

EXECUTIVE SUMMARY

Long distance inter-basin transfer of water from surplus basins to water deficit basins has been mooted in our country in order to reduce the imbalance in the water availability between various regions. A National Perspective Plan (NPP) was formulated in the year 1980 by the Union Ministry of Irrigation (now Ministry of Water Resources) and the Central Water Commission identifying a number of inter-basin water transfer links in respect of both Peninsular rivers and Himalayan rivers of the country. The Peninsular Rivers Development and the Himalayan Rivers Development Components put together were expected to create an additional irrigation potential of 35 million hectares besides hydropower potential and other benefits.

The Peninsular Rivers Development Component of the National Perspective Plan (NPP) for Water Resources Development, formulated in the year 1980 by the erstwhile Union Ministry of Irrigation (now Ministry of Water Resources) and Central Water Commission, envisaged diversion of surplus flows of the Mahanadi basin and the Godavari basin to the water short Krishna, Pennar, Cauvery, Vaigai and Gundar basins in the South. The National Water Development Agency (NWDA) has assessed the water balance position in various peninsular river basins keeping in view the ultimate development scenario in these basins. Based on these studies, NWDA has formulated proposals for diversion of 12165 Mm³ of water annually from Mahanadi through Mahanadi-Godavari link canal. From Godavari, a quantity of 26122 Mm³ of water (including waters brought from Mahanadi) is envisaged to be diverted to Krishna River through three links viz. Inchampalli-Nagarjunasagar, Inchampalli-Pulichintala and Polavaram-Vijayawada. Out of these waters brought from Godavari, a quantity of 14080 Mm³ is envisaged to be diverted from Krishna to Pennar through three link canals viz. Almatti-Pennar, Srisailem-Pennar and Nagarjunasagar-Somasila. From Pennar, a quantity of 8565 Mm³ of water is proposed to be diverted towards Cauvery river through Somasila - Grand Anicut link and further down south Cauvery - Vaigai - Gundar link canal to meet the demands of area lying below Cauvery river upto Gundar basin in Tamil Nadu State.

This Report deals with the Feasibility study of Pennar (Somasila) – Palar-Cauvery (Grand Anicut) link project, which is an integral part of the Mahanadi - Godavari - Krishna – Pennar - Cauvery - Vaigai - Gundar peninsular river links system formulated for inter-basin transfer of water

from surplus river basins to deficit basins under Peninsular Component of NPP.

The objective of preparation of this feasibility report is to facilitate firming up of the proposals and for discussions among the concerned States to arrive at broad agreements on the quantum of diversions, sharing of costs etc.

The Pennar (Somasila)-Palar-Cauvery (Grand Anicut) link project envisages diversion of 8565 Mm³ of water, from the existing Somasila dam across Pennar River in Nellore district of Andhra Pradesh State.

The total length of Pennar (Somasila)-Palar-Cauvery (Grand Anicut) link canal is 529.190 km. The canal will run parallel to the existing Kandaleru Flood Flow Canal upto RD 10 km, Kandaleru – Poondi canal upto RD 80 km and then traverse a distance of 439.190 km before joining at Grand Anicut across Cauvery River in Thanjavur District of Tamil Nadu State.

The link canal traverses through Nellore, Chittoor districts of Andhra Pradesh; Tiruvallur, Kancheepuram, Vellore, Tiruvannamalai, Villupuram, Cuddalore, Perambalur and Tiruchchirappalli districts of Tamil Nadu, passing through the river basins of Pennar; Streams between Pennar and Palar, Palar, Streams between Palar and Cauvery and Cauvery. The existing Somasila dam is proposed to be utilized as off take of canal for the intended diversion.

The link canal will provide irrigation to an area of 491200 ha in the Nellore and Chittoor districts of Andhra Pradesh; Tiruvallur, Kancheepuram, Vellore, Tiruvannamalai, Villupuram and Cuddalore districts of Tamil Nadu and Pondicherry (UT). For identifying the culturable area and ascertaining the irrigability of the land, the soil survey and land use reports prepared by Soil Survey and Landuse Organisation, Department of Agriculture, Government of Tamil Nadu are considered. The intensity of irrigation is proposed to be 100%. A cropping pattern was devised by NWDA appropriate to the command area. The irrigation water requirement is estimated to be 3048 Mm³.

Apart from irrigation, it is also proposed to provide water for future domestic and industrial water requirements of Chennai City, domestic requirements of the command area and towns located 20 km right side of the link canal with in a lift of less than 100 m. Additional domestic and industrial requirements, projected to 2050 AD, are estimated to be 605

Mm³ and 500 Mm³ respectively. Transmission loss in the link canal is estimated to be 557 Mm³.

The link canal is designed as a lined canal with trapezoidal shape with rounded corners. The maximum carrying capacity of the canal is 603.33 cumec with corresponding cross section of 72.40 m of bed width and 6 m of full supply depth in the head reaches. The canal passes mostly through dry lands.

The Pennar (Somasila) – Palar – Cauvery (Grand Anicut) Link Project does not involve construction of any new storage reservoirs. Also looking at the region through which the 529.190 km long link canal is traversing, the canal is not expected to lead to any adverse Environmental Impact. Hence detailed environmental impact study has not been carried out for the purpose at the Feasibility Report Stage.

The link canal alignment does not cross any built up area and hence no R&R of displaced population is anticipated.

The link project on implementation would create the irrigation facilities to the farmers and tremendous potential for employment for the people of the area hence it would improve the economic conditions of the people of the region.

Direct benefits per annum from the link project due to irrigation, domestic and industrial water supplies are estimated to be Rs. 1642 crore. The capital cost of the link canal is estimated to be Rs. 6769 crore at 2003-04 price level. The apportioned annual cost of the project is Rs. 417 crore. The Benefit Cost Ratio works out to 3.93. The apportioned cost of water brought for this link project by the upper links are not added to the capital cost. The B.C. ratio may undergo a change if the cost of transferring surplus waters from the upstream link canals is also considered which will be studied in detail once report of upper links are finalized and at the time of preparation of DPR.