

Chapter II

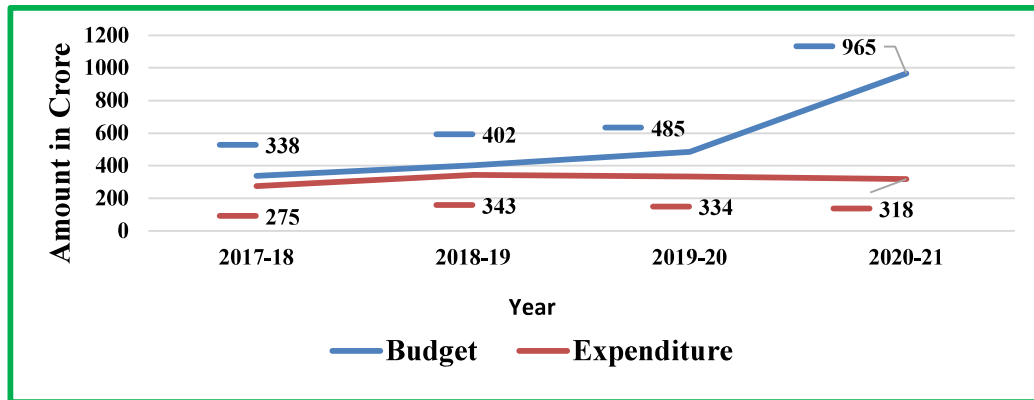
Financial and Environmental Aspect

Chapter II Financial and Environmental aspect

2.1 Budget allotment and expenditure

The project was taken up by the State Government with a total cost of ₹4,458.86 crore⁹ and the same was increased to ₹5,217.73 crore¹⁰ as of November 2021. The budgetary provisions made and expenditure incurred for the project during audit period 2017-18 to 2020-21 was as depicted in *Chart 2.1*. The expenditure on the project during 2017-21 was ₹1270.90 crore¹¹.

Chart 2.1: Budget allotted and expenditure incurred for the period 2017-21



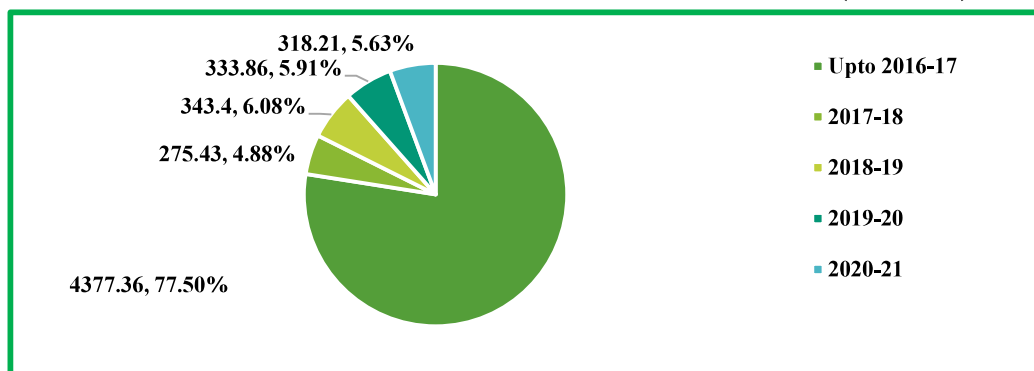
Source: Compiled based on budget booklets and information furnished by the Department

Note : The expenditure incurred as per State Finance Accounts : 2017-18 : ₹NIL, 2018-19 : ₹341.31 crore, 2019-20 : ₹100.74 crore, 2020-21 : ₹114.21 crore

Audit noticed that despite increase in budget authorization during 2017-21, the expenditure incurred showed a decreasing trend. The progress of expenditure (including cost of land acquisition and Resettlement & Rehabilitation) since inception to 2016-17 and year-wise from 2017-18 to 2020-21 was as exhibited in *Chart 2.2* below:

Chart 2.2: Year wise expenditure of the Project

(₹ in crore)



Source: As per the information furnished by the Department

⁹ based on original agreement value of works

¹⁰ excluding price variation, reimbursements, land acquisition and Rehabilitation and Resettlement

¹¹ including price variation, reimbursements, land acquisition and Rehabilitation and Resettlement

Scrutiny of bills revealed that there was additional expenditure of ₹630.57 crore over the agreement values towards price variations, reimbursement of Bank Guarantees and insurance charges, etc.

The Department attributed the increase in cost of the project to non-completion of works within stipulated time due to delay in handing over of lands, non-payment of land compensation, non-handing over of forest land, change in scope of work, sanction of additional items and quantities over and above IBM, changes in design parameters, non-availability of sand due to new sand policy etc.

However, the Government did not furnish any reply in this regard.

Thus, the increase in cost of the project was fully attributable to the Department as preliminary clearances were not obtained in time. Due to time overrun there was increase in prices of fuel, cement and steel, etc., which ultimately resulted in increase in project cost.

2.2. Package-wise agreement value and achievement

The total agreement cost of the project over the period of 18 years, was increased from ₹4,458.86 crore to ₹5,217.73 crore due to factors mentioned at Paragraph 2.1. Despite increase in the cost of the project, there was no substantial progress and project as a whole remained incomplete. The details of package-wise agreement value and achievement made thereto is given in **Table 1.1**.

Table:2.1 Showing package-wise agreement value and achievement

(₹ in crore)					
Package Number	Agreement Value (Both Stages I and II ¹²)	Revised Agreement Value	Total Expenditure	Components Involved	Status of Works
I	624.60	727.66	937.24	Excavation of Tunnel-I, Exit and Link Channel and Head Regulator	All components completed, except lining of Tunnel-I for last one Km (towards Head Regulator)
II	333.31	404.72	338.07	Excavation of feeder canal, construction of Sunkesula dam and excavation of Teegaleru canal and its distributary system.	Construction of Sunkesula dam, excavation of Feeder and Teegaleru canal completed. Structures (CM&CD works) on Feeder and Teegaleru Canal completed 70 per cent and 54 per cent respectively. Distributary network for 12,266 acres, out of the contemplated 62,000 acres of ayacut was created.
III	417.56	420.89	410.55	Construction/excavation of Gottipadia dam and canal and its distributary system.	All components completed, except excavation of Field Channels under distributary network.
IV	459.19	543.93	495.38	Excavation of Link canal, construction of Kakarla dam, excavation of Eastern Main Canal (EMC) upto	All components completed, except 0.600 Km of excavation of EMC. Only 37.5 per cent of the structures were completed. Creation of an ayacut of 47,500 acres is pending.

¹² inclusive of Stage II additional works under Package II: ₹78.81 crore, Package III: ₹37.56 crore and Package IV: ₹252.39 crore

				Km 44.625 and its distributary system	
V	735.21	962.08	610.78	Excavation of Tunnel-II along with approach channel, Head Regulator and Exit channel.	Excavation of 2.624 Km of Tunnel-II and construction of Head Regulator are pending and in progress
VI	1135.85	1250.71	893.56	Excavation of EMC from Km 44.625 to Km 146.910 along with formation of Peddireddypalli reservoir and distributary system	Excavation of 3.000 Km of EMC and 15 per cent of Branch Canal are pending and in progress. Structures (CM&CD works) on EMC and Branch Canal are completed 41 per cent and 17 per cent respectively. Distributary network is pending due to Land acquisition problems.
VII	753.14	817.81	638.14	Excavation of Western Branch Canal (WBC), which takes off from Km 25.465 of EMC, formation of Turimella, Racharla and Seetharamasagar reservoirs and two independent reservoirs viz., Rallavagu and Gundlabrahmeswaram and its distributary system.	Excavation of 39.53 per cent of WBC completed. All five pump houses completed and laying of 88.85 per cent of pressure mains completed.
IA & VA	0.00	89.93	0	--	--
Total	4458.86	5217.73	4323.72	--	--

Source: Compiled by Audit based on the information furnished by the Department

Audit noticed that:

- There was a total increase in project cost by ₹339.01 crore in Packages II to IV, VI and VII, due to additional sanctions made to contractors.
- In Packages I, V and IA & VA, there was an increase in project cost by ₹419.86 crore due to re-entrustment of works to new contractors.
- Though the Tunnels (except Tunnel-II), Link channel and Feeder canal were completed, water could not be impounded into the Nallamallasagar reservoir as the structures on Feeder canal are pending completion.
- Even if water is impounded into the Nallamallasagar reservoir through Tunnel-I, the water could not be supplied to the ayacut due to non-completion of distributary network.



Incomplete structure on Feeder canal

2.3. Status of land acquisition and environmental aspect

Out of a total land requirement of 28,529 acres for the project, 17,906 acres (62.76 per cent) of land was acquired as of March 2022 leaving a balance of 10,623 acres (37.24 per cent) yet to be acquired. The project involved a total forest land of about 7,585.75 acres (3,069.91 Hectare), which required clearance from Ministry of Environment and Forest (MoE&F), Government of India (GoI). Government of Andhra Pradesh (GoAP)

submitted (July 2007) the proposal under Forest Conservation Act 1980, for diversion of 3,069.91 Hectare of forest land for construction of the project.

GoI had accorded final approval¹³ for diversion of forest land in May 2014. The GoAP, based on approval by Ministry of Environment and Forest, accorded permission¹⁴ (Stage-II) for this project in May 2014 subject to certain conditions¹⁵. Audit noticed certain deviation to the environmental conditions stipulated during execution of work by the Department.

2.3.1 Dumping of excavated debris within the reserve forest area

As per the conditions stipulated by Forest Department¹⁶, the excavated debris should be dumped away from the Nagarjuna Sagar Srisailam Tiger Reserve and Reserved Forest boundary and should be scientifically stabilised.

Audit noticed that the excavated debris of Head Regulator works was dumped near Kollam vagu location (from where water is to be drawn) in an area of three Hectare (Ha). The Forest Department issued (June 2019) Preliminary Offence Report No. 815 (POR) for violating the conditions of environmental clearance.



Dumping of excavated muck in Reserve Forest area

The Government replied (January 2023) that the subject work is highly critical in nature in respect of accessibility, transportation of materials, communication facilities, working environment, limited working period, etc. Certain minimum submergence area (0.6 Hectare) adjacent to Head Regulators was raised to Full Reservoir Level with excavated muck for creating temporary working space, which is un-avoidable. Government also replied that the Forest Department have been informed that debris temporarily stacked would be rehandled, transported, and dumped away from Reserve Forest Area.

The reply is not acceptable, as mandatory prior permission of Forest Department for dumping of excavated muck within the Reserve area was not obtained.

2.3.2 Non deployment of staff of Forest Department to monitor the project

As per the conditions stipulated (May 2014) by Forest Department, the works are to be got executed under the presence of sufficient Forest Department staff (drafted on deputation basis as decided by Forest Department) at the cost of user agency. However, no records were maintained in this regard by the Water Resources Department (WRD).

The Government replied (January 2023) that the condition to depute the staff of Forest Department was not mandatory and stated that the Forest Department staff are constantly monitoring the entire work of construction of Head Regulator. It was further

¹³ MoE&F orders dated 09.05.2014. Stage I permission was accorded by MOE&F on 30.09.2009

¹⁴ GoI, MOEF, file No.8-71/2007-FC dated 09.05.2014 and G.O. Ms. No. 59 Environment, Forests, Science & Technology (For.I) Department dated 31.05.2014

¹⁵ no damage to flora and fauna, no labour camps to be set up in forest area, no tree felling, etc.

¹⁶ para 6 (xvii)(c) of G.O. Ms. No. 59 dated 31.05.2014

stated that the condition warrants only execution of work under the presence of Forest Department staff but not on deputation to the user agency.

The reply is not acceptable. While according environmental permission, the GoAP had mentioned (condition number 6 (xvii) (I)) that the works may be got executed under the presence of sufficient staff of the Forest Department on deputation, as decided by the Forest Department, at the cost of user agency. However, the Forest staff were not deputed; they were not on the payrolls of the Water Resources Department.

2.3.3 Change in methodology of excavation of tunnel without assessing the environmental impact

Government instructed¹⁷ (December 2020) the Chief Engineer (Projects), Ongole to form a Committee¹⁸ to recommend or provide opinion/instruct to take up manual excavation activity in Tunnel II without affecting already executed concrete lining of Tunnel-I. The Committee should also put forth the environmental impact due to change in methodology (i.e. from Tunnel Boring Machine¹⁹ (TBM) to other mode) of excavation in Tunnel-II. Further, the Committee should state whether such an activity would be within the boundaries set by environmental clearance given for the purpose. The recommendations/opinion made by the Committee are to be placed before the State Level Technical Committee (SLTC) for further recommendations to the Government.

Scrutiny of records revealed that the Department concluded a Supplementary agreement²⁰ (April 2022) with the contractor²¹ for ₹277 crore towards excavation of Tunnel II from Km 12.000 to Km 18.787 including excavation of three number of adits from Tunnel I to Tunnel II using heading and benching method²², instead of TBM. As of July 2022, an amount of ₹79.69 crore was paid (July 2022) to the contractor towards excavation of tunnel.

¹⁷ Memo No. ICD01-MJIR/632.2020-Projects-II-1, dated 31.12.2020

¹⁸ Technical Experts/ team of Senior Geologists from Geological Survey of India (GSI)

¹⁹ a machine used to excavate tunnel with a circular cross section through a variety of soil and rock strata. These are used as an alternative to drilling and blasting methods

²⁰ No. 01/2022-23 dated 04.04.2022

²¹ M/s Megha Engineering & Infrastructures Limited

²² a tunnelling method in which a top heading is excavated, followed (within one to a few blasts or shoves) by excavation of the lower bench



Excavation of Adit from Tunnel I to II for manual excavation in Tunnel II. Until closure of Adit, release of water through tunnel I is not possible



Excavation of Tunnel II using manual drill and blast method

As there was change in methodology of excavation in Tunnel II and also excavation of adits from Tunnel I to Tunnel II, as per instructions of Government, a Committee should have been constituted to recommend or provide opinion/instruct to take up manual excavation activity and also put forth the environmental impact. However, the Department did not furnish any documentary evidence regarding constitution of Committee, recommendations/opinion made, the assessment of environmental impact due to change in methodology in excavation of Tunnel-II and further recommendations of SLTC. Further, information regarding the assessment carried on the adverse effect to the eco system in Reserve Forest area, by Water Resources Department as well as by Forest Department, was also not furnished.

The department stated (February 2023) that to reap early benefits of the project and to create number of working faces, for tunnel II excavation, three adits²³ were excavated from Tunnel I. Further, it was replied that no mandatory permissions are required as excavation is carried out as per the standard procedures and practices. The Department also stated that the Research Officer, Ministry of Environment, Forest & Climate Change (MoEF & CC), Regional Office, Chennai had visited (September 2019) the tunnel site and did not find any fault with the procedure even from the environment impact angle.

The reply of the Department is not acceptable. If 'no mandatory permissions are required', the Government would not have ordered to assess the environmental impact due to change in excavation methodology in Tunnel II without affecting the concrete lining of Tunnel-I. Further, the Research Officer, MoEF & CC had visited the tunnel site and submitted the report prior to the Government Order (December 2020) and hence had no relevance. Also, it could not be ascertained from the records submitted to Audit, whether the procedure prescribed by Government was adhered to prior to change in the method of excavation from TBM to heading and benching method.

²³ adit 1 at Km 17.800, adit 2 at Km 16.555 and adit 3 at Km 13.500 of Tunnel I