

Executive Summary

The economy of Uttar Pradesh is based mainly on agriculture and about 65 *per cent* of the total population is dependent on agriculture. Sustainable development of agriculture is, therefore, of utmost importance for the overall development of the State. Out of total 240.93 lakh hectare area of the State, 187.75 lakh hectare (78 *per cent*) is agricultural land, of which 143.89 lakh hectare (77 *per cent*) is the net irrigated area. However, canal irrigation is provided in only 17 *per cent* of net irrigated area through 75,466 km canal network. Irrigation and Water Resources Department is responsible for construction, operation and maintenance of the canal network in the State.

The Performance Audit of Outcomes in Surface Irrigation of Bansagar Canal Project and Modernisation of Chaudhary Charan Singh Lahchura Dam Project (Lahchura dam project) covering period from April 2014 to March 2021 was conducted to assess the efficiency and effectiveness of the two canal projects. This report aims at identifying the areas that require systemic corrections and improvements.

Bansagar Canal Project envisaged construction of canal systems in Uttar Pradesh to utilise 34,008 million cubic feet (mcft) water from Bansagar dam with the objective to increase irrigation intensity of existing nine canal systems from 85 *per cent* to 150 *per cent* in the Culturable Command Area (CCA) of 2.32 lakh hectare in Prayagraj and Mirzapur districts after commissioning of BCP. The project was approved by the Central Water Commission in January 1994 at an estimated cost of ₹ 330.19 crore. However, further progress of the project remained slow due to which scheduled date of completion in the year 2004 was revised four times with consequential impact on time and cost overrun and the project was commissioned in July 2018. The State Government incurred expenditure of ₹ 3,419.37 crore on BCP during 1996-97 to 2020-21.

Lahchura Dam provides water to Dhasan Canal System having CCA of 97,169 hectare area in Mahoba and Hamirpur districts. Lahchura Dam apart from its own storage receives water from Pahari Dam. The structures of both Lahchura and Pahari Dams had become old and outdated due to which the existing falling shutters arrangement for controlling the flow of water was creating operational problem during monsoon season. Lahchura Dam project was approved in February 1979 at an estimated cost of ₹ 7.04 crore and connected Pahari Dam project was approved in February 2008 at the estimated cost of ₹ 76.68 crore. Due to slow progress of works, the Lahchura Dam Project and Pahari Dam Project were completed in March 2015 and March 2018 respectively. The State Government incurred expenditure of ₹ 328.30 crore during 1978-79 to 2014-15 on Lahchura Dam Project and ₹ 354.20 crore during 2009-10 to 2017-18 on Pahari Dam Project.

Audit noticed that though the Government spent huge amounts (BCP: ₹ 3,419.37 crore during 1996-97 to 2020-21; Lahchura and Pahari Dam Projects: ₹ 682.50

crore during 1978-79 to 2017-18) in both the projects, the outcomes of the projects, viz., augmentation of water availability in canal network, creation of additional irrigation intensity and change in cropping pattern remained largely unachieved due to deficient planning for remodeling of existing canal systems, insufficient storage capacity of dams, inadequate supply of water in canals and consequently non-operation of canals for full cropping period.

Bansagar Project is a joint venture of the three States, viz., Bihar, Madhya Pradesh and Uttar Pradesh under which Bansagar Dam was constructed at river Sone in Madhya Pradesh. As per the agreement executed (September 1973) between the three States, Uttar Pradesh is entitled to utilise 1.0 million acre feet (*i.e.*, 43,560 mcft) water from Bansagar reservoir. Bansagar Canal Project, Uttar Pradesh (BCP), which has been executed by the Government of Uttar Pradesh, envisaged construction of canals systems in Uttar Pradesh to utilise 34,008 mcft of water from Bansagar dam. However, even after commissioning of the project in July 2018, BCP authorities placed demand for 5,782 mcft (17 *per cent*) to 16,476 (48 *per cent*) water from Madhya Pradesh as against target to provide 34,008 mcft additional water to the existing nine canal systems under BCP. The reason for less demand of water could not be ascertained in Audit. Further, BCP was not even getting the lesser demanded quantity of water from Bansagar reservoir. It led to supply of only 1,680 mcft (five *per cent*) to 2,921 mcft (nine *per cent*) water to canal network under BCP and consequent short supply of water to field and non-operation of canals for full cropping period. As a result, the target of creation of additional irrigation intensity remained unachieved with shortfalls of 44 to 45 *per cent* in Rabi and 32 to 33 *per cent* in Kharif seasons even after spending ₹ 3,419.37 crore on BCP.

Similarly, there was short supply of water to Dhasan canal system in Lahchura Dam project because of inadequate water storage capacity of dams. As a result of short supply of water, canals were operated in shorter duration. The canal irrigation in Kharif was provided in only 455 hectare to 2,153 hectare (3 to 15 *per cent*) against the target of 14,575 hectare, though there was improvement in irrigation during Rabi season.

Both the selected irrigation projects, BCP and Lahchura Dam Project, had significant issues in planning and execution. In BCP, issues like current availability of water in the canal systems, capacity enhancement of existing canal systems, were either not addressed or inadequate provisions were made in the DPRs due to which envisaged objective of enhancing irrigation intensity of the canal could not be achieved. The scope of project of modernisation of Lahchura and Pahari Dam Projects were limited to replacing the old structures of the dams. Insufficient water storage capacity of Lahchura and Pahari Dam was not addressed, as a result, the project would not be able to provide canal irrigation in the entire command area of 97,169 hectare.

Scope of the construction works in both the projects could not be firmed up and kept changing during the course of execution of works. Due to this, the projects could be completed with a delay of more than 14 years (BCP) and six years (Lahchura Dam Project) along with huge cost overrun. Serious lapses in the

contract management were noticed. In BCP, the provision of cost escalation in labour, petroleum, oil & lubricant and material was included belatedly, after NIT and technical bid evaluation. Ineligible contractors were awarded works in Lahchura Dam project. In the execution of works, irregularities such as unjustified payment of price adjustment, irregular grant of interest free advances to contractors, unauthorised sanction of variations in the quantities of the contract, grant of time extension without proper justifications, inadequate quality control, etc., were also noticed. The envisaged connectivity between canals was also not achieved. The canal networks were not maintained regularly.

Convergence efforts impacting the outcomes were also not adequate as there were short/delayed supply of certified seeds from the Government seed stores and inadequate soil testing in the selected villages. Command area of the canal systems was also not developed, restricting the utilisation of created irrigation intensity.

Recommendation 1: *The State Government should carry out study to explore the feasibility for enhancement of the storage capacity of Lahchura Dam and Pahari Dam so as to store adequate water from the river Dhasan.*

Recommendation 2: *The State Government should take up remodeling/restoration work in canals under nine canal systems of Bansagar Canal Project and Dhasan Canal System in an efficient and effective way.*

Recommendation 3: *The State Government should investigate the matter of defective surveys and faulty assessment of requirements of the projects and fix responsibility of erring officers;*

Recommendation 4: *There is an urgent need of formulating effective mechanism for stringent monitoring of irrigation projects for timely completion. Series of delays needs to be looked into and remedial measures may be taken to ensure competence of contractor, penalty for delays and timelines in contract conditions for future projects.*

Recommendation 5: *The State Government should improve competitiveness of the tendering process through fair and transparent contract conditions and wide publication of tender notices and remove deficiencies in preparation of detailed estimates.*

Recommendation 6: *The State Government may review the basis for providing percentage weightage for price adjustment of labour and petrol, oil and lubricants in Bansagar Canal Project and take appropriate action against erring officers for arbitrary fixation of the percentage weightage without ascertaining their actual usages.*

Recommendation 7: *The State Government should ensure strict adherence to the Government orders and instructions regarding grant of time extension, approval of cost variations and extra items. Department may take appropriate action against the officials who flouted the provisions of Government instructions.*

Recommendation 8: *Since the Bansagar Canal Project has been completed without providing envisaged connectivity between canals, the State Government*

should assess the lapses in this area through a comprehensive review, fix responsibility and take corrective actions.

Recommendation 9: *There is an urgent need to identify and address the bottlenecks in the envisaged supply of water from Bansagar dam and further distribution of water to the connected canal systems. The State Government should assess and undertake such work in a time bound and coordinated manner in order to utilise the potential created optimally.*

Recommendation 10: *The State Government should conduct proper investigation to ascertain the circumstances due to which the irrigation facility could not be expanded in the command area of 97,169 hectare in Dhasan Canal System.*

Recommendation 11: *The State Government should ensure proper coordination between Agriculture Department and Irrigation and Water Resources Department to ensure optimum utilisation of available water, timely and adequate delivery of agricultural inputs to the farmers to promote adoption of suitable cropping pattern and consequential higher productivity and production in the crops. In future projects, we recommend that the DPR should contain a convergence plan involving all the stakeholder departments so as to develop the command area in an integrated manner.*

Recommendation 12: *The State Government should take action for the formation of Water User Association on priority basis so that canal systems can be operated efficiently with community participation.*