that have occurred in the body of the dam and seepage measurements indicate no cracks in the upstream side of the dam. Our

attention has also been drawn to various documents and drawings including cross-sections of the Periyar dam to demonstrate the strengthening measures.

Further, it is pertinent to note that the dam immediately in line after Mullaperiyar dam is Idukki dam. It is the case of State of Kerala that despite the 'copious rain', the Idukki reservoir is not filled to its capacity, while the capacity of reservoir is 70.500 TMC, it was filled only to the extent of 57.365 TMC. This also shows that assuming the worst happens, more than 11 TMC water would be taken by Idukki dam. The Deputy Director, Dam Safety, Monitoring Directorate, Central Water Commission, Ministry of Water Resources in affidavit of April 2004 has, inter alia, stated that during the recent earthquake mentioned by Kerala Government in its affidavit, no damage to the dam was reported by CWC officers who inspected the dam. The experts having reported about the safety of the dam and the Kerala Government having adopted an obstructionist approach, cannot now be permitted to take shelter under the plea that these are disputed questions of fact. There is no report to suggest that the safety of the dam would be jeopardized if the water level is raised

for the present to 142 ft. The report is to the contrary.

30. Regarding raising the water level to 152 ft., the stage has still not reached. At present, that is not the prayer of the State of Tamil Nadu. In this regard, at this stage, the only prayer of the State of Tamil Nadu is that State of Kerala be directed not to obstruct it in carrying out strengthening measures, as suggested by CWC. We see no reason for the State of Kerala to cause any obstruction.
31. Under the aforesaid circumstances, we permit State of Tamil Nadu to carry out further strengthening measures as suggested by CWC and hope that State of Kerala would cooperate in the matter. The State of Kerala and its officers are restrained from causing any obstruction. After the strengthening work is complete to the satisfaction of the CWC, independent experts would examine the safety angle before the water level is permitted to be raised to 152 ft.
32. The writ petition and the connected matters are disposed of by permitting the water level of the Mullaperiyar dam being raised to 142 ft. and by permitting the further strengthening of the dam as aforesaid.

The Kerala Irrigation and Water Conservation (Amendment) Act, 2006

An Act to amend the Kerala Irrigation and Water Conservation Act, 2003.

Preamble.-WHEREAS, it is expedient to amend the Kerala Irrigation and Water Conservation Act, 2003 for the purposes hereinafter appearing;

BE it enacted in the Fifty-seventh year of the Republic of India as follows:

1. *Short title and commencement*

- (1) This Act may be called the Kerala Irrigation and Water Conservation (Amendment) Act, 2006.
- (2) It shall come into force at once.

2. *Amendment of section 2*

In the Kerala Irrigation and Water Conservation Act, 2003(31 of 2003) (hereinafter referred to as the principal Act) in section 2,—

- (1) after clause (j) the following clauses shall be inserted namely:—
 - (ja) ‘*custodian*’ means any State Government, or any local authority, body Corporate, associations of persons or an individual, who under any law, contract, treaty, agreement, order, judgment or decree has been

granted the right to establish, or has established or is running or otherwise operating any dam within the State of Kerala;

(jb) ‘*dam*’ means any artificial barrier including appurtenant work constructed across a river or tributaries thereof with a view to impound or divert water for irrigation, drinking water supply or for any other purpose and unless repugnant to the context, shall include the water spread area;”;

- (2) after clause (al) the following clause shall be inserted namely:— “(ala) ‘*Scheduled dam*’ means any dam included in the SECOND SCHEDULE or any dam which may be notified by the Government from time to time as a Scheduled dam;”.

3. *Amendment of section 57*

In section 57 of the principal Act,—

- (1) in sub-section (1), for the words “surveillance, inspection” the words “ensuring the safety and security” shall be substituted;

- (2) in sub section (2) the explanation shall be deleted;
- (3) after sub-section (2), the following sub-section shall be inserted, namely:-
“(3) The provisions contained in this Chapter shall be in addition to and not in derogation of any other provisions contained in any other law for the time being in force and none of the provisions in this Chapter shall be construed, treated or read as infructuous or unenforceable on account of any provisions under any law for the time being in force”.

4. *Amendment of section 59*

In section 59 of the principal Act,—

- (1) the existing section shall be numbered as sub-section (1) of that section and in sub section (1) as to re-numbered the words “including the quorum there at” shall be deleted;
 - (2) after sub-section (1) the following sub-section shall be added, namely:-
“(2), The quorum at the meeting of the Authority shall not be less than fifty per cent of the total number of members of the Authority.”.
3. *Substitution of section 62.*- For section 62 of the principal Act, the

following section shall be substituted, namely:-

“62. *Functions of the Authority*”.- (1) Notwithstanding anything contained in any other law, judgment, decree or order of any court or in any treaty, agreement, contract, instrument or other document, the Authority shall exercise the following functions, namely:-

- (a) to evaluate the safety and security of all dams in the State considering among other factors, the age of the structures, geological and seismic factors, degeneration or degradation caused over time or otherwise;
- (b) to conduct periodical inspections of all the dams;
- (c) to advise the Government on security measures to be adopted in respect of any dam considering its vulnerability to terrorism, sabotage and the like;
- (d) to direct the custodians to carry out any alteration, improvement, replacement or strengthening measures to any dam found to pose a threat to human life or property;
- (e) to direct the custodian to suspend the functioning of any dam, to decommission any dam

- or restrict the functioning of any dam if public safety or threat to human life or property, so requires;
- (f) to advise the Government, custodian, or other agencies about policies and procedures to be followed in site investigation, design, construction, operation and maintenance of dams;
 - (g) to conduct studies, inspect and advise the custodian or any other agency on the advisability of raising or lowering of the Maximum Water Level or Full Reservoir Level of any dam, not being a scheduled dam, taking into account the safety of the dam concerned;
 - (h) to conduct studies, inspect and advise the custodian or any agency on the sustainability or suitability of any dam not being a scheduled dam, to hold water in its reservoir, to get expert opinion of International repute, and provide advise by dam-brake analysis and independent study and to direct strengthening measures or require the commissioning of a new dam within a timeframe to be prescribed to replace the existing dam;
 - (i) to carry out such other functions not inconsistent with the provisions of this Chapter and necessary or expedient to carry out the provisions of this Chapter; and
 - (j) such other functions as may be assigned to the Authority by the Government by notification in the Official Gazette.
- (2) As soon as may be or within the time specified by the Authority after the receipt of the advice or recommendation under sub-section (1) the custodian, or any other agency to whom it is addressed by the Authority, shall act thereon and take action in accordance with such advice or recommendation.
 - (3) Where a direction is issued by the Authority under sub-section (1) the custodian or any other agency to whom it is directed shall take immediate measures within the time frame stipulated by the Authority or do or refrain from doing such things within such time frame as may be stipulated, to comply with the directions of the Authority.
 - (4) Where the direction is issued to any agency other than the Government, the Government shall ensure that such other agency carries out the directions of the Authority within the

time frame stipulated and all officers of the State and all legal remedies available to the State shall be utilised to ensure that the directions of the Authority are complied with.

- (5) Where any order or direction issued under sub-sections (1) or (4) is not complied with within the time frame specified therein, the Authority, may direct the Government to take possession and control of the dam for such period and take such measures or do such things or refrain from doing such things as may be necessary to give effect to the order or direction of the Authority and the cost incurred by the Government on that behalf shall be recovered from the custodian or any other agency to whom the order or direction was issued, as if it were arrears of revenue due on land, to the State.”.

6. *Insertion of new sections 62 A and 62B*

After section 62, the following sections shall be inserted, namely:-
“62 A. *Scheduled dams.*-

- (1) The details of the dams which are endangered on account of their age, degeneration, degradation, structural or other impediments are as specified in the SECOND SCHEDULE.

- (2) Notwithstanding anything contained in any other law or in any judgment, decree, order or direction of any court, or any treaty, contract, agreement, instrument or document, no Government, custodian or any other agency shall increase, augment, add to or expand the Full Reservoir Level Fixed or in any other way do or omit to do any act with a view to increase the water level fixed and set out in THE SECOND SCHEDULE. Such level shall not be altered except in accordance with the provisions of this Act in respect of any Scheduled dam.

- (3) Notwithstanding anything contained in any other law, or in any judgment, decree, order, direction of any court or any treaty, contract, agreement, instrument or document, any Government, custodian or any other agency intending to, or having secured any right under any treaty, contract, agreement, instrument or document or by any other means to increase, augment, add to or expand, the storage capacity or increase the Full Reservoir Level Fixed of any Scheduled dam, shall not do any act or work for such purpose without seeking prior consent in writing of the Authority and without obtaining an order permitting such work by the Authority.

(4) Any act or work or preparation by any custodian, or any other agency is in progress as on the date of commencement of the Kerala the Irrigation and Water Conservation (Amendment) Act, 2006 shall immediately be stopped and the Government, custodian, or any other agency shall submit an application to obtain prior consent of the Authority for such intended increase, augmentation, addition or expansion of the storage capacity or for increase of Full Reservoir level Fixed of the Scheduled dam and shall recommence the act or work or preparation only after, prior consent in writing of the Authority is obtained.

62 B. Powers of the Authority

(1) The Authority while dealing with applications for consent in writing for increasing, augmenting, adding to or expanding the storage capacity or the water spread area or for increasing of Maximum Water Level or Full Reservoir Level Fixed of Scheduled dams, shall have the powers of a Civil Court, trying a suit under the Code of Civil Procedure, 1908 (Central Act 5 of 1908), in respect of the following matters, namely:-

(a) summoning and enforcing the

attendance of any person and examining him on oath;

- (b) requiring the discovery and production of any document;
- (c) receiving evidence on affidavit;
- (d) requisitioning any public record, or copy thereof from any Government, local authority, or from any other office; and
- (e) issuing commissions for examination of witnesses or documents.

(2) The proceedings before the Authority shall be deemed to be a judicial proceeding within the meaning of section 193 and 228 of the Indian Penal Code, 1860 (Central Act 45 of 1860).”.

7. *Insertion of new section 68 A*

In the principal Act, after section 68 the following section shall be inserted, namely:-

“68A. *Protection of action and immunities from challenge etc*”.

(1) No suit, prosecution or other legal proceedings shall lie against the Authority or against any officer or employee in respect of anything which is done in good faith or intended to be done in the discharge of official duties under this Act.

(2) No civil court shall have jurisdiction

to settle, decide or deal with any question of fact or to determine any matter which is by or under this Act required to be settled, decided or dealt with or to be determined by the Authority under this Act.”.

8. *Insertion of Second Schedule*

In the principal Act, after the Schedule, the following Schedule shall be added, namely:

Second Schedule

Second Schedule

Sl. No.	Name of Dam	Year of completion	Full Reservoir Level Fixed
1	Mullaperiyar	1895	41.45 m (136 ft.) from the deepest point of the level of Periyar river at the site of the main dam
2	Kundala	1947	1758.70 m MSL
3	Malampuzha	1955	115.06 m MSL
4	Mattupetty	1956	1599.59 m MSL
5	Walayar.	1956	203.00 m MSL
6	Vazhani	1957	62.48 m MSL
7	Sengulam	1957	847.64 m MSL
8	Peringalkuthu	1957	423.98 m MSL
9	Peechi	1958	79.25 m MSL
10	Neyyar	1959	84.75 m MSL
11	Meenkara	1960	156.36 m MSL
12	Kallarkutty	1961	456.59 m MSL
13	Ponmudy	1963	707.75 m MSL
14	Sholayar Main	1965	811.69 m MSL
15	Anayirankal	1965	1207.01 m MSL
16	Thunakadavu	1965	539.50 m MSL
17	Chulliyar	1966	154.11 m MSL
18	Parambikulam	1966	556.26 m MSL
19	Kakki	1966	981.46 m MSL
20	Mangulam	1966	77.87 m MSL
21	Aruvikkara	1933	46.63 m MSL
22	Peruvaripallam	1963	539.50 m MSL

