

Chapter II

Financial Management and Environmental Aspects

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There was drastic decrease in allocation of budget to the Project by Government of Andhra Pradesh (GoAP) during 2019-23, when compared to 2018-19. The percentage utilisation of budget provided ranged between 21 to 66 during 2017-23. This was mainly due to poor progress of works, indecisiveness in rectifying the damaged Diaphragm Wall and non-construction of Earth-Cum-Rock-Fill dam. The expenditure incurred was largely focused on works component, giving least priority to Land Acquisition and Rehabilitation and Resettlement activities.

As against the total expenditure of ₹16,089.79 crore incurred during 2014-23 by GoAP for the Project, an amount of ₹14,290 crore was reimbursed by Government of India (GoI). There was inordinate delay in reimbursement of amount by GoI to GoAP due to delayed/non-submission of requisite documents by GoAP to Polavaram Project Authority (PPA). The Revised Cost Estimate submitted for 2017-18 Price Level by GoAP remained unapproved by GoI, due to delay in completion of Socio-Economic Survey and preparation of cost estimates for distributary network by GoAP.

There were instances of non-compliance of environmental conditions stipulated by Ministry of Environment and Forest. The construction of protective embankments to the submergence villages in the neighbouring States of Chhattisgarh and Odisha due to be completed by 2014-15, was not yet commenced, as public hearing was not done by the concerned States. The GoAP unilaterally implemented two lift irrigation schemes without the approval of Central Water Commission, National Green Tribunal (NGT) and PPA which attracted environmental compensation to be paid to NGT. An additional expenditure was necessitated for scientific disposal of spoil earth as per the directions of NGT which was not done previously in line with agreement conditions.

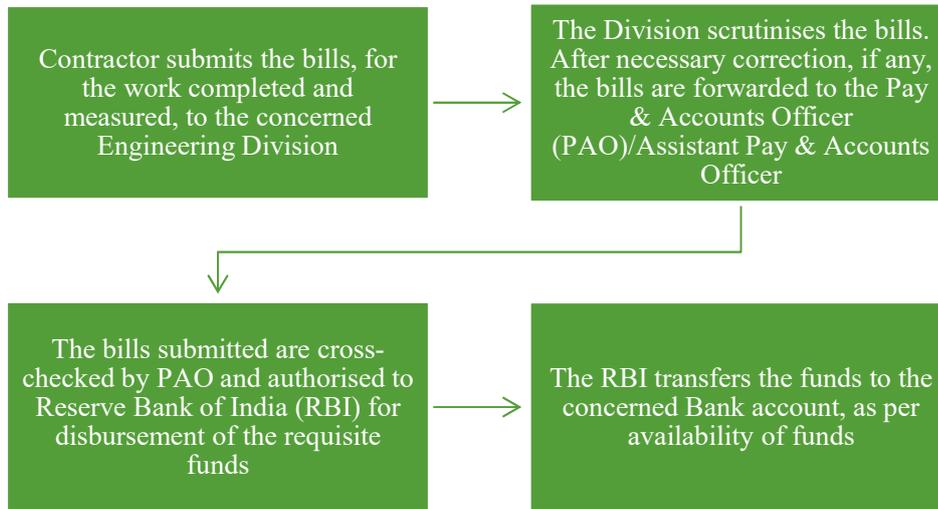
2.1 Financial Management

2.1.1 Budget Allotment and Expenditure

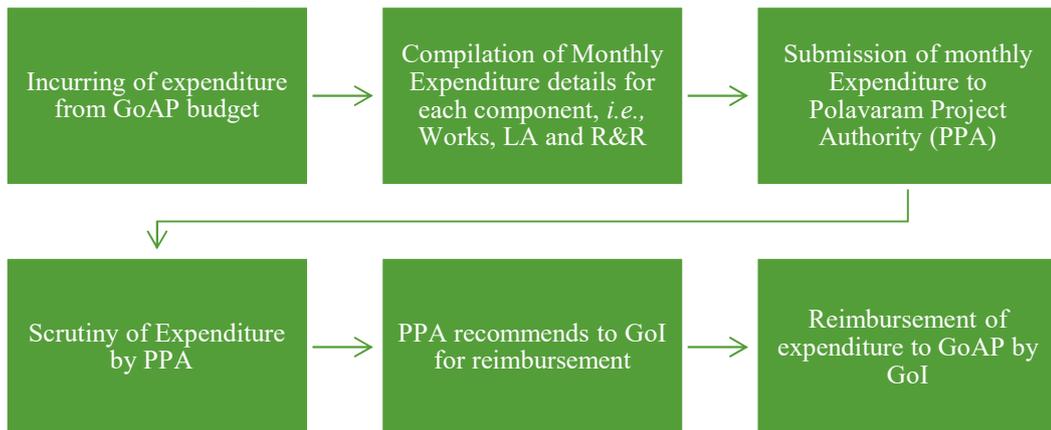
As per the arrangement between Government of India (GoI) and Government of Andhra Pradesh (GoAP) for execution of Polavaram Irrigation Project (PIP), initially the expenditure is incurred by GoAP through its budgetary resources. Subsequently, the expenditure is being reimbursed by Ministry of Jal Shakti (MoJS), GoI, as per the recommendations of Polavaram Project Authority (PPA). The process of ‘Settlement of bills to the contract agencies’ by

GoAP and ‘Reimbursement of expenditure incurred by GoAP from GoI’ are given in **Flow Chart 1** and **Flow Chart 2** respectively.

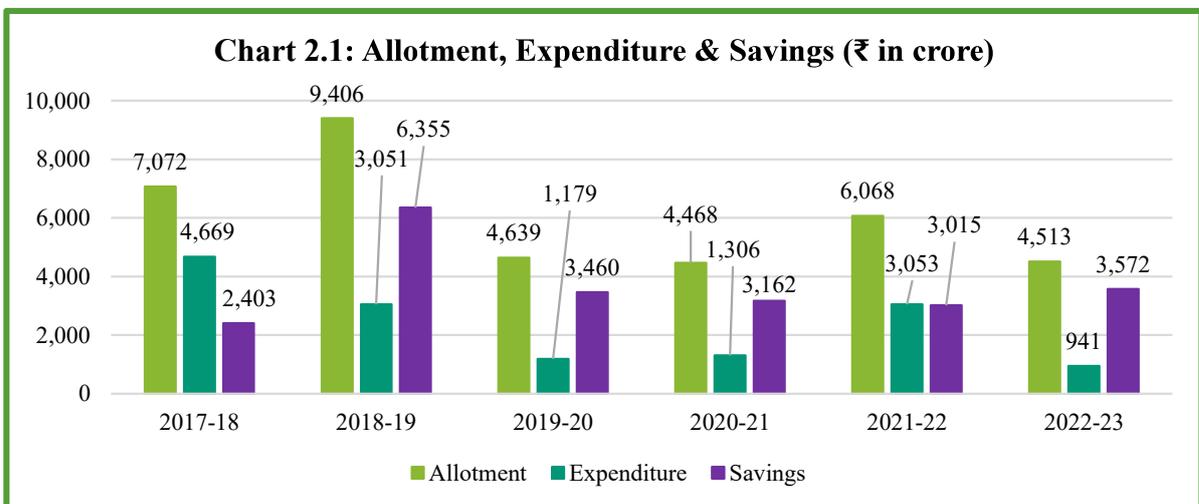
Flow Chart 1: Cycle of settlement of bills to contract agencies



Flow Chart 2: Cycle of reimbursement of funds from Government of India



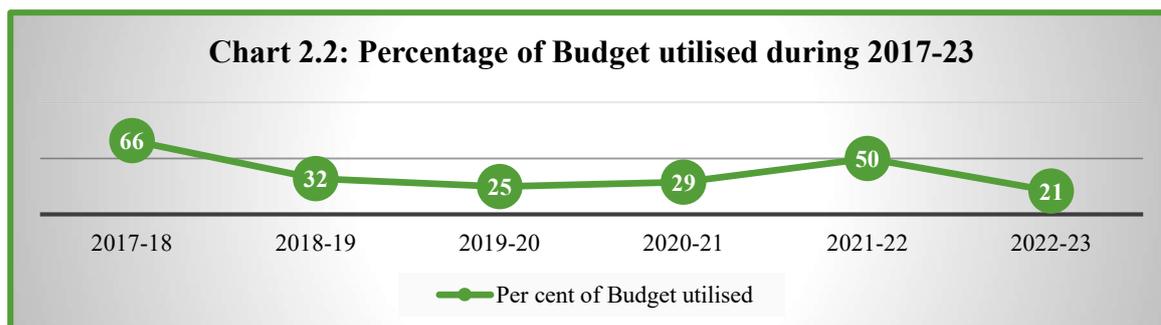
The budget allotted and expenditure incurred by GoAP on the Project for the period 2017-18 to 2022-23, as reported by the CE, PIP, was as depicted in **Chart 2.1**.



Source: Finance & Appropriation Accounts of GoAP and records of Water Resources Department

It could be seen from the above that:

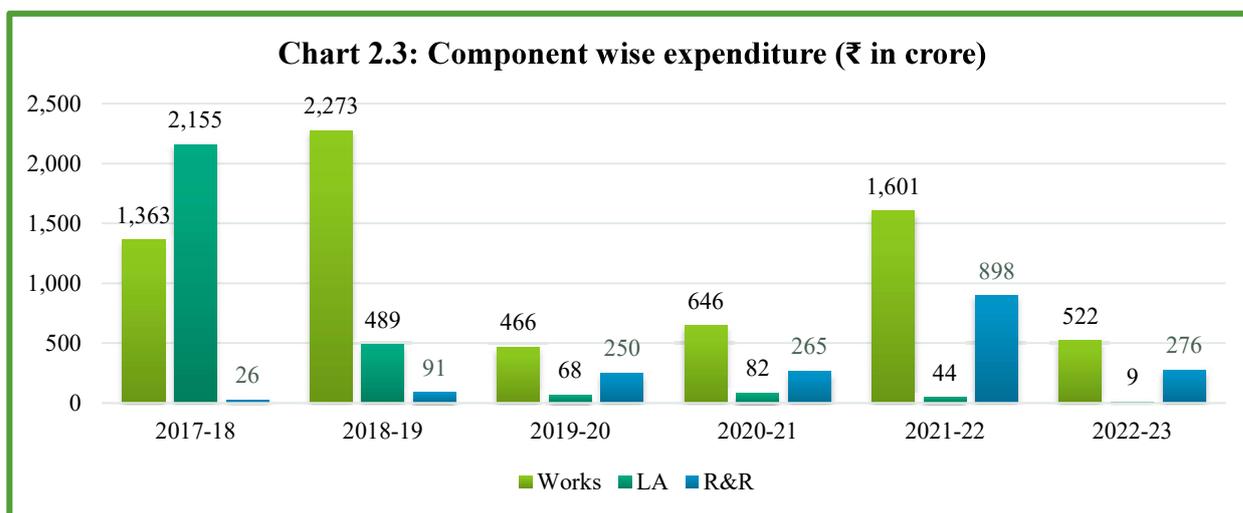
- The budget allotment and the expenditure incurred decreased (except during the year 2021-22) drastically from the year 2019-20 onwards when compared to 2018-19. The decrease in budget allotment was approximately 50 per cent during 2019-21 and 2022-23, due to poor progress of work, indecisiveness in rectifying the damaged Diaphragm Wall and non-construction of Earth-Cum-Rock-Fill (ECRF) dam.
- The budget allocated was not utilised in full during any of the years for the period 2017-23. The percentage of utilisation of budget allocated during the period 2017-23 ranged between 21 to 66 per cent, as depicted in **Chart 2.2**.



Source: Compiled based on the information furnished by the Department

Thus, despite availability of budget, the funds could not be utilised to the full extent, thereby the progress of the project could not reach the desired targets.

- The component-wise expenditure incurred by GoAP on PIP during 2017-23 was as depicted in **Chart 2.3**.



Source: Compiled based on the information furnished by the Department

Note: The year-wise expenditure and component-wise expenditure figures would vary as the year-wise expenditure involves expenditure on other items²⁵ also.

From the above it can be inferred that:

- The expenditure was largely focused on works component, giving least priority to Land Acquisition (LA) and Rehabilitation and Resettlement (R&R) activities. Even if the

²⁵ salaries, contingent expenses, vehicle hire charges, office establishment, etc.

Headworks and canals are completed, the reservoir cannot be filled unless LA for R&R activity and rehabilitation of PDFs from the submergence area *i.e.*, upto contour (+) 41.15m is completed.

- Despite there being need (as of March 2023) for acquisition of land measuring 54,248 acres (*refer Para 2.2.2*) for R&R activity and submergence area, there was decreasing trend of expenditure on LA component during the audit period.
- Though the expenditure on R&R component increased year by year from 2017-18 (except 2021-22), the total expenditure of ₹1,806 crore (during 2017-18 to 2022-23) was very meagre when compared to total R&R expenditure (as per 2nd RCE) expected (₹24,120 crore) to be incurred (*refer Chart 2.4*).

The Department replied (May 2023) that though budget was allotted, it could not be spent due to unforeseen hurdles *viz.*, Land Acquisition issues, court cases, contractual issues, natural calamities, Covid-19 pandemic, delay in approval of designs by Central Water Commission, *etc.*

The Government accepted (November 2024) that there was fall in allocation and expenditure and stated that a detailed reply would be submitted.

- A comparison of expenditure incurred on the project as reported by the CE, PIP with the expenditure booked as per the approved Finance Accounts and that reported by PPA is given in *Table 2.1*.

Table 2.1: Comparison of expenditure incurred reported by CE, PIP, as per Finance Accounts and PPA

(₹ in crore)

Year	Expenditure reported by Chief Engineer, PIP	Expenditure as booked under Finance Accounts	Difference (+/-)	Expenditure reported by PPA
2017-18	4,669.65	4,668.86	(+)0.79	3,669.02
2018-19	3,051.19	3,061.68	(-)10.49	2,962.60
2019-20	1,178.60	98.39	(+)1,080.21	875.29
2020-21	1,305.98	1,302.03	(+)3.95	1,089.28
2021-22	3,053.05	2,645.82	(+)407.23	2,635.29
2022-23	941.19	930.42	(+)10.77	905.81
Total	14,199.66	12,707.20	1,492.46	12,137.29

Source: Compiled based on the information furnished by the Department and from the Finance Accounts

It could be seen that:

- The expenditure reported by CE, PIP was more than that booked in Finance Accounts specifically during 2019-20 by ₹1,080.21 crore. The reasons for excess reporting was not forthcoming from the records produced to audit.
- The overall expenditure incurred on the project between 2017-23 was over-reported by ₹1,492.46 crore by the CE, PIP.
- There was a variation in expenditure of ₹569.91 crore on the project as booked under Finance Accounts when compared to PPA account during 2017-23.

Thus, there was a mismatch between the expenditure figures reported by CE, PIP, PPA and expenditure booked under Finance Accounts. This mismatch needs reconciliation.

Recommendation 2.1: The State Government should ensure adequate budgetary support and enforce upon the Department for optimum utilisation of allocated funds for timely completion of the project.

2.1.2 Pendency of bills

Scrutiny of records of budget and expenditure during the period 2020-21 to 2022-23 revealed that though bills pertaining to works, LA and R&R were pending for payment, the allotted budget was not utilised. As of March 2023, bills worth ₹2,097 crore were pending for payment for the period 2020-23 despite availability of budget which resulted in savings as given in **Table 2.2**.

Table 2.2: Amounts pending for payment despite availability of budget

(₹ in crore)

Year	Savings	Amount pending for payment			Total
		Works	Rehabilitation & Resettlement	Land Acquisition	
2020-21	3,163	422	0	0	422
2021-22	3,015	209	0	0	209
2022-23	3,572	1,207	65	194	1,466
Total	9,750	1,838	65	194	2,097

Source: Compiled based on the information furnished by the Department

Note: There were no pending bills during the period 2017-2020

Audit further noticed that LA bills worth of ₹193.80 crore were pending at Government level for release and bills to an extent of ₹83.17 crore are to be approved for payment to beneficiaries to the end of March 2023 as detailed in **Table 2.3**.

Table 2.3: Unit wise pending bills status

(₹ in crore)

Sl. No.	Name of the unit	Bills raised and payment pending	Land Awards passed and bills to be raised
1.	Special Deputy Collector (SDC) Land Acquisition (LA), PIP, LMC-1, Rajamahendravaram	75.91	6.32
2.	SDC(LA), PIP, Kunavaram	14.74	0.54
3.	SDC(LA), Chinturu	11.44	--
4.	SDC(LA), PIP, Yetapaka	0.93	3.27
5.	SDC(LA), PIP, RMC UNIT-I, Kovvur	20.03	7.03
6.	SDC(LA), PIP, RMC UNIT-II, Eluru	70.75	66.01
Total		193.80	83.17

Source: Compiled based on the information furnished by the Department

Non-payment of bills may curtail the fund flow to the contract agencies and would have an adverse effect on the progress of works component. Non-payment of LA and R&R benefits to PDFs would deprive/delay the rights of PDFs as per RFCTLARR Act, 2013.

The Department replied (December 2022) that the bills were uploaded/processed in time as soon as the budget was released. However, the same were not paid due to release of funds at

the fag end of the financial years. Regarding LA and R&R, it was replied that the bills would be submitted again in due course for payment.

The reply is not acceptable. In CFMS²⁶, once the bills are uploaded, the payments are made based on the Budget allocation and authorisation by the Finance Department.

While accepting that the funds could not be released to clear the bills, despite budget provision, the Government stated (November 2024) that its priority of welfare schemes overrode the infrastructure projects. It was also replied that though the bills were submitted to PPA every month, GoI delayed reimbursement of the bills and denied certain expenditure on the pretext of component wise ceiling, non-availability of estimate provisions, etc.

The reply is not acceptable. Despite availability of budget provision, fund flow to the contract agencies were curtailed which ultimately affected the progress/completion of works and deprived the PDFs of their legitimate rights.

2.1.3 Central Assistance to the Project

After declaration of PIP as National Project, 100 per cent funding of the remaining cost of irrigation component (works, LA and R&R) from April 2014 was to be borne by GoI. Accordingly, GoI had constituted (2014) Polavaram Project Authority (PPA), a special purpose vehicle to plan, execute and monitor the entire project. The expenditure incurred by GoAP for execution of PIP shall be reimbursed by GoI.

As of March 2014, out of the total estimated cost of ₹16,010.45 crore, an expenditure of ₹4,730.71 crore was incurred. The total expenditure incurred from April 2014 to March 2023 was ₹16,089.79 crore. As per records of CE, PIP, out of this, an amount of ₹14,290 crore was reimbursed by GoI to GoAP. The year wise reimbursement of expenditure incurred by GoAP as reported by CE, PIP, as per data available on PPA website and receipts as booked in the Finance Accounts for the period April 2014 to March 2023 was as shown in **Table 2.4**.

Table 2.4: Reimbursement by GoI during 2014-23

(₹ in crore)				
Year	Expenditure reported by CE, PIP	Reimbursement reported by CE PIP	Reimbursement as booked under Finance Accounts	Reimbursement as per PPA Website
2014-15	439.47	245.00	0.00	250.00
2015-16	1,867.94	590.00	635.00	600.00
2016-17	1,645.07	2,515.00	2,281.54	2,514.16
2017-18	3,669.03	1,993.00	2,425.72	2,000.00
2018-19	2,962.61	1,385.00	1,385.00	1,400.00
2019-20	875.30	1,780.00	1,780.00	1,850.00
2020-21	1,089.27	2,234.00	2,234.20	2,234.20
2021-22	2,635.30	1,877.00	1,897.70	1,898.80
2022-23	905.80	1,671.00	1,671.23	1,671.24
Total	16,089.79	14,290.00	14,310.39	14,418.40

Source: Information furnished by the Department, PPA website and Finance Accounts of GoAP

²⁶ Comprehensive Financial Management System is an online software system developed by State Government to manage their finances more effectively and efficiently. The system typically include features such as budgeting, accounting, reporting, and analytics

As seen from the above, there is a variation of ₹20.39 crore between the reported reimbursement and the receipt booked under Finance Accounts. Further, there is a variation of ₹128.40 crore between the reported reimbursement and that was available on the PPA website. As per the Annual Report of PPA for the year 2022-23, an amount of ₹129.00 crore was the expenditure incurred by PPA towards establishment charges.

The component-wise expenditure incurred by GoAP and reimbursed by GoI for the period 2017-18 to 2022-23 was as shown in **Table 2.5**.

Table 2.5: Component-wise expenditure and reimbursement during 2017-23

(₹ in crore)				
Sl. No.	Name of the Component	Expenditure incurred by GoAP	Amount reimbursed by GoI	Amount to be reimbursed by GoI
1.	Headworks	5,149.02	4,825.75	323.27
2.	Canals	1,722.26	1,204.45	517.81
3.	Land Acquisition	2,847.80	2,797.89	49.91
4.	Rehabilitation & Resettlement	1,806.41	1,795.56	10.85
5.	Administrative Charges	611.81	484.56	127.25
Total		12,137.30	11,108.21	1,029.09

Source: Information furnished by the Department

2.1.3.1 Delay in submission of requisite documents to PPA

Audit noticed²⁷ that there was inordinate delay ranging between 10 to 449 days for scrutiny and reimbursement of bills submitted by GoAP to PPA for approval by MoJS.

The PPA replied (July 2022) that due to non-receipt of all the requisite documents²⁸, from GoAP, the bills could not be forwarded to MoJS and hence there was no delay on the part of PPA in recommending and forwarding the bills to MoJS. It was also stated that the funds for PIP are being provided through Extra Budgetary Resources (EBR), *i.e.* through NABARD²⁹, which requires two to three weeks for arranging the requisite funds.

Thus, it is evident from the reply of PPA that the delay in processing of the bills by PPA was due to non-submission of requisite documents by GoAP and also due to lack of clarity in furnishing details regarding component/ month/ bill wise expenditure incurred as mentioned by PPA.

The Government replied (November 2024) that the billing process and the reimbursement procedure has been now streamlined after nomination of Nodal Officers (December 2020) as suggested by the PPA and the requisite documents as desired by PPA are being submitted in time.

The reply is not acceptable. Though Nodal Officers were appointed (December 2020), there were delays ranging from 10 to 70 days between submission of bills by GoAP to PPA and subsequent recommendation by PPA to MoJS.

²⁷ as per the information furnished by Chief Engineer, PIP, Dowlaiswaram

²⁸ audit certificates for the expenditure incurred, month-wise and bill wise expenditure details of LA, R&R, *etc.*

²⁹ National Bank for Agriculture and Rural Development

The timely submission of all requisite documents along with the bills to PPA during the audit period would have reduced the time taken between submission of bills by the GoAP to PPA and recommendation of reimbursement by PPA to GoI.

2.1.3.2 Delay in Investment Clearance

Investment clearance was accorded (2009) by the Planning Commission for the original cost estimate (2005-06 PL) of ₹10,151.05 crore for the project, prepared by GoAP. Subsequently, the project cost was revised (1st RCE) with 2010-11 PL to ₹16,010.45 crore by GoAP for which investment clearance was accorded (February 2017) by GoI.

Subsequently, the project cost was again revised (2nd Revised Cost Estimate) to ₹55,548.87 crore (at 2017-18 PL) and the same was considered by MoJS, GoI in 2019 and referred to the RCC³⁰ to examine the reasons for cost escalation. The proposed increase of ₹39,538.42 crore in project cost was due to an increase in enhanced compensation under RFCTLARR Act, 2013 and inadequate provision for land³¹ requirement in earlier estimates. The RCC pegged (March 2020) the revised cost to ₹47,725.74 crore against the proposed amount and highlighted shortcomings duly reviewing and restricting the cost component of LA³², R&R³³ and canals³⁴. As of March 2023, the 2nd RCE was yet to be approved by GoI.

The GoAP submitted (June 2021) clarifications on the shortcomings pointed out in 2nd RCE by PPA. However, only partial compliance was reported (June and November 2021) and non-compliance to the shortcomings includes the following:

- Distributary network/command area development was to be executed at the same pace as other components of project. However, the Detailed Project Report for the distributary network is not yet approved by PPA/CWC, which is a pre-requisite for clearing the investment proposal.
- The details of R&R for the firmed-up PDFs is mandatory for clearing investment proposals. The firming up of PDFs would be known only after completion of Socio-Economic Survey (SES) above EL (+) 41.15m. As the SES was not completed, the information in this regard was not furnished to PPA by WRD, GoAP.

From the above, it is evident that delay in completion of SES and approval of DPR for distributary network by GoAP resulted in delay in according investment clearance by GoI.

The Government replied (June 2024) that the SES can be finalised only after approval of draft R&R scheme which is linked with the funding commitment by GoI. Further, the completion of distributary system to the canal network is a continuous process involving huge magnitude of work.

The reply is not acceptable, as the Department reported that SES for above (+) 41.15 m contour was completed in 2022, however, the R&R scheme is yet to be finalised. Further, the

³⁰ under the chairmanship of JS & FA, MoWR, RD&GR

³¹ for work, submergence and R&R activities

³² (a) land requirement as approved in 1st RCE was retained (b) reduction of land compensation rate per acre from ₹11.52 lakh to ₹10.91 lakh

³³ (a) compensation per house reduced from ₹3.15 lakh to ₹2.85 lakh (b) reduction of infrastructure/ amenities expenditure per PDF from ₹7.00 lakh to ₹6.52 lakh

³⁴ cost of these work items was frozen at 2013-14 price level, as the increase in the cost was mainly due to revision of discharge capacities by GoAP

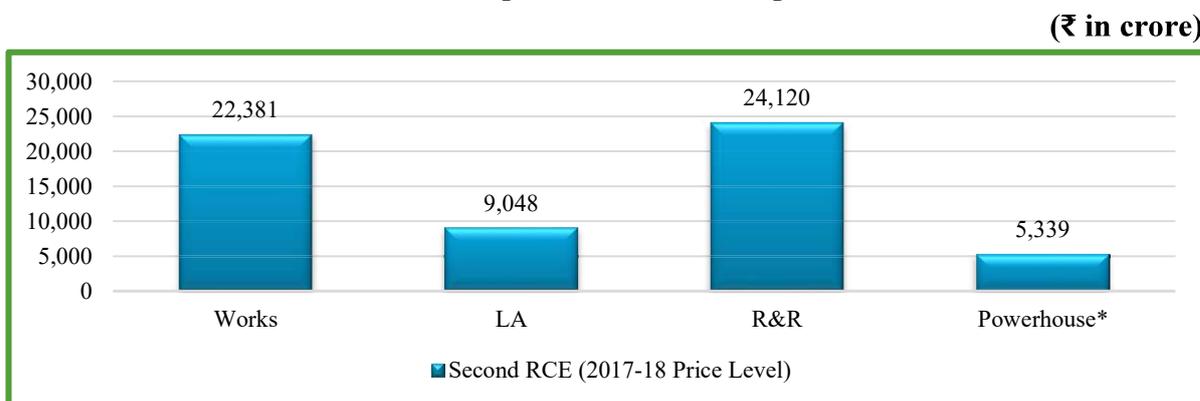
Survey and Levelling operations for distributary networks was taken up only in November/December 2019, *i.e.*, a delay of 14 years from commencement of the project works. Had the preparation of DPR for distributary network been taken up once the canal alignment for both LMC and RMC was finalised, the delay in investment clearance would have been avoided.

Recommendation 2.2: *The State Government should expedite the Socio-Economic Survey process and obtain approval of DPR by the CWC for the distributary network, to facilitate the approval of the RCE by GoI for timely completion of the project.*

2.2 Status of the Project

The components of PIP include civil works³⁵, LA and R&R. The component-wise original cost estimate was ₹8,258 crore for works component, ₹1,149 crore for LA, ₹745 crore for R&R as per SSR 2005-06 and ₹5,339 crore for Powerhouse. The component-wise cost estimates were increased and as per 2nd RCE (₹55,548.87 crore at 2017-18 PL) the component wise cost estimate was as depicted in **Chart 2.4**.

Chart 2.4: Component-wise cost as per 2nd RCE



Source: 2nd Revised Cost Estimate report and records of the Department

*Revised cost (2016-17) as submitted to Central Electricity Authority and does not form part of RCE

The cost of each component had increased manifold³⁶ due to frequent change in contractors and contract system from Engineering Procurement Construction (EPC) to Lumpsum / Reverse Tendering³⁷, delay in awarding of works (*discussed in detail in Chapter III*), change in designs of the work components, increase in discharge capacity of the canals, increase in prices, increase in cost of LA and R&R due to adoption of RFCTLARR Act, 2013, *etc.*

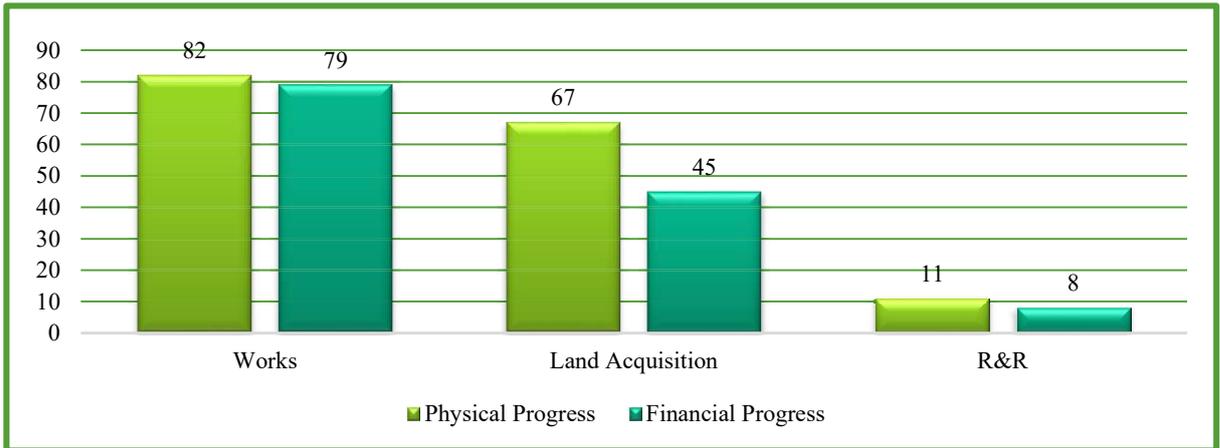
Despite the increase in the cost of the project, there was lack of substantial progress, and the project as a whole remained incomplete as of March 2023. The percentage of physical and financial progress of the project as of March 2023 was as shown in **Chart 2.5**.

³⁵ Main Dam along with canals and distributary network

³⁶ works by 171 *per cent*, Land Acquisition by 687 *per cent* and R&R by 3,138 *per cent*

³⁷ Reverse tendering is a procurement method where the buyer invites the targeted bidders (participated in the normal bidding process) to offer / quote a price (lower than the lowest tenderer cost) at which they would complete the work

Chart 2.5: Status of the Project (in per cent)



Source: Records of the Department

Further, out of ₹47,725.74 crore (as recommended by RCC) to be spent towards PIP, an amount of ₹16,089.79 crore was spent as of March 2023 during 2014-23. The status of each component of the project is discussed in the subsequent paragraphs.

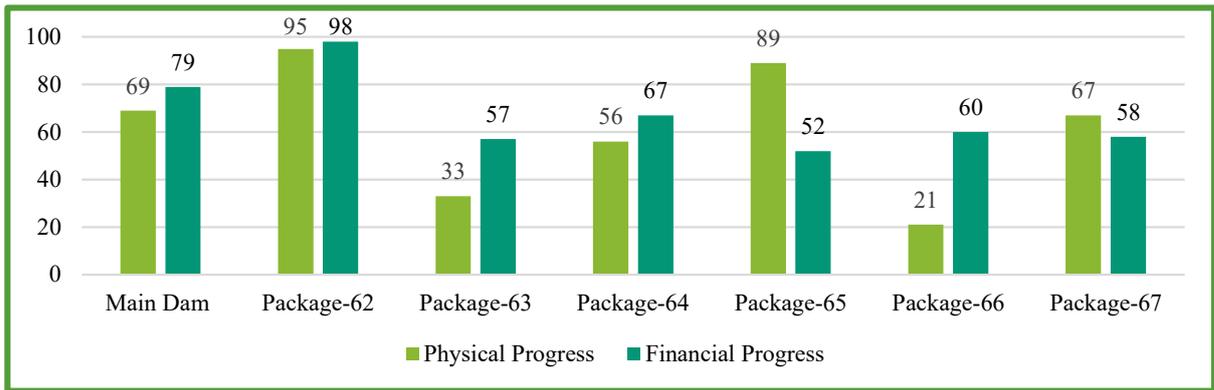
During the Exit Conference, the Government replied (November 2024) that now GoI has decided to fund the project in two Phases and the Phase-I is targeted to be completed by March 2026, with the provision for one year extension.

2.2.1 Status of Civil Works

The works were divided into 22 packages and awarded initially under EPC system. Out of the total agreement value of ₹11,794.24 crore for the works component (excluding Powerhouse component), an expenditure of ₹9,345.34 crore was incurred (as of March 2023), since inception of the project, registering a financial progress of 79.24 per cent. The agreement value of each package, supplementary agreements involved, contractors engaged, type of contract are detailed in **Appendix 2.1 (A) (Headworks) and Appendix 2.1 (B) (Canals)**. The status of works as of March 2023 was as discussed below:

(a) Headworks

The Headworks or Main Dam including connectivities (both left & right) were divided into seven packages and initially awarded (March 2005 and August 2006) on EPC mode. As of March 2023, out of works amounting to ₹7,422.69 crore awarded, an expenditure of ₹5,757.48 crore was incurred. Even after a lapse of 17 years, the Headworks were not yet completed. As of March 2023, package-wise physical and financial progress of works was as depicted in **Chart 2.6**.

Chart 2.6: Progress of Headworks (in per cent)

Source: Records of the Department

Audit noticed that the delay in execution of works was due to frequent change of contract agencies, changes in designs and non-completion of R&R. In most of the packages, non-completion of work was attributable to slow progress of work, except in the following instances (*there is a detailed discussion on these issues in Chapter III*):

- The Diaphragm Wall laid at a cost of ₹399.77 crore under the proposed Earth-Cum-Rock Fill dam (ECRF dam - Main Dam Package) was damaged due to non-adherence to the planned construction schedule as per DPR and also due to non-existence of a contract agency to mitigate the flood situation. As a result, construction of main ECRF dam could not be commenced. The rectification work of damaged portion of Diaphragm Wall was under progress (March 2023).
- As far as Right connectivities (Package-64) is concerned, the tunnel through which water passes to RMC collapsed due to taking up the work in weak rock zone (*discussed in detail in Chapter III*). Hence, the package remained incomplete even after incurring expenditure of ₹70.89 crore, as rectification of the collapsed tunnel was yet to be taken up by the Department.
- Though the major portion of work of left connectivities (Package-67) was completed (except for the navigation channel and related works), the work was pre-closed (July 2020) by the Government, due to non-finalisation of designs³⁸ by Inland Waterways Authority of India (IWAI), after incurring an expenditure of ₹74.77 crore.

The Department replied (August 2022) that due to Land Acquisition issues there was delay in handing over of land to the contract agencies. The issues were, however, resolved only in the year 2015 by the Revenue Authorities. This resulted in revision of rates with SSR 2015-16 and the same was approved by the State Government. Further, as the contract agencies were not coping with the progress of the work, balance works were deleted and entrusted to another contract agency under the LS system. It was further replied that the decision to change the contract agencies was as per the orders of the competent authorities and as per site conditions.

The reply is not acceptable. Despite the change of contract agencies there was no substantial progress in works and in the above instances the works were stalled. Further, the Department

³⁸ location at which the Navigation channel/ tunnel is to be incorporated

had failed to enforce the agreement conditions on the agencies who have not adhered to the timelines of the work.

Reply from the Government is awaited (November 2024).

(b) Canal system

The canal works of RMC and LMC were divided into 15 packages (RMC: seven *packages* and LMC: eight *packages*). The canal works were taken up in the year 2005 with a target to complete within 24 months *i.e.*, by 2007. Even after a lapse of 17 years, LMC and RMC³⁹ works were not yet completed.

In respect of LMC, out of total agreement value of ₹2,317.90 crore, an expenditure of ₹1,683.17 crore was incurred till March 2023. The overall physical and financial progress of LMC works was 76.05 and 72.62 *per cent* respectively. Slow progress of work in LMC was attributed to non-completion of LA process.

In respect of RMC, out of total agreement value of ₹2,053.65 crore, an expenditure of ₹1,904.69 crore was incurred till March 2023. The overall physical and financial progress of RMC works was 96.14 and 92.75 *per cent* respectively. However, the distributary network and minors (field channels) were yet to be taken up, as the designs and the cost estimates were not yet finalised.

(c) Polavaram Hydro Electric Project

Techno-Economic Concurrence (TEC) was received⁴⁰ (February 2012) by APGENCO for an amount of ₹3,013.68 crore and the target for commissioning the power project was March 2018. The cost was revised from ₹3,013.68 crore to ₹5,338.95 crore (2016-17). Total expenditure incurred on the project so far was ₹884.89 crore. The physical and financial progress was 12 and 17 *per cent* respectively. The revised target date for commissioning the project is January 2026.

2.2.2 Status of Land Acquisition

As per Detailed Project Report submitted (2010-11 PL) to CWC, the land to be acquired for the project was initially assessed as 1,35,043 acres⁴¹. However, during the 2nd RCE (2017-18 PL), it was increased to 1,79,770 acres⁴². As per 2nd RCC report, the estimated cost of LA was increased from ₹1,153.78 crore at 2005-06 PL to ₹13,077.15 crore at 2017-18 PL.

The main reason for increase in cost of Land Acquisition was due to introduction of RFCTLARR Act, 2013, land requirement of 6,158 acres for distributary network which was not included in 1st RCE and due to non-consideration of extent of encroached government land and assigned land for which 'Land-to-land' is to be provided as per RFCTLARR Act, 2013. Out of the total required land of 1,79,770 acres, requisitions were filed with Land Acquisition officers (LAOs) for an extent of 1,67,765 acres⁴³ and 1,13,119 acres was acquired at a cost of

³⁹ in RMC all the works were completed except for canal lining of 12.95 Km and 41 structures

⁴⁰ from Central Electricity Authority

⁴¹ Patta Land: 95,971.54 acres; Forest Land: 9,219.60 acres and Poramboke Land: 29,852 acres

⁴² Patta Land (includes encroached government land, D-Patta and Patta): 1,55,464.85 acres; Forest Land: 8,727.27 acres and Poramboke (Government) Land: 15,578 acres

⁴³ the difference of 388.77 acres (54,646.06 acres – 54,257.29 acres) need to be reconciled by LA Authorities with Engineering Department

₹5,457 crore. The balance extent of land of 54,248.45 acres needs to be acquired at a cost of ₹6,639.55 crore. Further, delay in acquisition of land would increase the financial burden on the exchequer (*a detailed discussion on Land Acquisition is featured in Chapter V*).

2.2.3 Status of Rehabilitation & Resettlement

Rehabilitation & Resettlement (R&R) cost includes various items *viz.*, construction of houses for PDFs, compensation for submerged houses, R&R benefits and development of infrastructure facilities in R&R colonies. As per the original estimate (2005-06), 44,574 PDFs were to be re-habilitated at an estimated cost of ₹744.60 crore which was increased to ₹20,091.09 crore (2017-18 RCE) for 1,06,006 PDFs (56,495 are tribal families). However, as of March 2023, only a total of 11,677 PDFs (11 *per cent* of the total PDFs) were rehabilitated.

The increase in PDFs was mainly due to the identification of additional⁴⁴ habitations below the Full Reservoir Level. Various factors *viz.*, increase in the number of PDFs, delayed Land Acquisition for R&R colonies and land-to-land transfer for agricultural land acquired, delayed payment of R&R cash compensation led to an increase in project cost (*a detailed discussion on R&R is made in Chapter VI*).

2.3 Environmental Aspects

The implementation of any irrigation project helps in upliftment of general prosperity in the region, however, there are bound to be some adverse environmental and ecological effects which should be mitigated through suitable remedial measures. Proper Environmental Management Plan needs to be evolved to reduce the impact on the environment and anticipate the possible adverse impacts. This will help to incorporate adequate control measures on the adverse effects from the project planning phase to various other stages of development, such as implementation and management to accrue optimum benefits from the project.

2.3.1 Non-compliance to conditions stipulated by Ministry of Environment & Forest

The Ministry of Environment and Forests (MoEF), Government of India while according approval for diversion of 3,731.07 hectares of forest land for execution of PIP had stipulated (July 2010) 32 conditions⁴⁵ for compliance. Out of the 32 conditions, the following two conditions were verified in Audit.

- a) The user agency shall demarcate on ground the forest area diverted at the project cost using four feet high Reinforced Cement Concrete pillars, with each pillar inscribed with the serial number, forward and backward bearing and with distance between two adjacent pillars.
- b) Planting of native tree species shall be undertaken on vacant land along the reservoirs and canals.

Audit noticed that based on SSR 2010-11, an amount of ₹45.30 lakh was technically sanctioned for construction of Reinforced Cement Concrete pillars under PIP Headworks. However, the work was not taken up. Subsequently, a revised estimate based on SSR 2021-22 was prepared

⁴⁴ 268 habitations in DPR 2005 increased to 373 habitations as of March 2023

⁴⁵ implementation of Catchment Area Treatment Plan, to identify non-forest land for compensatory afforestation, demarcation of forest area with Reinforced Cement Concrete pillars, *etc.*

(April 2021) for ₹85.20 lakh⁴⁶ for “Supply and fixing of pre-cast Reinforced Cement Concrete pillars to demarcate forest boundaries”.

In respect of LMC works, though an estimate (₹4.93 lakh) was prepared for 168 Reinforced Cement Concrete pillars, the work was yet to be taken up by the Department. In RMC works costing ₹5.90 lakh, out of 104 Reinforced Cement Concrete pillars, the Department had erected only 29 Reinforced Cement Concrete pillars so far and the remaining 75 Reinforced Cement Concrete pillars were yet to be taken up. However, there was nothing on record to show that demarcation of forest land was done at Headworks area. Further, the Department had planted 19,981 plants (LMC: 4,388 and RMC:15,593) out of the targeted 73,788 plants (LMC: 39,397 and RMC: 34,391).

Non-compliance with conditions stipulated by MoEF may result in levy of penalty or stoppage of works which would lead to delay in completion of canal works.

The Government replied (June 2024) that due importance would be given to the compliance conditions stipulated by MoEF for demarcation of forest land used in the project and for plantation of native trees.

As most of the canal excavation is completed, except for a few stretches in LMC, the Department should have given due importance to the stipulated guidelines of MoEF and expedited demarcation of forest land and plantation with native species.

2.3.2 Construction of protective embankments in neighbouring States

On completion of PIP, the backwaters of the reservoir would spread into parts of Telangana, Chhattisgarh and Odisha States also. Due to the backwaters of the project, 12 villages would be submerged⁴⁷, displacing 3,337 Project Affected Families (PAFs) in the States of Chhattisgarh and Odisha, if no mitigative measures were undertaken.

The States of Andhra Pradesh, Chhattisgarh (erstwhile part of Madhya Pradesh State) and Odisha entered (April 1980) into an agreement for resolving the submergence aspects of PIP. As per provisions of agreement, to avoid submergence of land and to protect the interests of tribal people, GoAP proposed (1978⁴⁸/1980⁴⁹) protective embankments with adequate drainage sluices for a length of 30 Km along Sileru and Sabari Rivers in Odisha and for a length of 29.12 Km along the Sabari River in Chhattisgarh at a cost of ₹278.40 crore in the DPR 2005-06 (₹710.99 crore at 2017-18 PL).

Aggrieved by the decision of MoEF to accord stage-I environmental clearance to the PIP, the Government of Odisha filed a ‘Original Suit’ (OS No. 4 of 2007) in the Supreme Court. An Expert Appraisal Committee (EAC) of MoEF directed (March 2009) the project proponent to initiate action for conduct of public hearing in the States of Odisha and Chhattisgarh for embankment proposal and report back to the Committee. The MoEF stated⁵⁰ (February 2011) that the changes proposed (November 2010) by the Project Proponent while seeking (in 2005)

⁴⁶ for demarcation of Forest land used for Headworks: ₹78.86 lakh, LMC: ₹4.93 lakh, RMC: ₹5.90 lakh

⁴⁷ Chhattisgarh: four villages displacing 2,335 PAFs containing 11,766 persons; Odisha: eight villages displacing 1,002 PAFs containing 6,316 persons

⁴⁸ tripartite agreement between the erstwhile States of Andhra Pradesh & Madhya Pradesh and Odisha

⁴⁹ proposed by GoAP as indicated vide Clause VI of GWDT award

⁵⁰ letter No. J-12011/8/09-IA-1 dated 08.02.2011

Environmental Clearance shall be reviewed by EAC for River Valley and Hydro Power Projects. Until the matter was reviewed upon, MoEF ordered (February 2011) to ‘stop work’. Further, the Governments of Chattisgarh (OS No. 3 of 2011) and Telangana (OS No. 1 of 2019) have also filed cases against the environmental aspects and submergence aspects of the project with the Hon’ble Supreme Court.

The Principal Secretary (Projects), GoAP, replied⁵¹ (March 2011) to MoEF that there was no change in the scope of PIP for which Environmental Clearance was accorded (2005) by MoEF. It was further stated that GoAP had approached appropriate authorities in Odisha and Chhattisgarh for conduct of public hearings for construction of protective embankments on Sabari and Sileru Rivers to prevent submergence in the respective States. However, Pollution Control Boards of both the States have not conducted the public hearings.

The stop work order was kept in abeyance⁵² (February 2013) by MoEF, initially for a period of six months and was continued (order dated February 2022) till July 2023. The court cases filed by the three affected States are still pending with the Hon’ble Supreme Court.

Audit noticed that as per the construction programme given in the latest DPR (2017), the construction of protective embankment should be commenced from 8th year (*i.e.*, 2011-12 as the works commenced in 2004) and to be completed by 11th year (2014-15). However, construction of protective embankment was not yet commenced by the Department.

During the Exit Conference, the Government stated (November 2024) that the issue was taken-up with both the States in presence of CWC, however, there was no response, and the States are not honouring the earlier agreements and the GWDT award. As GoI is planning to fund the project in two Phases, there wouldn't be any submergence issue to impound water upto (+) 41.15 m (Phase-I level). It was also replied that the Government is hopeful of resolving the issue prior to completion of Phase-I.

Though PIP was scheduled to be completed by March 2026, there is no progress in construction of embankment as the issue of environmental clearance and submergence aspects are yet to be cleared in the Hon’ble Supreme Court. Unless the States of Chattisgarh and Odisha undertake public hearing, embankment work cannot be commenced and as a result the project cannot be put to use to its full capacity.

Recommendation 2.3: The State Government, in consultation with PPA, should address the submergence issues with the respective States and ensure timely construction of protective embankments to prevent submergence in those States.

2.3.3 Implementation of Lift Schemes without statutory approval

As per the Guidelines of Central Water Commission (CWC) for Submission, Appraisal and Clearance of Irrigation and Multipurpose Projects, 2010, for any project which has Inter-State ramification, a preliminary report is to be sent to CWC for appraisal. If the project is found feasible, CWC conveys ‘in principle’ consent for preparation of Detailed Project Report. Further, Section 84 (3) (ii) of the Andhra Pradesh State Re-organisation Act, 2014 mandated that before taking up of any new project on Krishna or Godavari Rivers, CWC approval is to

⁵¹ letter No. 31267/Maj. Irr. I (2)/2006 dated 04.03.2011

⁵² D.O. No. J-12011/8/2009-IA-1 dated 27.02.2013

be obtained. Further, as per the Environmental Impact Assessment (EIA) Rules, 2006, environmental clearance shall be obtained for new irrigation projects.

Anticipating the delay in completion of PIP and to harness the early benefits of RMC and LMC flood water of River Godavari, Lift Irrigation schemes, viz., Pattiseema Lift Scheme (for RMC) and Purushothapatnam Lift Irrigation Scheme (for LMC) were proposed by GoAP during January 2015.

Pattiseema Lift Scheme (PLIS) was proposed (administrative sanction⁵³ given in January 2015) near Bangarammapeta (V), Polavaram (M) of West Godavari District at a cost of ₹1,300.00 crore. The work was commenced (March 2015) and commissioned in March 2016 by incurring a total expenditure of ₹2,079.94 crore out of GoAP funds.

Similarly, 'Purushothapatnam Lift Irrigation Scheme' (PuLIS) was proposed (administrative sanction given in October 2016) near Purushothapatnam (V), Seethanagaram (M) of East Godavari District at a cost of ₹1,638.00 crore. The objective of the scheme was to discharge water of 140 cusecs from PIPLMC⁵⁴ to Yeleru Reservoir and to supplement water to the ayacut under Yeleru Reservoir besides domestic and industrial use as a part of water grid. The work was commenced (January 2017) and completed by July 2018 by incurring an expenditure of ₹1,189.23 crore out of GoAP funds.

Audit noticed that:

- As Godavari and Krishna are Inter-State Rivers, it was mandated under Section 84 (3) (ii) of Andhra Pradesh State Re-organisation Act, 2014 to obtain CWC approval for new project. However, CWC approval along with Environmental Clearance was not obtained for both the Lift Schemes and also the Environmental Clearance of PIP was not amended duly including these projects.
- The Hon'ble National Green Tribunal⁵⁵ (NGT), opined (2018) that Environmental Clearance was necessary for both the Lift Schemes and stated that non-obtaining of prior permission from the competent authorities amounts to violation of EIA Notification 2006 and amendments thereto. Further, NGT directed Central Pollution Control Board (CPCB), Andhra Pradesh Pollution Control Board (APPCB), State Environment Impact Assessment Authority and District Magistrate to furnish a report determining the extent of damage caused and the amount of compensation liable to be paid to the affected persons, within six months.

In this regard, MoEF&CC⁵⁶ issued (July 2019) a show cause notice to State Government highlighting violation of EIA Notification 2006 and amendments made thereof in construction of the project. Further, it was directed (July 2019) to stop all activities related to PLIS immediately. The Hon'ble Supreme Court also stated that there was no reason to interfere with the impugned order by NGT and dismissed the Civil Appeal⁵⁷ filed (March 2020) by WRD, GoAP.

⁵³ G.O. Ms. No.1, Irrigation, CAD (Proj. I. A2) Department, dated 01.01.2015

⁵⁴ Polavaram Irrigation Project Left Main Canal

⁵⁵ based on the application of Jammula Choudhariaiah in OA No.175/2018 and OA No.350/2018

⁵⁶ Ministry of Environment Forest and Climate Change

⁵⁷ OA No.175/2018 and OA No.350/2018 vide Dairy Nos. 25965/2020 and 28292/2020

The Committee formed by NGT visited (December 2020) the schemes and submitted a detailed report with its recommendations. As per the recommendations, the Hon'ble NGT ordered (December 2021) that the project proponents have acted vehemently illegally and in total disregard of environmental laws. It was further ordered that the Project Proponent of PLIS and PuLIS pay an environmental compensation of ₹24.90 crore and ₹24.56 crore respectively towards environmental damages to APPCB. The Hon'ble NGT also ordered the Project Proponents of PIP to pay a sum of ₹120.08 crore to APPCB. The GoAP has filed civil appeal against the Hon'ble NGT orders in the Hon'ble Supreme Court. As per the interim orders of the Hon'ble Supreme Court, GoAP deposited (March 2023) ₹2.48 crore in respect of PuLIS and ₹1.90 crore for PLIS to the APPCB towards environment compensation as suggested by the NGT committee.

During the Exit Conference, the Government stated (November 2024) that the Schemes were primarily planned for drinking water purpose only and the proposal was addressed to CWC. The CWC did not consider the proposal as drinking water is not in the purview of CWC. To reap early benefits of PIP by using the readily available canals, these were contemplated and there is no component of irrigation in both the schemes. The NGT construed both the schemes as part of PIP and levied a huge penalty. The GoAP has approached Hon'ble Supreme Court (March 2022), and the verdict of Hon'ble Supreme Court is awaited. Meanwhile, the penalty as approved by the committee appointed for the purpose was paid.

The reply is not acceptable, as the NGT while levying penalty considered both the projects as new ones and not as part of PIP. Further, the Administrative Approval accorded by the GoAP for PuLIS clearly states that the scheme is contemplated for irrigation purpose. Thus, due to not obtaining prior approvals from competent authorities and disregard to environmental stipulations, the Government was forced to pay environmental compensation.

Recommendation 2.4: The State Government should be vigilant to avoid violation of environmental laws and obtain all mandatory environmental and ecological clearances prior to commencement of work, necessitating such clearances.

2.3.4 Non-maintenance of environmental and ecological balance

Conditions⁵⁸ of agreements concluded with contract agencies⁵⁹ for execution of Main Dam and hydro-electric Powerhouse works stipulate that the contract agencies are responsible for maintaining the environmental ecological balance at their own cost and all such costs shall be deemed to have been included in the unit rates and prices included in the contract. The contract agencies shall design construction and operation duly preventing destruction, scarring, or defacing of the natural surroundings in the vicinity of the work. Further, agreement conditions clearly stipulate that any operations carried out by the Engineer-in-Charge for rectification/ make good of any lapses in maintaining the ecological balance by the contract agencies should be done at the cost of the contract agencies.

⁵⁸ clauses 89 & 90 of agreement No.01/2012-13 and clauses 63 & 64 of agreement No. 01/2017-18

⁵⁹ first contract agency (work awarded in March 2013): M/s TRANSSTROY-JSC EC UES (JV), second contract agency (work awarded in February 2018): M/s Navayuga Engineering Company Limited and third contract agency (work awarded in November 2019): M/s Megha Engineering Infrastructure Limited

Scrutiny of records revealed that a Court case (OA 309/2015) was filed with NGT by an individual⁶⁰ against large scale dumping of muck near residential areas of Mulalanka Village. The Hon'ble NGT directed (August 2015) APPCB, GoAP and PPA to conduct joint inspection and issue appropriate directions in the interest of environment and ecology. However, no action was taken on the direction of Hon'ble NGT. Meanwhile, WRD acquired (July 2016) land measuring 203.74 acres for dumping waste and muck at Mulalanka Village arising out of construction activity of PIP.

Aggrieved by the inaction of GoAP to earlier writ petition, the individual again approached (OA 66/2017) NGT and the Hon'ble NGT constituted (March 2017) a joint inspection team of MoEF&CC and representative of CPCB, directing them to visit the project site and submit a detailed report. Consequently, the joint inspection team conducted site visit (April 2017), held discussions (April/May 2017) with Project Authorities of Polavaram Project and submitted (May 2017) report, along with affidavit. The NGT directed GoAP and representative of MoEF&CC to examine the entire issue after hearing the applicant and pass an appropriate order.

The applicant had again raised (October 2018) grievance with NGT stating that no action was taken by the authorities concerned. The Hon'ble NGT constituted a four-member Committee⁶¹. Based on the report submitted by the Committee, the Hon'ble NGT directed PPA to take necessary steps and submit compliance report through nodal agency, *i.e.*, APPCB.

In compliance to suggestions made by the Hon'ble NGT, WRD has initiated corrective measure in September 2021 for disposal of Muck in the dump areas and entrusted the work⁶² to the existing contract agency⁶³ (Main dam work entrusted in November 2019) for ₹13.93 crore. The entire work was completed, and final payment⁶⁴ was made (July 2022) to the contract agency.

Audit noticed that the muck was dumped by the first and second contract agencies and the work of proper disposal/ layering of muck was done by third contract agency at additional cost. The responsibility of removal of spilled muck lies with the first and second contract agencies at their cost as per terms of agreement.

Due to non-enforcing agreement conditions by the Department against the earlier contract agencies to maintain the environmental and ecological balance, avoidable extra expenditure was necessitated for rectification works at a cost of ₹13.93 crore.

Further, Audit also noticed an instance wherein the Executive Engineer (EE) addressed (in August 2018) the second contract agency⁶⁵ to remove the muck slipped into Kadem Sluice drain at Mulalanka dumping yard, so as to have free flow of drain water into river Godavari and to avoid the inundation of land in Mulalanka Village. Further, EE directed the contract

⁶⁰ Dr. Pentapati Pulla Rao

⁶¹ comprising (a) representative of CPCB; (b) Additional Principal Chief Conservator of Forest; (c) APPCB and (d) District Collector and Magistrate, West Godavari District, Andhra Pradesh

⁶² dozing, spreading and levelling the excavated material at the dump site in layers including cost of all materials machinery, labour, all operations such as spreading in layers, *etc.*, complete in line with the directions of Hon'ble NGT

⁶³ M/s Megha Engineering Infrastructure Limited

⁶⁴ bill No.LS 24th & Part dated 20.07.2022

⁶⁵ M/s Navayuga Engineering Company Limited

agency to take utmost care for protection of existing streams, drains, roads, *etc.* However, no action was taken by the contract agency.

The Government replied (June 2024) that the excavated material is being dumped at a height up to 25 m to 30 m from the existing ground level, for effective utilisation of the available limited dump area. The excavated material is of very huge quantity of which soil is about 317.03 lakh cum and 389.88 lakh cum of rock, which requires a lot of land. As acquisition of land involves a huge task, the muck has been dumped by spreading in layers and leveling in each layer by use of machinery at the site, duly complying with the suggestions made by the Committee constituted by Hon'ble NGT, and recommendations of six members committee.

During the Exit Conference, the Government stated (November 2024) that earlier contractor has dumped the muck at the Mulalanka dumping ground as per the terms of the contract and sloping to the dumped muck was not in the purview of the contract. As per the directions of the Expert Committee appointed by Hon'ble NGT, sloping to the dumped muck and watering was done. Also, the GoI has formally agreed to reimburse the expenditure incurred towards levelling / stabilisation of the dumping ground.

The reply is not acceptable. The additional expenditure was necessitated for the above work as per the directions of NGT for scientific disposal of muck which was not done previously by the earlier contract agencies in line with the agreement conditions. The amount remained unrecovered from the contract agencies⁶⁶ who failed to comply with the agreement conditions.

⁶⁶ first contract agency: M/s TRANSSTROY-JSC EC UES (JV), second contract agency: M/s Navayuga Engineering Company Limited