

CHAPTER II PERFORMANCE AUDIT

ENVIRONMENT AND FORESTS DEPARTMENT

2 Tamil Nadu Biodiversity Conservation and Greening Project

Executive Summary

Introduction

Tamil Nadu Biodiversity Conservation and Greening Project is being implemented by the Government of Tamil Nadu with loan assistance of ₹ 469.60 crore from Japan International Co-operation Agency, on reimbursement basis, commencing from 2011-12 for a period of eight years. The objectives of the project were strengthening Biodiversity Conservation by improving ecosystem and the management capacity; undertaking tree plantation outside the forest areas in the private lands to attain adequate green cover besides bridging the gap between supply and demand of wood and contributing to environmental conservation and harmonised socio-economic development of Tamil Nadu.

Planning

Department failed to complete the preparatory phase work of preparation of action plans, surveys, baseline geo coded data of land distribution and local specific flora for conservation of biodiversity indicating inadequate planning.

Financial Management

Failure of the Government to sanction the agreed funds, non-utilisation of State share of ₹ 87.18 crore towards establishment charges, parking of Government funds of ₹ 49.35 crore outside the Government account indicated imprudent financial management.

Programme Management

Absence of sanction for removal of invasive alien species in the identified areas and its partial removal, inadequate collection and hatching of eggs, non-supply of turtle excluder device and non-monitoring of climate change indicated ineffective biodiversity conservation. Selection of plantations based on beneficiary preference instead of field investigation for tree cultivation in private lands and failure to ensure survival of the planted saplings resulted in non-achievement of the green cover to an extent of 19,044 ha. Department did not ensure adequate community development and income generation activities for tribal people in implementing eco-developmental activities.

Monitoring

Absence of adequate manpower, shortcomings in web based monitoring and internal control impacted the objective of strengthening biodiversity conservation and enhancing green cover in the State.

2.1 Introduction

Tamil Nadu Biodiversity Conservation and Greening Project (TBGP) is being implemented by the Government of Tamil Nadu (GoTN) with loan assistance of ₹ 469.60 crore from Japan International Co-operation Agency (JICA), on reimbursement basis, commencing from 2011-12 for a period of eight years. The objectives of project were strengthening Biodiversity Conservation by improving ecosystem and the management capacity; undertaking tree plantation outside the forest areas in the private lands to attain adequate green cover besides bridging the gap between supply and demand of wood and contributing to environmental conservation and harmonised socio-economic development of Tamil Nadu. The implementation and funding pattern of the project components were finalised (October 2010) by the Environment and Forests Department, GoTN and JICA and the agreement was executed in February 2011.

2.2 Organisational setup

Principal Secretary to Government is the administrative head of the Environment and Forests Department at Government level. The project was implemented by Project Management Unit (PMU), an autonomous society, headed by Chief Project Director (CPD) with the funds released by GoTN through budget and subsequently reimbursed from JICA. PMU finalised the annual plan and consolidated project proposals and placed them before the High Level Empowered Committee⁵ (HLEC) for approval. The project is implemented in the districts by Divisional Management Units (DMUs) which are headed by the Divisional Forest Officers and Field Management Units (FMUs) headed by Forest Range Officers.

2.3 Audit Objectives

Performance Audit was conducted to assess whether:

- Planning for strengthening Biodiversity conservation and enhancement of green cover was effective and was in accordance with the guidelines of the project;
- Financial Management ensured adequate and timely availability of funds and their effective and economic utilisation;
- Project was implemented economically, efficiently and effectively as envisaged in the guidelines besides achievement of the intended objectives; and
- Internal control, monitoring and evaluation was adequate.

⁵ The Committee functioned with Chief Secretary to Government as Chairperson; Chief Project Director as Member Secretary besides eight members representing Environment and Forests, Finance, Planning and Development, Revenue, Rural Development and Panchayat Raj and Tribal Welfare Departments besides Principal Chief Conservators of Forests.

2.4 Audit Criteria

Audit criteria were sourced from:

- The Biological Diversity Act, 2002 and Rules thereunder issued by GOI;
- Five Year Plan documents for the period from 2012-13 to 2016-17;
- Annual Plan of Operations approved by HLEC;
- Terms and Conditions of the loan agreement with the funding agency;
- Operational manual for the project approved by the Government of Tamil Nadu;
- Consultants' Reports and Field Manuals on the components of the project;
- State/District Micro Plan Manuals and Village Micro Plans; and
- State General Financial and Accounting Rules/Procedures and Tamil Nadu Forest Code/procedure.

2.5 Scope and Methodology of Audit

The implementation of TBGP involved execution of four major components⁶ in 32 districts covering all the seven Agro Climatic Zones⁷ of the State. Performance Audit was conducted from April to September 2017 and covered test check of eight⁸ out of 32 districts for the period 2012-13 to 2016-17. These districts were selected on the basis of stratified sampling method⁹ to cover 33 *per cent* of the total expenditure. The audit process included scrutiny of records at Government Secretariat, Head of Forest Department and the Office of the Chief Project Director. In order to assess the field level implementation, 33 *per cent* of the expenditure of the selected Ranges (34 out of 139 Ranges) were test checked. The National Parks, Bird and Wild Life Sanctuaries and Conservation reserves available in the selected districts were also covered. Audit scope, coverage and methodology were discussed in the Entry Conference with the Principal Secretary to Government, Environment and Forests Department held on 25 April 2017. Audit findings were also discussed with Principal Secretary to Government, Environment and Forests Department in the Exit Conference held on 20 October 2017 and their views were considered while finalising the report. We acknowledge the co-operation extended by Office of the Chief Project Director and other field offices in providing necessary records and information.

⁶ Biodiversity conservation, increasing the Natural Resource Base, Capacity development and Consulting services.

⁷ Agro Climatic Zones *viz.*, Cauvery Delta, High Rainfall, Hilly, North Eastern, North Western, Southern and Western Zones were classified based on soil characteristics, rainfall distribution, irrigation pattern and cropping pattern.

⁸ Coimbatore, Cuddalore, Dharmapuri, Dindigul, Kanyakumari, Nagapattinam, Nilgiris and Tirunelveli.

⁹ The stratification was made on the basis of expenditure incurred by the districts to the total expenditure besides covering all the seven Agro Climatic Zones.

Audit Findings

2.6 Planning

2.6.1 Absence of State Forest Policy

The National Forest Commission recommended (March 2006) framing of State Forest Policy in line with National Forest Policy, 1988 for sustainable management of forest and wildlife resources. A comment was made in the CAG's Audit Report for the year ending March 2015 about the delay in finalisation of the draft Forest Policy prepared in December 2014. Even after lapse of three years, the draft Forest Policy was not finalised till date (December 2017).

Failure to evolve State Forest Policy resulted in inadequate planning in enhancement of green cover and protection of forest lands against encroachments as discussed in the subsequent paragraphs.

Government replied (November 2017) that the draft Forest Policy was being consulted with the stakeholders and would be finalised shortly. The fact however, remains that the policy is pending finalisation for three years despite commented upon in the earlier Audit Report.

2.6.2 Delay in preparation of Annual Plan of Operation

The project envisaged that the preparatory phase was fundamental to implementation phase to ensure maximum impact of the project intervention. It was emphasised to form Project Management Unit and to identify its members by January 2011 as the delay in its formation would affect the implementation of the project. Operational Manual of the project contemplated preparation of the Annual Plan of Operation and budgetary allocations by the Executive Body under the charge of Chief Project Director for approval by the HLEC for release of funds by GoTN.

The Project Management Unit was formed in July 2011, after a delay of six months leading to consequential delay in formation of Executive Body (July 2011).

The details of preparation of the Annual Plan, approval by HLEC and sanction of funds by GoTN were as detailed in **Table No. 2.1**.

Table No. 2.1: Details of plan approvals and funds sanction

Year	Date of approval by Governing Body	Date of approval by HLEC	GoTN sanction	Date of receipt of funds by CPD
2012-13	16.04.2012	17.05.2012	27.07.2012	31.08.2012
2013-14	14.05.2013	08.06.2013	17.07.2013	04.09.2013
2014-15	13.05.2014	26.06.2014	27.08.2014	25.09.2014
2015-16	19.05.2015	09.06.2015	11.08.2015	25.09.2015
2016-17	11.05.2016	19.07.2016	20.09.2016	28.10.2016

(Source: Details furnished by PMU)

As may be seen from the above, the Annual Plans finalised by Governing Body were approved with a delay ranging from one to two months by HLEC leading to consequential delay in sanction and release of funds by GoTN for implementation of the project components. Non-utilisation of the released funds during the financial years is commented in **Paragraph No. 2.7.1** and this led to payment of commitment charges to the JICA as discussed in **Paragraph No. 2.7.2**.

Government replied (November 2017) that there was no abnormal delay and the Government orders were issued every year in August/September. It was also stated that important and time bound works were carried out in anticipation of the Government orders. The reply is not acceptable as there was delay of five to six months for release of funds and commencement of work in anticipation of the Government orders which was not authorised.

2.6.3 Delay in preparation of strategies and conservation action plans

The project emphasised the need for preparation of necessary guidelines, manuals, handbooks, assessments of biodiversity conservation during the preparatory phase (2011-12 and 2012-13) to enable early commencement of the implementation of the project. The implementation schedule of developing of Water Management Strategy and Action Plan, Development of Species Conservation Plan and Wetland Participatory Management Planning was to be completed by the year 2012-13.

We observed that funds were sanctioned (May 2013) for preparation of Wetland Participatory Management Planning for eight DMUs and Development of Water Management Strategy and Action Plan for 17 Protected Areas/ Reserve Forest Areas. The preparation of the Strategy and Action Plans commenced during 2013-14 and were completed belatedly from 2013-14 to 2014-15. Delay in preparation of action plans and management strategies resulted in delayed implementation of the project related to conservation of biodiversity in some cases as discussed in **Paragraph No. 2.8.1.3**.

Government replied (November 2017) that the delay was due to administrative reasons in identification and selection of Resource Organisations. The reply is not acceptable as the Department failed to complete the preparatory work as envisaged in the project.

2.6.4 Absence of baseline geo-coded data

The Forest Survey of India releases the forest density data once in two years. In order to capture forest density data on real time basis, it was envisaged to develop State Level Geographical Information System (GIS) database at the initial stages (September 2013) of the project to ascertain the spatial distribution of area under crop, current fallow lands¹⁰, other fallow lands and fallow lands exceeding five years and identifying potential villages for the implementation of the Tree Cultivation in Private Lands (TCPL). It was also envisaged to collect location specific geo-spatial database of endemic flora and fauna for conserving the Biodiversity of the State.

¹⁰ The lands which were not utilised for cultivation for one year.

It was seen that the Department did not develop State Level GIS database of land distribution and location specific database of endemic flora and fauna indicating inadequate planning in implementation of TCPL resulting in incorrect selection of villages for its implementation as detailed in **Paragraph No.2.8.2.**

Government accepted and stated (November 2017) that Geomatic Centre did not prepare or maintain any State Level GIS database of land distribution.

2.6.5 Non-adoption of Development Goal Indicator

Government of India was one of the signatories to the Sustainable Development Goals adopted in September 2015 by the United Nations and came into force from January 2016, envisaging 17 goals with 169 targets to be achieved by each Nation before 2020. Goal No 15, envisaged protection, restoration and promotion of sustainable use of terrestrial ecosystems, sustainable management of forests, combating desertification and halting and reversing land degradation as also biodiversity loss. TBGP project is being implemented in the State during the period from 2011-12 to 2018-19. Despite the requirement for implementation of the project for a further period of three years (2016-17 to 2018-19) from the date of enforcement of the Goal, PMU failed to propose mid-term revision for adoption of goals like enhancement of forest area as a proportion of total area, trafficking of protected species of flora and fauna, reduce the impact of invasive species on land and water ecosystems, etc. till date (December 2017).

Government replied (November 2017) that adoption of the Goal Indicator would be considered for future projects. The fact, however, remains that no efforts were made to revise the project in accordance with the international obligation.

2.6.6 Notification of Eco-Sensitive Zones

Based on the provisions of the Environment (Protection) Act, 1986 and Rules made thereunder, Government of India issued guidelines (2002) for notification of lands falling within 10 km of the boundaries of National Parks and Sanctuaries as Eco sensitive Zone (ESZ) for acting as a shock absorber to the Protected Areas and also as a transition zone. Considering the constraints expressed by the States, GOI modified the guidelines and notified (May 2005) the State Governments to consider the proposals of regulation based on the specific needs of the site. Hon'ble Supreme Court of India directed (December 2006) the States to comply with the modified guidelines and forward proposals to the Ministry within four weeks.

We observed from the scrutiny of records that GoTN notified only four Protected Areas in the State and forwarded proposals in respect of 12 Protected Areas to GOI during July and August 2017. The proposal for declaration of ESZ in respect of 21 Protected Areas which included seven test checked Protected Areas were yet to be prepared for submission to GoTN even after 15 years from the issue of guidelines (August 2017) indicating ineffective pursuance in conserving the biodiversity of the State despite directions from the Hon'ble Supreme Court of India.

Government accepted and stated (November 2017) that the proposals would be sent to GOI shortly.

2.7 Financial Management

Tamil Nadu Biodiversity and Greening Project was being implemented by GoTN with the total project cost of ₹ 686.28 crore. Out of the total project cost, ₹ 469.60 crore (68 *per cent*) was loan assistance of JICA received on reimbursement basis and ₹ 216.68 crore (32 *per cent*) was share of the State Government towards establishment charges of the field personnel in DMUs and FMUs. The period of loan assistance was eight years from 2011-12 to 2018-19 and the loan agreement envisaged payment of commitment charges by the State Government for unutilised sanctions. The funds required for implementation of the project were sanctioned by GoTN and disbursed to PMU for transfer to field offices. The establishment charges were borne directly through treasury system¹¹.

The details of funds available for implementation, funds sanctioned and expenditure incurred during the period 2011-12 to 2016-17 is detailed in Table No. 2.2.

Table No 2.2: Details of sanction and expenditure

Year	(₹ in crore)											
	Funds Available as per agreement			Amount sanctioned and released by GOTTN			Cumulative expenditure as of March 2017			Savings		
	P	E	Total	P	E	Total	P	E	Total	P	E	Total
2011-12	36.68	5.23	41.91	21.06	0.91	21.97	15.91	0.08	15.99	5.15	0.83	5.98
2012-13	60.24	5.90	66.14	65.38	2.96	68.34	59.62	1.52	61.14	5.76	1.44	7.20
2013-14	74.92	32.51	107.43	70.24	26.57	96.81	69.75	7.40	77.15	0.49	19.17	19.66
2014-15	97.54	33.62	131.16	82.78	32.18	114.96	68.58	12.77	81.35	14.20	19.41	33.61
2015-16	92.38	34.23	126.61	80.10	34.45	114.55	71.33	12.57	83.90	8.77	21.88	30.65
2016-17	54.55	34.31	88.86	63.44	36.93	100.37	48.46	12.48	60.94	14.98	24.45	39.43
Total	416.31	145.80	562.11	383.00	134.00	517.00	333.65	46.82	380.47	49.35	87.18	136.53

(Source: Details furnished by PMU)

(P: Project and E: Establishment)

From the above, we observed as under:

- GoTN failed to sanction ₹ 45.11 crore (eight *per cent* of the total project cost) during 2011-12 to 2016-17 despite agreement with JICA. This included ₹ 33.31 crore of loan assistance from JICA not utilised for the intended objectives of the project.
- Of the GoTN sanctioned amount of ₹ 517 crore, ₹ 380.47 crore (73 *per cent*) was utilised towards the project components and establishment charges and balance amount of ₹ 136.53 crore (26 *per cent*) was not utilised as of March 2017.
- The funds sanctioned by GoTN representing the loan assistance for the project was ₹ 383 crore. Of the same, PMU utilised ₹ 333.65 crore on the project during 2011-12 to 2016-17, leaving an unspent balance of ₹ 49.35 crore (13 *per cent*) which was parked outside the Government account, in the Nationalised Bank.

¹¹ The funds were to be borne by the Government of Tamil Nadu and the same would not pass through the accounts of the PMU.

- The project cost included establishment charges to be borne by GoTN towards deployment of 532 sanctioned staff and officers. Of the sanctioned strength, 205 posts (39 per cent) were operated and 327 posts were kept vacant. This resulted in utilisation of ₹ 46.82 crore during 2011-12 to 2016-17 towards establishment charges as against the sanctioned amount of ₹ 134 crore resulting in non-utilisation of ₹ 87.18 crore (65 per cent) sanctioned towards establishment charges issued by GoTN.

Government replied (November 2017) that the unutilised balances were kept in short term fixed deposits for utilisation in the subsequent years for seasonal works and acted as a buffer fund. It was also replied that the Department was successfully implementing the activities with the available staff. The reply is not acceptable as the short term deposits enhanced from ₹ 4.00 crore in 2013-14 to ₹ 34.95 crore in 2016-17 indicating that the released funds were not utilised in subsequent years also. Further, the implementation of the scheme without sufficient manpower impacted implementation of some components of project as detailed in **Paragraph Nos. 2.8.1.3 and 2.8.2.4.**

2.7.1 Parking of funds

PMU utilised ₹ 333.65 crore towards project cost out of the released amount of ₹ 383 crore during 2011-12 to 2016-17 resulting in parking of funds of ₹ 49.35 crore outside the Government account, as of March 2017. A few instances of sanction of funds in advance resulting in parking of funds were illustrated as below:

- As per TBGP guidelines, the beneficiaries planting saplings in their private lands under TCPL component were eligible for incentive in the third financial year after planting, calculated on basis of the number of plants survived. However, PMU proposed to release funds for the entire saplings planted without considering the survival rate and the same was approved by GoTN. We observed from the scrutiny of records that out of ₹ 18.06 crore sanctioned during 2014-15 to 2016-17, PMU could utilise ₹ 9.62 crore towards payment of incentive to the farmers and the balance amount of ₹ 8.44 crore (47 per cent) remained unutilised in the accounts of PMU. This included an amount ₹ 5.47 crore for the plantations which did not survive during 2014-15 and 2015-16 and ₹ 2.97 crore for 2016-17 which was pending settlement due to non-completion of survey.
- Based on the claim of PMU, GoTN released ₹ 20.72 crore towards contractual staff during 2011-12 to 2016-17. However, we observed that PMU did not utilise the released funds towards engagement of the contractual staff and an amount of ₹ 6.61 crore was kept outside the Government account.
- Similarly, GoTN released ₹ 3.79 crore during 2012-13 to 2016-17 towards overseas training under the Capacity Building component. However, an amount of ₹ 0.12 crore was only utilised during 2012-13 and the balance ₹ 3.67 crore was kept unutilized outside the Government account.

- PMU invested unspent sanctioned amount in fixed deposit and earned interest of ₹ 4.55 crore as on 31 May 2017, which was re-invested in the fixed deposits. GoTN did not issue any instructions for refund of unutilised amount or interest earned which remained outside the Government account.

Government accepted (November 2017) that the survival rate was not assessed in the proposal stage and the unspent amount was adjusted against cost over-run under TCPL component. It was also stated that the amounts were drawn initially as it could not be claimed at a later date. The reply confirms the fact that the Government failed to ensure the actual requirement of funds prior to its release.

2.7.2 Payment of commitment charges

The Agreement for loan assistance from JICA for implementation of the project envisaged utilisation of funds during the years planned and delay in utilisation of funds would attract commitment charges¹² on the total unused balances during the financial year and payable semi-annually. We observed from the scrutiny of records that GoTN failed to sanction and release the entire funds as per agreement and PMU failed to spend the released amount due to partial/non-implementation of components *viz.*, payment of incentives for TCPL, International training to departmental officials and engagement of contractual staff resulting in non-utilisation of the agreed amount of ₹ 82.66 crore which resulted in payment of ₹ 2.34 crore¹³ towards commitment charges to JICA till March 2017. It was also seen from the claim status report of the project that a reimbursement claim of ₹ 36.79 lakh was rejected by JICA for reasons not on record.

Government replied (November 2017) that the payment of commitment charges to JICA would arise after completion of the project. The reply is not acceptable as the details collected from the Finance Department of the Government indicated payment of commitment charges before the completion of the project.

2.7.3 Incorrect utilisation of loan assistance

Operational Manual of TBGP envisaged that payment of advances to the supplier for procurement of goods was not allowed as those were not expenditure for reimbursement.

Scrutiny of records revealed that an amount of ₹ 9.32 crore was paid to Electronics Corporation of Tamil Nadu (ELCOT) as advance for procurement of computers and Personal Digital Assistants¹⁴ during 2011-12 to 2015-16 for the project and the same was reimbursed in contravention of manual

¹² Payable after 120 days from the date of loan agreement for the unused balance of loan amount committed by JICA, on pro-rated daily basis at the rate 0.1 *per cent*.

¹³ 2011-12- ₹ 36.46 lakh; 2012-13 - ₹ 54.80 lakh; 2013-14 - ₹ 49.44 lakh; 2014-15 - ₹ 36.60 lakh; 2015-16 - ₹ 30.98 lakh and 2016-17 - ₹ 26.21 lakh = ₹ 234.49 lakh.

¹⁴ Personal Digital Assistant is a device with GPS and camera from which data of GPS co-ordinates of a location besides picture attributes of the location can be obtained.

provisions. It was also seen that the advance amount of ₹ 69.35 lakh¹⁵ was pending adjustment with ELCOT for two years and the goods intended were also not supplied resulting in non-achievement of the envisaged objective.

Government replied (November 2017) that the payment of advances to private contractors were strictly not allowed and the advances were given to ELCOT as it was a Government agency. The reply is not acceptable because advance payment was treated as expenditure in violation of provisions and reimbursement of expenditure claimed from JICA, without the receipt of goods was irregular.

2.8 Programme Management

The details of component-wise project cost, sanction and expenditure of the project were as indicated in **Table No. 2.3**.

Table No. 2.3: Details of component-wise project cost, sanction and expenditure

Name of the component	(₹ in crore)				
	Total project cost as per agreement 2011-12 to 2018-19	Percentage to the project cost	Amount allocated for project during 2011-12 to 2016-17	Sanction by GoTN	Amount utilised by PMU
Biodiversity	92.01	13.41	81.73	90.35	77.45
Increasing natural resource base	179.39	26.14	163.84	188.40	172.12
Institutional capacity development	191.91	27.96	164.45	100.40	80.53
Consulting services	6.29	0.92	6.29	3.85	3.55
Establishment charges (Borne by GoTN)	216.68	31.57	145.80	134.00	46.82
Total	686.28	100	562.11	517	380.47

(Source: Details furnished by PMU)

As seen from the table, we observed the following:

- Though the project envisaged strengthening Biodiversity Conservation and enhancement of green cover, the funds allotted for the components Biodiversity conservation and increasing natural base was 39.55 *per cent* of the project cost. However, 59.53 *per cent* of the total project cost was allocated for institutional capacity development and establishment cost, which included construction of PMU, field office buildings, purchase of vehicles, office equipment and employment of contractual staff.

¹⁵ Procurement of Personal Digital Assistance - ₹ 40.57 lakh; supply of Computer and accessories - ₹ 28.78 lakh.

2.8.1 Biodiversity Conservation

Under the component Biodiversity Conservation, 16 sub-components¹⁶ were implemented. The sub-component-wise observations made on detailed scrutiny of files and records are as under:

2.8.1.1 Removal of Invasive species for improving terrestrial habitats

Forest biological diversity refers to all life forms found within forest areas which includes trees, landscapes, plant and animal populations and micro-organisms that inhabit forest areas. Invasive species are plants and micro-organisms from one part of the world that are transported beyond their natural range and become established in a new area. They are sometimes referred as exotic, introduced, non-native or alien species.

Controlling and managing invasive species under TBGP envisaged survey, monitoring and reporting of invasive species and its removal in four Protected Areas and 10 Forest Divisions. Though Department estimated the area of occupation of invasive species in the State as around one lakh ha, GoTN contemplated trial removal of three invasive species *viz.*, Lantana, Prosopis and Wattle in an area of 3,000 ha only.

The component included uprooting the invasive species, turning the soil and immediate replanting with grasses and shrubs as appropriate. It was also envisaged for conduct of the baseline survey of the critical areas prior to removal and preparation of strategy and management manual during 2012-13 followed by the removal of species during 2013-14 to 2015-16. It was emphasised that the implementation of the component would be effective if the species were removed to contiguous areas without exception and were removed from the forest area. Further, regeneration of invasive species expected after a few years of removal, activities in the areas should be continued for the succeeding two to four years. The Governing Body of TBGP resolved (May 2014) that the removal of invasive species had to be executed in one of the identified Range of each Divisional Management Unit (DMU).

As against the target of 2,700 ha fixed for the period 2012-2013 to 2016-17, the invasive species of Lantana, Prosopis and Wattle was removed in 2,684 ha from 2013-14 to 2016-17 by incurring the expenditure of ₹ 5.51 crore. We observed that 1,700 ha of Lantana, Prosopis and Wattle was removed as against the target of 1,725 ha in the eight test checked DMUs.

¹⁶ 1. Strengthen wetland planning and management; 2. Improve critical habitat by removing invasive and exotic species; 3. Conserve critically endangered species; 4. Improve management of water, habitat and herbivores in Guindy National park; 5. Improve management of water, habitat and herbivores in Vallanadu Black buck sanctuary; 6. Improve management of water in PAs and RFs; 7. Monitor impacts of climate change on biodiversity; 8. Strengthen monitoring incidence of fire, poaching and encroachment in PAs and RFs; 9. Consolidation of forest boundaries by construction of RF Cairns; 10. Identify and manage traditional migratory routes; 11. Establish Elephant proof trench; 12. Establish solar powered fencing; 13. Socio-economic and forest dependency surveys of village communities; 14. Eco-development activities; 15. Ecologically sustainable development of tribal; and 16. Community based eco tourism.

Scrutiny of records relating to the implementation of the component revealed the following:

- PMU prepared the field manual on management of the three identified invasive species, viz., Lantana, Prosopis and Wattle. The field manual on management of Prosopis indicated 11 sites in the forest area invaded by Prosopis in 14 Ranges in five Divisions and six Protected Areas.
- Of these 11 sites, four sites were test checked by audit. It was seen that one site with three Ranges (Tirunelveli Division) was identified for removal of prosopis and funds were sanctioned. However, two sites involving four Ranges (Dindigul and Coimbatore Divisions) were not identified for removal of prosopis. In the Dharmapuri Division, three out of four Ranges identified were not considered for removal.
- Removal of wattle was undertaken in Kodaikanal DMU during 2015-16. However, the wattle trees were not removed till roots (**Figure No. 2.1**) due to which eradication of invasive species was not completed properly.

Figure No. 2.1: Partial removal of wattle at Kodaikanal



- Removal of Lantana was done in an isolated patches of 1.5 to 10 ha in different Ranges and partially in Nilgiris North DMU during 2015-16 in deviation of the manual instructions.
- Removal of Prosopis was sanctioned and executed in the Sivagiri Range in Tirunelveli DMU to an extent of 15 to 50 ha (total 85 ha) in the three year period of 2013-14 to 2015-16 indicating non-removal of invasive species in the same location of the Range at the same time.
- In two DMUs¹⁷, invasive species of 6,869 cum of cut wattle wood and 59.95 MT of wattle bark though removed under the project were stacked (**Figure No. 2.2**) inside the forest area resulting in non-adherence to the norms and possibility of regeneration of invasive species.

¹⁷ Nilgiris (North) and Nilgiris (South).

Figure No. 2.2: Stacking of cut wattle wood in forest area

Thus, absence of sanction for removal of prosopis in the identified areas of the field study, partial removal of the trees of invasive species in a location and non-selection of the entire area occupied by the invasive species at the same year indicated inadequate conservation of biodiversity activities despite incurring an expenditure of ₹ 5.51 crore for removal of invasive species of Lantana, Prosopis and Wattle under TBGP.

Government replied (November 2017) that removal of invasive species had been carried out in the identified divisions on pilot basis and the selection of areas were determined by the respective officers taking into account the physical targets and the field need. The reply is not acceptable as the field officers failed to consider the sites identified and the procedure prescribed in the approved field manual which was finalised based on baseline survey resulting in partial achievement of the objective.

2.8.1.2 Failure to monitor impacts of climate change on biodiversity

India, as a signatory to the Convention on Biological Diversity¹⁸ is obliged to essentially identify and monitor the components of biological diversity for its conservation and sustainable use. The obligation requires extensive field surveys to perform an inventory of species and the ecosystems. The surveys and repeat surveys provide the means of monitoring changes in biological diversity, assessing its conservation status for information on management.

TBGP envisaged establishment of long term programme to monitor impacts of climate change on Biodiversity, which included establishment of network of monitoring stations, development of methodology in the first year (2011-12), preparation of field manual, completion of base line survey within three years (before 2013-14) and for a second survey after five years, within the life of the project.

¹⁸ India ratified the Convention on Biological Diversity in 1994.

We observed that GoTN sanctioned funds for monitoring impact of climate change on Biodiversity during 2012-13 and 2013-14. Department failed to identify an agency for conduct of field study and baseline survey till January 2014. Department also proposed (January 2014) for enhancement of the budget allocation for the project from ₹ 25 lakh to ₹ 46.78 lakh. JICA suggested that the study was to be reconsidered as the period of the implementation exceeded the project period. Tamil Nadu Forest Department, without reconsidering the same, recommended for dropping which was approved (June 2014) by the HLEC.

Thus, failure of the Department to adhere to the time schedule of the project besides delay in identifying the appropriate agency led to dropping of this component despite availability of fund to undertake study to monitor impact of climate on Biodiversity.

Government admitted (November 2017) the facts and stated that the component was dropped as the implementation exceeded project period. The fact, however, remains that the objective of monitoring impact of climate change remains unachieved.

2.8.1.3 Conserve critically endangered species

Sea turtles are protected under Schedule I of the Indian Wild Life Protection Act. They are listed as critically endangered on the World Conservation Union Red list. Though many reasons were attributed for their death, main cause was entanglement and subsequent drowning in various nets *viz.*, trawl nets, ray nets and gill nets used by fishermen.

TBGP proposed for development of species conservation plans for sea turtles in seven coastal districts¹⁹ of the State for a period of five years. The action plan for conservation of sea turtle included provision of Turtle Excluder Devices to the fishermen, establishment of hatcheries to protect the sea turtle eggs from poaching and for increased hatchings. It also prescribed for adoption of both *in-situ* and *ex-situ* hatcheries.

Scrutiny of records revealed the following:

- PMU finalised the Sea turtle model hatchery guidelines belatedly in July 2015 after implementation of the scheme for more than two years.
- Department commenced conservation of the sea turtles by establishing *ex-situ* hatcheries and did not undertake *in-situ* hatcheries due to insufficient staff to protect their natural nests despite instructions in the management handbook.
- We observed from the four test checked DMUs that the sea turtle eggs collected by the Department for hatching was 25,257, 23,524, 17,721 during the years 2013-14 to 2015-16 respectively which improved to the eggs collection of 53,153 during 2016-17.
- Similarly, the percentage of survival of the collected eggs ranged between 32 and 92 during 2013-14 to 2015-16 as compared to 80 and

¹⁹ Chennai, Cuddalore, Kancheepuram, Kanyakumari, Nagapattinam, Ramanathapuram and Thoothukudi.

97 in the four DMUs during 2016-17. Delay in finalisation of hatchery guidelines resulted in reduced sea turtle egg collection for hatchings in the years and inadequate conservation of sea turtles.

Sea Turtle Devices

Government sanctioned (July 2013) provision of 500 Turtle Excluder Devices (TEDs) for conservation of sea turtles. Department supplied 20 TEDs to fishermen in Chennai and Nagapattinam Divisions in 2014-15. Wild Life Warden, Chennai issued a work order (December 2015) for fabrication and supply of 231 TEDs made of stainless steel for supply to eight districts for a value of ₹ 15.66 lakh to a contractor and were supplied to eight districts.

We observed from the scrutiny of records that 231 TEDs were issued to the implementing Divisions. Of the 231, 117 TEDs were issued to the four²⁰ test checked districts. Out of the same only 51 TEDs were issued to fishermen in Cuddalore district and the balance remained with the implementing Divisions. Ineffective pursuance to procure the entire quantity of TEDs sanctioned and to distribute the procured quantity in full resulted in non-achievement of the objective of preserving the endangered sea turtles.

It was also observed that the survey conducted by Students' Sea Turtle Conservation Network revealed that 288 turtles were washed ashore dead in Chennai coast during the 45 days survey period conducted in January and February 2015.

Thus, inadequate collection and hatching of eggs due to delay in finalisation of model sea turtle guidelines, partial procurement of TEDs and non-supply of procured TEDs resulted in ineffective conservation of critically endangered sea turtle under TBGP.

Government stated (November 2017) that the possibility of adopting scientific approach for increasing the survival rate would be explored in the coming years. It was also stated that the manufactured TEDs were not supplied due to objections raised in adoption of approved design and action had been initiated for supplying the balance TEDs to the fishermen during 2017-18. The reply is not acceptable as the Department failed to provide appropriate details of the objections to the approved design and the same resulted in partial achievement of objective of conservation of sea turtles.

2.8.2 Increasing the Natural Resource Base

The National Forest Policy, 1988 and 11th Five Year Plan document envisaged bringing 33 *per cent* of geographical area under forest and tree cover by the year 2023. The State has 18 *per cent* forest cover and four *per cent* tree cover. Considering the availability of 18.5 *per cent* of the total geographical area as fallow lands in the State, plantation activities outside the recorded forest area was proposed to increase the green cover as envisaged in the National Forest Policy.

The component of TCPL under TBGP planned to supply three crore short rotation seedlings to cover 3,000 ha (10,000 seedlings per ha) and seven crore

²⁰ Cuddalore, Nagapattinam, Kanyakumari and Tirunelveli.

long rotation seedlings to cover 1.40 lakh ha (500 seedlings per ha) during 2012-13 to 2016-17. PMU made a mid-term correction (January 2014) that short rotation plants were not contributing to the objective and hence decided to supply long rotation seedlings without compromising the target area and also extended the period upto 2018-19.

The physical target and achievement of seedlings supplied and area covered under TCPL during the period 2012-13 to 2016-17 is detailed in **Table No. 2.4.**

Table No. 2.4: Details of target, achievement and area covered under TCPL

Year	Target (seedlings number in lakh)			Achievement (seedlings number in lakh)		
	Short rotation	Long rotation	Area covered in ha	Short rotation	Long rotation	Area covered in ha
2012-13	28.14	71.86	14,653	28.14	71.86	14,653
2013-14	50.41	131.48	26,791	49.52	131.48	26,791
2014-15	0	102.00	20,400	0	102.00	20,400
2015-16	0	102.00	20,412	0	102.00	20,412
2016-17	0	96.92	19,384	0	96.92	19,384
Total	78.55	504.26	1,01,640	77.66	504.26	1,01,640

(Source: Details furnished by PMU)

Scrutiny of records revealed that as against the target of 281.89 lakh seedlings during the plantation years 2012-13 and 2013-14 for supply of short and long term seedlings, the department reported achievement of 281 lakh seedlings. However, cross verification of the statement of incentive payments made to the beneficiaries for the period 2012-13 and 2013-14 revealed that the actual number of short and long term seedlings planted during these two years is 275.89 lakh seedlings. The variation in the number of seedlings planted indicated that the Department overstated the number of plantation of seedlings by 5.11 lakh, which was valued at ₹ 1.00 crore, during 2012-13 and 2013-14.

Government stated (November 2017) that the variations were due to carrying out the spill over works in the subsequent year of operation. The reply is not acceptable, as the plantations made in the subsequent years cannot be considered as planted in earlier years for incentive payments.

2.8.2.1 Incorrect selection of plantations

The project guidelines envisaged that no pure casuarina plantations would be undertaken by a single farmer under TCPL. We observed from the test check of records of four²¹ out of nine DMUs that 45,920 numbers of casuarina seedlings valued at ₹ 6.20 lakh were supplied as a single plantation during the period 2012-13 to 2013-14 under TCPL component, in violation of the project guidelines.

2.8.2.2 Village Level Micro Plan

The project envisaged the preparation of Village Level Micro Plan (VLMP) by non-government organisation to assess the availability and suitability of the land for different tree species, plantation models in each identified village and

²¹ Dindigul Forestry Extension, Dindigul, Dharmapuri Forestry Extension and Sirumali.

to ascertain the preference of plantation of the farmers. VLMP contained farmer-wise data and the preference of beneficiaries for planting different tree species.

We observed from the scrutiny of records that

- The VLMP indicated the matrix ranking for the different tree species after considering their growth, economic value, green cover, biodiversity conservation and its usefulness. VLMP did not analyse the matrix ranking of the trees considering the type of soil, moisture, rainfall condition, agro climatic zone, etc., for different areas of village. This resulted in selection of plantation on the basis of the preference of the beneficiaries instead of suitability of the area or the objective of the component for enhancing the green cover. We observed that silver oak seedlings were supplied for plantation to the beneficiaries based on their preference despite the least matrix ranking accorded to the silver oak trees considering its capacity of green cover and biodiversity conservation in five²² DMUs.
- In two selected DMUs, 161 villages were identified for implementation of TCPL during 2012-17. We observed that the scheme was not implemented in 25 identified villages due to unwillingness of the beneficiaries whereas it was implemented in 29 villages for which micro plan was not prepared. It was seen that the beneficiaries in 19 out of 29 villages were supplied silver oak seedlings which was with least matrix rankings for green cover.
- In two²³ out of nine DMUs test checked, 70,975 number of seedlings of short/long rotation valuing ₹ 20.16 lakh were issued to 64 beneficiaries who were not selected as beneficiary under the approved VLMP as they were not provided with adequate information and training about the programme.

Thus, VLMP did not rank the plantations suitable for the identified villages but suggested plantations based on the preference of the beneficiaries and the beneficiaries were selected without proper field investigation resulting in inadequate planning in implementation of Tree Cover in Private Lands.

Government accepted (November 2017) that silver oak seedlings under shade cover was in contravention to the project guidelines and stated that the plantations were considered as inter-crop plantations. It was also stated that detailed replies would be obtained from the field DMUs. The fact, however, remains that plantation of trees as inter-crop would not add any fresh green cover.

2.8.2.3 Supply of seedlings

The project envisaged plantation of 500 numbers of long rotation seedling per ha considering the espacement of 5m x 4m. We observed from the records of two²⁴ DMUs that 89,092 seedlings were supplied to cover 103.05 ha without

²² Dindigul, Dindigul Forestry Extension, Harur, Nilgiris (North) and Nilgiris (South).

²³ Dindigul Forestry Extension and Dindigul.

²⁴ Dindigul and Sirumalai.

considering the norms for spacing between the plantations. This resulted in non-adherence to norms and excess supply of 37,557 seedlings besides avoidable expenditure of ₹ 9.94 lakh²⁵. This also resulted in excess recording of area of 75 ha as achievement under tree plantation component due to the fact that the area of coverage was calculated on the basis of number of seedlings issued.

Government stated (November 2017) that detailed reply would be furnished on receipt of reports from the concerned DMUs.

2.8.2.4 Survival of plantations

The project envisaged for making payment of incentive to the farmers on the basis of survived plantations after conducting physical inspection of the plantations in the third financial year after planting. The guidelines stipulated preparation of data on survival of plantations in the first quarter of the fiscal year and average survival rate of 70 per cent of trees planted outside the forest area for the purpose of monitoring and evaluation.

Scrutiny of records revealed that Department conducted survival assessment studies during 2014-15 and 2015-16 for the plantations made during 2012-13 and 2013-14 respectively. The data on survival of trees planted during 2014-15 was not finalised during 2016-17.

The details of survival of long and short rotation plantation raised under TCPL are as detailed in **Table No. 2.5**.

Table No. 2.5: Details of survival of plantations

(Numbers in lakh)

Year	Long Rotation			Short Rotation		
	No. of trees planted	No. of trees survived	Percentage of survival	No. of trees planted	No. of trees survived	Percentage of survival
2012-13	69.73	40.44	57.98	26.96	12.52	46.44
2013-14	128.89	75.22	58.36	50.30	30.14	59.92

(Source: Details furnished by PMU)

It may be seen from the above that the percentage of survival of plantations ranged between 46 per cent and 60 per cent during 2012-13 and 2013-14 which was below the survival rate of 70 per cent fixed. This resulted in absence of green cover in an area of 16,938 ha²⁶. Department also did not propose and implement supply of seedlings to the farmers to supplement the mortality of the plantations for achieving the desired green cover.

We also observed that 10.53 lakh seedlings planted under long rotation category in 18 DMUs during the years 2012-13 to 2013-14 were reported as zero per cent survival resulting in non-achievement of objective of creating green cover in an area of 2,106 ha. The expenditure of ₹ 2.14 crore incurred for raising of nursery and plantation cost became infructuous.

²⁵ (2012-13: 9,523 seedling x ₹ 15.80 = ₹ 1.50 lakh) (2013-14: 8,842 seedling x ₹ 24.53 = ₹ 2.17 lakh) (2014-15: 2,298 seedling x ₹ 31.75 = ₹ 0.73 lakh) (2015-16: 16,894 seedling x ₹ 32.80 = ₹ 5.54 lakh) = ₹ 9.94 lakh.

²⁶ Long rotation: 16,592 ha (Not survived - 82.96 lakh seedlings/500 per ha) and short rotation: 346 ha (Not survived - 34.60 lakh seedlings/10,000/ha).

Thus, Department did not ensure survival of the planted seedlings resulting in non-achievement of the green cover to an extent of 19,044 ha of private lands.

Government stated (November 2017) that the survival percentage was low due to initial years of the project and would be higher in the subsequent years. The reply is not acceptable as the Department did not complete the collection of data for the subsequent years to substantiate their claim.

2.8.3 Ecologically Sustainable Development

In order to focus on mainstreaming village community centric development initiative aiming at biodiversity conservation and Ecologically Sustainable Development was envisaged under the project. The 12th Five Year Plan document also envisaged to ensure the welfare of the tribal and forest fringe villagers to ensure economic prosperity and ecological stability.

This component consists of sub-components *viz.*, Eco-development activities in villages abutting PAs or Elephant Reserves (ER) (30 villages²⁷) in six DMUs²⁸ with an expenditure of ₹ 4.93 core during 2012-13 to 2015-16 and Ecologically sustainable development (ESD) in 33 villages²⁹ for orienting the local community in ecological sustainable development. The sub-components were implemented by the village council, in which the Forest Range Officer functioned as the Member Secretary, on the basis of recommendations in the village micro plan prepared for Community development activities and Income generation activities.

Scrutiny of records in 25 out of 63 test checked villages revealed the following deviations from VLMP:

2.8.3.1 Community development activities

- Village micro plan of three villages³⁰ in two DMUs³¹ envisaged levelling the agriculture land, construction of overhead water tank, drinking water and toilet facilities in middle school. DMUs released (November 2013 to February 2016) ₹ 16.75 lakh towards these community development activities to the Village Forest Council (VFC) through FMU. It was seen that the VFCs incurred ₹ 12.39 lakh for activities beneficial to individuals instead of community development as proposed in the micro plan *viz.*, supply of gas cylinders, sewing machines, water purifier, agriculture implements, dining table and chairs to the members. The balance amount of ₹ 4.36 lakh was kept unutilised in the savings bank account.

²⁷ Situated either on the fringes of wild life sanctuaries at Sathyamangalam, Kanyakumari and Srivilliputhur or within five km radius of boundary of a RF forming part of an Elephant Reserve.

²⁸ Dharmapuri, Dindigul, Kanyakumari, Kodaikanal, Sathyamangalam and Srivilliputhur.

²⁹ Located around RFs that are part of Nilgiris eastern ghat Elephant Reserve and Nilambur-Silent valley-Coimbatore Elephant Reserve, Kallakurichi and Vellore.

³⁰ Aranmanaipallam, Booliyammanur and Echampallam villages.

³¹ Dharmapuri and Dindigul.

- Forest Range Officers functioning as the Member Secretary of the village councils also failed to adhere to the micro plans, resulting in non-utilisation of the sanctioned funds for community development.

2.8.3.2 Income generation activities

Ecologically sustainable development was implemented in 33 tribal villages with the view to reduce the dependency on forest for their livelihood and to increase their income through alternative sources.

- A sum of ₹ 2.18 crore was released by five³² DMUs to 19 village councils for income generation activities during 2012-13 to 2015-16. Of the same, the village councils released only ₹ 86.74 lakh (39.79 per cent) to the tribals and villagers for income generation activities. Of the disbursed loan of ₹ 86.74 lakh, ₹ 30.65 lakh was pending recovery after due date and the delay in recovery ranged from two to 16 months as on 31 March 2017. It was also seen that ₹ 36.01 lakh recovered from the loanee was also not utilised for making further loans.
- It was seen that DMU, Coimbatore, released ₹ 50 lakh out of the unspent amount of ₹ 1.31 crore, to five³³ village councils for the benefit of tribal population during 2012-13 to 2015-16. Of the same, ₹ 42 lakh was diverted (June and December 2016) by the Conservator of Forests for activity in a village which was not covered under TBGP. Thus, the unspent amount of ₹ 1.31 crore was parked in bank accounts for a period ranging from 12 to 48 months without utilisation of the same for the envisaged objective of the project.

Thus, Department failed to ensure adherence to the VLMP recommendations in implementing the project and utilised the funds for activities other than community development of tribals. Partial utilisation of released project funds for income generation activities resulted in parking of funds of ₹ 1.31 crore.

Government replied (November 2017) that the deviations from the micro plan was on the basis of the field necessity and executed with the approval of the EDC village committee. It was also replied that efforts were made to recover the dues from the members and the balance loans would be released in subsequent years. The reply is not accepted as the micro plans were approved by DMU and deviations were not approved by DMU.

2.8.4 Improved management of water in Protected Areas/Reserve Forests

Water is considered to be a limiting factor during the dry season for wild life in Protected Areas (PA) and other sites forcing animals to visit human habitat with resultant human-animal conflict. Further, shortage of water for wild life reflects degradation of the habitats adversely impacting the biodiversity. A comment was also made in the CAG's Audit Report for the year ended March 2015 about the absence of adequate water facilities inside the forests which forced the movement of wild animals outside the forest area thereby resulting in human-animal conflict.

³² Coimbatore, Dharmapuri, Dindigul, Kodaikanal and Nilgiris (North).

³³ Kadamankombai, Manar, Sithugani, Thondai and Veppamaruthur.

The component comprises of Water Management Strategy and Action Plan, improving water retention capacity by creating permanent water holes to improve water storage and supply. Project guidelines emphasised that the strategy and plan developed should take into account elephant movements and existing corridors by hiring knowledgeable experts. The department hired experts and developed the Water Management Strategy and Action Plan for each DMUs. The plan and strategy was finalised belatedly in 2014 in respect of four test checked DMUs.

The details of water structure created during 2013-14 to 2016-17 under TBGP are indicated in **Table No. 2.6**.

Table No. 2.6: Details of target and achievement on water structure

(In numbers)

Name of the work	2013-14		2014-15		2015-16		2016-17		Total	
	T	A	T	A	T	A	T	A	T	A
Creation of water storage facilities	12	10	12	10	12	10	11	9	47	39
Creation of permanent water hole	17	17	8	7	8	7	8	7	41	38

(Source: Details furnished by PMU)

(T: Target and A: Achievement)

From the above, we observed as under:

- Despite hiring of experts and development of Water Management Strategy and Action Plan for each DMU in 2014, the creation of water facilities inside the Reserved Forest (RF) area was executed upto 2016-17 based on the proposals finalised during 2012-13. Mid-course correction, to identify additional areas requiring water facilities, was not identified by the Department based on inputs from Action Plan.
- Of 47 water storage works planned during 2013-14 to 2016-17, 39 works were completed. We observed that eight works sanctioned for DMU, Hosur and Wild life warden, Srivilliputhur were not created (August 2017) for four years despite sanction of works every year and availability of ₹ 18.19 lakh.
- Of 41 works sanctioned for creation of permanent water holes, Wild life warden, Nagapattinam did not create (August 2017) these structures despite the availability of funds of ₹ 35.13 lakh.

Thus, inadequate implementation of the strategy and plans finalised with the assistance of the expert, failure to create water storage systems and permanent water holes by the field officers of Hosur, Srivilliputtur and Nagapattinam DMUs despite availability of funds of ₹ 53.32 lakh resulted in non-achievement of the objective of availability of water for wild life to prevent human-animal conflict.

2.8.4.1 Creation of water facility

Scrutiny of records of improvement in management of water facilities in the Protected Areas created in the test checked DMUs revealed the following:

- The water management strategy and action plan (June 2014) of DMU, Coimbatore recommended for construction of 34 check dams, five

percolation ponds and water troughs in the elephant corridor of Bolampatty, Mettupalayam and Karamadai ranges. However, only three water troughs were created at Coimbatore and Periyayanakanpalayam range which was not recommended in the action plan. We further observed that an elephant was reported to have died (March 2016) due to dehydration in Karamadai range.

- The water management strategy and action plan (March 2014) of DMU, Dharmapuri recommended for construction of 21 check dams, 13 percolation ponds and water troughs in elephant corridor of Pennagaram and Hogenakkal ranges. However, only one check dam, one water hole and one percolation pond were created at Palacode which was not recommended in the action plan. An elephant was reported to have died (December 2016) due to dehydration in Pennagaram range.
- The water management strategy and action plan (August 2014) of DMU, Nilgiris (North) recommended for construction of 202 check dams and 66 percolation ponds considering the human-animal conflict. However, three check dams were sanctioned and constructed (March 2017).

Thus, failure of the PMU to sanction adequate number of percolation ponds, water troughs and check dams for improved management of water in Protected Areas/Reserve Forests based on the water management strategy and action plan resulted in lesser availability of water to the animals.

Government replied (November 2017) that the mid-term correction was not required as the targets for the project were achieved. The reply is not acceptable as the water facilities recommended in the Action Plan prepared under the project was not considered for execution by the Department.

2.8.5 Non-eviction of encroachment in Forest area

Section 68 A of the Tamil Nadu Forest Act, 1882, stipulated that any person occupying any land in reserved forest or any land at the disposal of Government without any authority may be summarily evicted by an officer of the Forest Department after 15 days notice. Further, GOI instructed (May 2002) all States to frame a time bound programme for eviction of the encroachment in the Reserve forest. The details of encroachment of forest area are indicated in **Table No. 2.7**.

Table No. 2.7: Details of encroachment in forest area

Year	Encroachment at the end of the year (in ha)
2012	15,194.556
2013	15,139.770
2014	15,263.753
2015	14,821.225
2016	15,108.484

(Source: Details furnished by the Forest Department)

From the above, we observed as under:

- Despite stipulations in the Act and instructions from GOI, eviction of encroachments during the period from 2012 to 2016 was not

encouraging as the net eviction was only 86.072 ha in 2016 as compared to the encroachments during 2012.

- Though the department could evict encroachments to an extent of 54.786 ha and 442.528 ha during 2013 and 2015 respectively, there was no concrete action to continue the trend as new encroachment was allowed to an extent of 123.98 ha and 287.259 ha during 2014 and 2016 respectively.

From the scrutiny of records at the test checked DMUs we observed as under:

- The Hon'ble High Court of Madras had delivered (October 2013) judgement in favour of Forest Department for eviction of forest land to an extent of 1,939 ha. However, efforts were not made to evict encroacher from encroached forest land till May 2017, even after a lapse of more than three years from the judgement. On this being pointed out, it was replied that the matter was pending due to non-formation of a high level committee by the District Collector. Thus, the Department failed to co-ordinate with the Revenue Department for eviction of encroacher despite directions from the Court.
- We also observed that 40 shops/stalls encroached in the RF area in the Kodaikanal Wild Life Sanctuary Division for more than eight years. Despite a mention of the same in the Forest Working Plan of the Division, no efforts were made to evict the encroacher.

2.8.5.1 Urbanisation in Elephant reserve

In order to develop the hills into ecologically acceptable and environmentally desirable areas, GoTN constituted (April 1990) Hill Area Conservation Authority (HACA). GoTN directed³⁴ (March 2003) that all activities of construction of building having more than two families, construction of commercial and office building of more than 300 sq m area and buildings developed in Booluvapatti village to consult the HACA in respect of all development programmes undertaken.

The ISHA foundation, Coimbatore, (Foundation) had constructed (1994 to 2008) various buildings in an area of 32,856 sq ft in Booluvapatti village with permission from Booluvapatti Village Panchayat. The Foundation requested (October 2011) Forest Department to issue No Objection Certificate (NOC) and ex-post facto approval from HACA for the already constructed buildings in an area of 69,193 sq m, proposed construction in an area of 52,393 sq m and an area of 3,34,331 sq m for vehicle parking, roads, playground etc. District Forest Officer, Coimbatore conducted (February 2012) field inspection and observed that earlier constructions of buildings in an area of 11,973 sq m undertaken from 2005 to 2008 was permitted by Village Panchayat without consulting HACA.

The field assessment report stated (August 2012) that the Foundation continued construction in the area despite issue of notice by Forest Department (February 2012 and April 2012) on the plea that the buildings were in the protected area of Booluvapatti reserve forest range, known for

³⁴ G.O Ms.49, Housing and Urban Development Department dated 24 March 2003.

elephant habitat/corridor. The request for NOC was returned (February 2013) by Forest Department and thereafter, no follow up action was initiated to stop further construction.

The Foundation re-approached (March 2017) the Department stating that NOC was obtained from Tahsildar, Revenue Department and requested NOC of Forest Department for approaching HACA. DFO, Coimbatore, forwarded the request to Principal Chief Conservators of Forest with recommendation for grant of HACA permission citing reasons *viz.*, buildings had already been constructed, used by the public for religious purpose, applicant sought *ex-post facto* approval despite the fact that it was within 100 m from Reserve Forest boundary and Writ Petitions were filed by an individual for demolition of unapproved buildings constructed in HACA notified areas by the Foundation in the High Court of Madras. The proposal also incorporated specific mitigation measures³⁵ to prevent disturbances caused to wildlife and creation of water troughs for the benefit of wildlife. The approval of HACA was pending (July 2017).

Forest Department failed to act on the notices issued in 2012 during construction of the buildings. The Department did not insist for completion of mitigation measures and creation of water troughs prior to recommending the case to HACA. This resulted in non-ensuring the ecologically acceptable and environmental safeguarding of biodiversity of hills.

Government replied (November 2017) that the encroachments did not fall under the purview of the TBGP. The reply is not tenable as the project included strengthening resource protection with geo referencing location boundary markers using Global Positioning System (GPS) for monitoring encroachments and the same was implemented in Booluvapatti village which was a part of Coimbatore DMU.

2.8.6 Capacity Development

The project envisaged that 532 Government staff was required to ensure the smooth and timely implementation, monitoring works and reporting of the progress of works during the project period and the expenditure was to be borne by the State Government.

The details of sanctioned strength and actual persons-in-position of the category of Government staff required for implementation and monitoring the activities of the project as of March 2017 are indicated in **Table No.2.8**.

³⁵ Shifting of road running parallel to the forest road from south to north by 100 meters away from RF; Construction of adequate fencing and elephant proof trenches; and Removal of i) Kalari shed situated at a distance of 16 m from RF ii) Water tank with swimming pool situated at a distance of 6 m from RF and iii) Temporary shed situated on the western side are the mitigation measures.

Table No. 2.8: Details of sanctioned strength and persons-in-position

(In numbers)

Sl. No	Name of the Post	Sanctioned Strength	Persons-in-position	Vacancy
1	Conservator of Forest	2	0	2 (100)*
2	Deputy Conservator of Forest	4	2	2 (50)
3	Driver	28	12	16 (57)
4	Forest Range Officer	68	30	38(56)
5	Statistical Inspector	17	2	15 (88)
6	Forester	226	78	148 (65)
	Total	345	124	221 (64)

(Source: Details furnished by Department)

(*Figures in bracket indicate percentage)

From the above, we observed that 30 out of 68 posts (56 per cent) of Forest Range Officers and 148 out of 226 posts of Foresters (65 per cent) created exclusively for the implementation of the TBGP remained vacant resulting in absence of adequate manpower for implementation of the scheme in the State besides non-utilisation of the State share of the project cost.

Thus, the Department failed to ensure availability of adequate manpower for effective implementation of the scheme in the State.

Government replied (November 2017) that the activities were maintained with the available staff and the issue of non-availability of staff had been addressed to the appropriate forum. The reply is not acceptable as we observed delay in implementation of the project without sufficient manpower and some project components such as *in-situ* hatchery activities for conservation of endangered species and survey of planted trees under TCPL as discussed in **Paragraph Nos. 2.8.1.3 and 2.8.2.4.**

2.9 Internal Control

The project emphasised that a system would be evolved to monitor and evaluate the progress of project activities in a timely manner and also assess their performance to estimate the project impacts and results. The deficiencies noticed in the internal control mechanism are discussed below:

2.9.1 Web enabled management information system

The project envisaged development of web enabled management information system within 18 months to effectively implement the project during crucial stages of the intervention. Further, HLEC instructed (May 2012) for digitalisation of the achievements for the component by utilising the service of existing Geomatic Information Centre of the Forest Department, to avoid duplication of areas and to reduce the expenditure. Department procured GPS hand-held receivers for this purpose and new software was developed for processing and storing the field data at a cost of ₹ 1.09 crore as part of web based management.

We observed that the field offices collected GPS co-ordinates of the area of implementation of project components *viz.*, TCPL, consolidation of forest boundary by constructing cairns (concrete boundary pillars), etc., and were

forwarded to PMU as soft copy for preparation of Resource Protection Reports. These GPS co-ordinates were not uploaded into the server for undertaking web based monitoring. The data available in the Geomatic Centre was obtained (September 2017) and cross verified with the achievement of these project components which revealed the following:

- As against the target of construction of 80,000 cairns to protect the reserve forest area, Department completed (2016-17) 60,848 cairns. However, GPS co-ordinate details for only 9,442 cairns (15.52 *per cent*) constructed were available.
- The component TCPL covered 1.02 lakh ha of trees planted outside the forest area upto 2016-17. However, GPS co-ordinate details were available only in respect of 10, 971 ha (10.76 *per cent*).

Thus, web based monitoring of the project was not implemented effectively by collating the complete details of area of implementation of the project components with geo co-ordinates, to ensure effective monitoring.

Government replied (November 2017) that subordinate officers were instructed to upload all the details in the software and the server of the Geomatic centre was crashed in March 2017. It was also assured that the work would be finished immediately on installation of new server. The reply is not acceptable as the data available with the Department prior to server crash indicated incomplete data capturing.

2.9.2 Computerised Financial Management and Accounting system

The project envisaged development of computerised Financial Management and Accounting System (FMAS) for the efficient management of funds and generating statement of expenditure at all operational levels. The module was developed incurring an expenditure of ₹ 1.85 crore. The training of personnel to use the modules and the data entry were pending implementation (August 2017), which resulted in non-achievement of the objective besides non-monitoring of utilisation of accumulated funds with various implementing agencies as discussed in **Paragraph No. 2.7.1.**

Government replied (November 2017) that the server had crashed and replacement was awaited. It was also stated that FMAS training and data entry would commence after the installation of the new server. The fact however remains that the Department failed to provide necessary training to the officials immediately after the development of the module.

2.9.3 Inadequate convening of meetings

The Operational Manual of the project envisaged that HLEC should convene meetings at least once in six months to consider and approve the proposals including fund allocation thereof and monitor the progress of implementation. It was further stipulated that the Governing Body, constituted to assist HLEC, should meet at least once in three months to examine and recommend the proposals and review the progress of projects. It was, however, observed that while the Governing Body met 13 times as against the required 24 and HLEC meetings were held only on six occasions as against the required 12 during 2012-13 to 2016-17.

Absence of regular meetings of Executive Body and HLEC delayed the approval of Annual Plan of Operation and periodical monitoring of the progress of the project components.

Government replied (November 2017) that the non-conduct of meetings was due to administrative reasons and stated that the project work was not hindered due to absence of meetings. The reply is not acceptable as the delay in approval of Annual Plan of Operations consequently delayed release of funds every year leading to non-completion of project during the year of sanction and accumulation of funds in the accounts of PMU.

2.10 Conclusion

Implementation of Tamil Nadu Biodiversity Project in the State revealed that the Department failed to complete the preparatory phase of action plans, surveys, baseline geo coded data of land distribution and local specific flora for conservation of biodiversity indicating inadequate planning. Failure of the Government to sanction the agreed funds, non-utilisation of State share of ₹ 87.18 crore towards establishment charges, parking of Government funds of ₹ 49.35 crore outside the Government account indicated imprudent financial management. Absence of sanction for removal of invasive species in the identified areas and its partial removal, inadequate collection and hatching of eggs, inadequate supply of turtle excluder device and non-monitoring of climate change indicated ineffective biodiversity conservation. Selection of plantations based on beneficiary preference instead of field investigation for tree cultivation in private lands and failure to ensure survival of the planted saplings resulted in non-achievement of the green cover to an extent of 19,044 ha. Department did not ensure adequate community development and income generation activities for tribal people in implementing eco-developmental activities. Absence of adequate manpower, shortcomings in the web based monitoring and internal control impacted the objective of strengthening biodiversity conservation and enhancing green cover in the State.

2.11 Recommendations

State Government may

- Ensure creation of database of geo coded data on land distribution and local specific flora and finalise proposals for declaration of eco sensitive zones for conservation of biodiversity and enhancing green cover.
- Strengthen the system of financial control to ensure complete and timely utilisation of funds for the intended objectives and avoid parking of funds.
- Formulate a mechanism for effective implementation of the components of the project on the basis of baseline surveys, field studies, village plans and action plans for achieving the objective of biodiversity conservation and enhancement of green cover.

- Ensure conduct of periodic meetings of High Level Empowered Committee and Executive Committee to effectively monitor the implementation of the project components. Internal monitoring through Web enabled management system may also be ensured.