

## **Chapter 3**

### **Interstate Aspects**

#### **3.0 General**

The Cauvery (Kattalai) - Vaigai - Gundar link project envisages diversion of 2252 Mcum of water from existing Kattalai barrage at a location downstream of bed regulator across Cauvery river through link canal. A quantity of 2252 Mcum is proposed to be made available for Cauvery-Vaigai - Gundar link from surplus basins of Mahanadi and Godavari including augmentation of water by integrating Himalayan component with peninsular component through transfer by series of link canal after arriving consensus among the riparian states of Peninsular and Himalayan river basins. Hence, the inter-state aspects of this link project are to be dealt in totality considering the views of the states concerned with Phase I & Phase II of the inter basin water transfer of peninsular component as the Phase I planned to utilize surplus waters of Godavari basin and the Phase II will be utilizing the surplus waters of Himalayan rivers and river Mahanadi.

#### **3.1 States traversed by the rivers**

##### **3.1.1 The Cauvery basin**

The river Cauvery is one of the major rivers of the Peninsular India. It rises in the Kodagu district of Karnataka at an elevation of about 1340 m and falls in the Bay of Bengal in Tamil Nadu after travelling a distance of about 800 km in the south-east direction. The Cauvery basin extends over an area of 81,155 km<sup>2</sup> in the states of Kerala, Karnataka and Tamil Nadu. In size, it ranks fourth, next to Godavari, Mahanadi and Krishna in the peninsular India. The basin lies between longitudes 75<sup>0</sup> 30' E and 79<sup>0</sup> 45' E, latitudes 10<sup>0</sup> 05' N and 13<sup>0</sup> 30' N. It is bounded in the west by the western ghats, in the east and south by the Eastern Ghats and in the north by the ridges separating it from the Krishna and the Pennar basins. The basin is near rectangular in shape.

The Cauvery basin can broadly be divided into three main physiographic regions, viz., (i) the Western Ghats (ii) the plateau of Karnataka and (iii) the delta.

The important tributaries of the Cauvery are Harangi, Hemavathi, Shimsha, Arkavathi, Lakshmanathirtha, Kabini and Suvarnavathi in Karnataka and Bhavani, Noyil and Amaravathi in Tamil Nadu.

The Cauvery basin has been divided into 16 sub-basins for the purpose of the NWDA studies. These are (i) Upper Cauvery (ii) Kabini (iii) Suvarnavathy (iv) Shimsha (v) Arkavathi (vi) Middle Cauvery (vii) Palar (viii) Chinnar (ix) Bhavani (x) Noyil (xi) Amaravathi (xii) Thirumanimuthar (xiii) Ponnaniar (xiv) Upper Coleroon (xv) Lower Coleroon and (xvi) Cauvery Delta.

### **3.1.2 Basin area of the streams between Cauvery and Vaigai**

The basin area comprises the catchment of 7 small to medium streams viz., Agniyaru, Ambuliyaru, Vellar, Koluvanaru, Pambar, Manimutthar and Kattakaraiaru draining the area lying between Cauvery and Vaigai river basins each draining independently with their outfall in the Bay of Bengal. Vellar and Manimutthar rivers with their tributaries are the important streams in this basin area. The area lies between latitudes  $9^{\circ}36'$  and  $10^{\circ}44'$  North and the longitudes  $78^{\circ}07'$  and  $79^{\circ}27'$  East. It is bounded on the north and west by the Cauvery basin, on the south by the Vaigai basin and on the east by the Bay of Bengal. The river Vellar rises in the Velamalai near Marugngapuri in Tiruchirappalli district and the river Manimutthar rises in the Perumalai (839 m), Alagarmalai (830 m) and Karandamalai (912 m), in the Madurai district. The lengths of these two rivers from the origin to the outfall are about 136 km and 150 km respectively. The entire catchment area of this basin lies in Tamil Nadu only.

### **3.1.3 The Vaigai basin**

The Vaigai basin comprises of (i) Upper Vaigai (ii) Suruliayr (iii) Marudhanadhi (iv) Manjalar and (v) Lower Vaigai, but none of the first four is sufficient in respect of the catchment area for individual consideration. So, the Vaigai basin including the above four tributaries have been considered as a single basin for the purpose of study. The basin lies between north latitudes  $9^{\circ}18'$  and  $10^{\circ}19'$  and east longitudes  $77^{\circ}10'$  and  $79^{\circ}02'4''$

The Vaigai rises in the western slopes of the Varushanad hills near Kottaimalai in Periyakulam taluk of Theni district of Tamil Nadu State and flows in a northerly and northeasterly direction upto the confluence with Varahanadi and flows through the Madurai and Ramanathapuram districts of Tamil Nadu State and falls into the Bay of Bengal close to the Palk Strait. During its course, the river travels over a distance of about 258 km. Suruliarnadi, Varahanadi, Manjalar and Marudhanadi are its principal tributaries. The entire catchment area of this basin lies in Tamil Nadu only.

### 3.1.4 Basin area of the streams between Vaigai and Vaippar

This basin area comprises the catchments of all streams between Vaigai and Vaippar draining independently and falling into the Bay of Bengal. The Gundar river is one of the important streams in this basin. TerkuAr, KanalOdai, GridhamalNadhi and ParalaiAr, are the main tributaries of the Gundar river. Two more rivers viz., Uttarakosamangai Aru and Vembar also drain this area. The area lies between latitudes 9<sup>0</sup>01' N and 10<sup>0</sup>04' N and longitudes 77<sup>0</sup>36' E and 79<sup>0</sup>11' E. The Gundar river rises from the foot of the Andipatti hills at an elevation of about 260 m in the west and the other streams originate from the plains. They all flow in a south easterly direction and drain into the Bay of Bengal. The entire catchment area of this basins lies in Tamil Nadu.

## 3.2 Distribution of catchment in state and yields from the catchment of the state concerned

The state-wise breakup of the catchment area of river basins of Cauvery (Kattalai) - Vaigai - Gundar link project is given in **Table 3.1**.

**Table 3.1**  
**State-wise break up of catchment area of the basins**

Sl.No.	Basin/State	Catchment area in Km <sup>2</sup>	Percent to total area %
1	<b>Cauvery</b>		
	<b>a) Entire basin</b>		
	Karnataka	34273	42.23
	Tamil Nadu	43867	54.05

	Kerala	2866	3.53
	Puducherry	149	0.19
	<b>Total</b>	<b>81155</b>	<b>100.00</b>
	<b>b) Upto Kattalai Barrage</b>		
	Karnataka	34273	53.81
	Tamil Nadu	26555	41.69
	Kerala	2866	4.50
	Puducherry	-	-
	<b>Total</b>	<b>63694</b>	<b>100.00</b>
2	<b>Basin area covered by streams between Cauvery &amp; Vaigai</b>		
	Tamil Nadu	10040	100.00
3	<b>Vaigai Basin</b>		
	Tamil Nadu	7741	100.00
4	<b>Basin area covered by streams between Vaigai and Vaippar</b>		
	Tamil Nadu	5409	100.00

### 3.2.1 Water availability

The state-wise distribution of 75% dependable annual yields in the basins of catchment area are given in **Table 3.2**.

**Table 3.2**

**Basin wise/state-wise gross yields in the catchment areas of the basins**

Sl.No.	State	Yield (Mcum)			
		Cauvery upto Kattalai	Basin area of the Streams between Cauvery and Vaigai	Vaigai	Basin area of the Streams between Vaigai & Vaippar
1	Karnataka	7608	-	-	-
2	Tamil Nadu	5894	808	439	514
3	Kerala	636	-	-	-
4	Puducherry	-	-	-	-
	<b>Total</b>	<b>14138</b>	<b>808</b>	<b>439</b>	<b>514</b>

### **3.3 Effect of the project on the inter-state Agreement on sharing of waters, sharing the benefits and costs, acceptance of submergence in the upstream state etc. if any**

The Cauvery (Kattalai) - Vaigai - Gundar link project is a part of the major peninsular link system connecting Mahanadi - Godavari - Krishna - Pennar - Cauvery - Vaigai - Gundar rivers under the Peninsular rivers development component of the National Perspective Plan (NPP), which is intended for the transfer of surplus Mahanadi and Godavari waters for use in the deficit river basins of Krishna, Pennar, Cauvery, Vaigai and other smaller basins. It is also proposed to integrate Himalayan rivers development component with Peninsular rivers development component of NPP in order to enhance water availability of water for transfer in south and further south as water surplus in Godavari basin reduces compared to earlier assessment at ultimate stage of development due to increased demand by riparian states. Thus, the Cauvery (Kattalai) - Vaigai - Gundar link connecting the Cauvery and Gundar rivers merely serves as a conduit for the transfer of surplus Mahanadi and Godavari waters and water from rivers of Himalayan Component.

In view of the above, a consensus has to be arrived at among all the riparian states of the Peninsular and Himalayan river basins, for the implementation of the peninsular rivers link system including the Cauvery (Kattalai) - Vaigai - Gundar link. The existing inter state agreement for various river basins will also have to be reviewed and modified accordingly.

The preparation of detailed project report (DPR) of the link project has been taken up during current financial year 2019-20 as per mandate of NWDA for preparation of DPRs of the link proposals pertaining to Peninsular and Himalayan rivers development components of the NPP in order to arrive consensus among riparian states.

The proposal may have no impact on the water use in recipient state Tamil Nadu. Overall effect on interstate agreement on sharing of waters, sharing of benefits and costs which can be assessed only on completion of DPR all Peninsular & Himalayan Component link canal Project and arriving

consensus among riparian states. Also, no new headworks/storage structures are proposed in the project, it will not have any new submergence area.

### **3.3.1 Effect on project and of the project on the inter state adjudication, if any**

No interstate adjudications exist as of now on this link project in sharing of waters of Cauvery rivers, basin area covered by Cauvery and Vaigai, Vaigai river and basin area covered by Vaigai and Vaippar as no water is proposed to be transferred from these basins being deficit basins.

### **3.3.2 Effect of the project on the interstate aspects of territory, property etc. coming under submergence, project affected people, rehabilitation, compensation etc.**

As no headworks / storages/ barrage are proposed to be constructed for this link canal and only existing projects are being proposed to be utilized, therefore no new areas coming under submergence. However, for project affected people due to canal alignment, suitable rehabilitation compensation etc., will be provided, the details can be accessed from **Chapter 10: “Environmental Impact Assessment and Environmental Management Plan”** and **Chapter 11: “Socio – Economic Aspects”**.

### **3.3.3 Effect on project and of the project on the existing and sanctioned project**

There would be likely no effect on existing project/sanctioned project in the enroute area of link canal is expected on availability of additional water from the link as it may stabilized existing irrigation and to irrigate new area.

### **3.3.4 Any other aspect of the project involving interstate problems**

Since water is proposed to be transferred from surplus basins viz. Mahanadi & Godavari and basins from Himalayan Component to cater the needs of deficit basins of Southern Peninsular, the problems in distribution of surplus water among different state may arise. This can be resolved by arriving consensus among the riparian states as per established norms and laws.

### 3.4 Interstate agreement/ legal instruments

#### 3.4.1 Agreement for use of Periyar waters in Vaigai basin

A lease agreement was entered into on 29<sup>th</sup> October, 1886 between the erstwhile Maharaja of Travancore state as the lesser and the British Secretary of State for India as lessee for a period of 999 years commencing from 01.01.1886 permitting the lessee to undertake the construction of Periyar dam Project in the Travancore state (now in Kerala) in an area of 8000 acre (3239 ha) for the diversion of the Periyar river waters to then Madras Presidency area.

Accordingly, the Madras Presidency had constructed the Periyar dam project during the period 1887 to 1897 with an effective storage capacity of 299 Mcum and is diverting the waters impounded in the Periyar reservoir through 1.6 km long tunnel leading to the Vaigai river basin through Suruliyar river in the Vaigai basin.

A supplementary agreement entered into between the Govts. of Kerala and Tamil Nadu on 29.5.1970 does not alter the scope of the original agreement of 1886, as far as the rights of Tamil Nadu state for the diversion of Periyar river waters from the Periyar reservoir are concerned.

#### 3.4.2 Cauvery Water Disputes Tribunal (CWDT) Award

An agreement between the then Mysore Government (now Karnataka) and the then Madras Government (now Tamil Nadu) was made in 1892 regarding sharing of Cauvery water. This agreement was reviewed in 1924 and was in force upto 1974. In 1991, the Cauvery Water Disputes Tribunal (CWDT) was formed and an interim award was given. Later on, the final award was delivered during February, 2013 by CWDT. As per the final award, 205 TMC water is to be ensured at Mettur reservoir in Tamil Nadu by the Government of Karnataka by releasing water from its reservoirs as per the monthly schedule given below in **Table 3.3**.

**Table 3.3****Monthly flows to be ensured at Mettur reservoir as per final award of CWDT**

Sl.No.	Month	Allocation in	
		Mcum	TMC
1	June	287.70	10.16
2	July	1210.83	42.76
3	August	1549.50	54.72
4	September	831.38	29.36
5	October	854.32	30.17
6	November	454.48	16.05
7	December	293.64	10.37
8	January	71.07	2.51
9	February	61.45	2.17
10	March	67.96	2.40
11	April	65.70	2.32
12	May	56.92	2.01
	<b>Total</b>	<b>5804.95</b>	<b>205.00</b>

Source: Final Award of Cauvery Water Disputes Tribunal

**3.4.3 Supreme court verdict on Cauvery river**

The Supreme Court on 16<sup>th</sup> February 2018 delivered its verdict in the decades-old Cauvery Water Dispute, allocating more water to the state of Karnataka. The top court ordered the Karnataka government to release 177.25 TMC of Cauvery water to Tamil Nadu at the inter-state border measurable at Biligundlu G&D site. The judgment clarified that Karnataka will now have an enhanced share of 14.75 TMC water per year while Tamil Nadu will get 404.25 TMC, which will be 14.75 TMC less than what was allotted by the tribunal in 2007. Earlier, in accordance with the 2007 award of the Cauvery Water Dispute Tribunal (CWDT), Karnataka had a share of 270 TMC of Cauvery water. This will now increase to 284.75 TMC. Final allocation of 740 TMC of Cauvery water is as under:

- (i) Karnataka : 284.75(270+ 14.75) TMC
- (ii) Tamil Nadu : 404.25 (419 – 14.75) TMC
- (iii) Kerala : 30 TMC



(iv)	UT of Puducherry	: 7 TMC
(v)	Environmental Protection	:10 TMC
(vi)	Inevitable escapes into sea	: 4 TMC.
	Total	:740 TMC

### **3.5 Impact of water diversion on interstate water sharing Agreement**

The river Cauvery is an interstate river by nature and Cauvery Water Disputes Tribunal has already awarded the water among the concerned states namely Karnataka, Tamil Nadu, Kerala and Puducherry. The present proposal envisages transfer of surplus waters from Mahanadi, Godavari and water from Himalayan component. No waters of Cauvery basin are proposed to be transferred through the C-V-G link project. The Kattalai barrage from where the C-V-G link canal offtakes acts as a diversion point only to transfer the water brought from the upper links. Hence, it is unlikely that there would be any impact on the existing interstate water sharing agreements among the riparian states of Cauvery river basin on account of the diverted quantity meant for C-V-G link.