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Legislative Assembly on  
28 March 2018

**Report of the  
Comptroller and Auditor General of India  
on  
Economic Sector  
for the year ended 31 March 2017**



**Government of Gujarat  
Report No. 1 of the year 2018**

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**GOVERNMENT OF GUJARAT**

**(Report No. 1 of the year 2018)**



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## **PREFACE**

This Report for the year ended March 2017 has been prepared for submission to the Governor of Gujarat under Article 151 of the Constitution of India.

The Report relates to audit of the Economic Sector of the Government Departments conducted under the provisions of the Comptroller and Auditor General of India's (Duties, Powers and Conditions of Service) Act, 1971 and Regulations on Audit and Accounts, 2007 issued thereunder by the Comptroller and Auditor General of India. This report is required to be placed before the State Legislature under Article 151 (2) of the Constitution of India.

The instances mentioned in this Report are among those, which came to notice in the course of test audit for the period 2016-17 as well as those which had come to notice in earlier years, but could not be reported in previous Audit Reports; instances relating to the period subsequent to 2016-17 have also been included wherever necessary.

Audit has been conducted in conformity with the Auditing Standards issued by the Comptroller and Auditor General of India.



# **CHAPTER-I**

## **INTRODUCTION**



# CHAPTER I

## INTRODUCTION

### 1.1 About this Report

This Report of the Comptroller and Auditor General of India (C&AG) presents matters arising from Performance Audit and Compliance Audit of the departments of the Government of Gujarat in the Economic Sector.

The Compliance Audit refers to examination of the transactions relating to expenditure of the audited entities to ascertain whether the provisions of the Constitution of India, applicable laws, rules, regulations and various orders and instructions issued by competent authorities are being complied with. On the other hand, performance audit, besides conducting a compliance audit, also examines whether the objectives of the programme/ activity/ Department are achieved economically and efficiently.

The primary purpose of the Report is to bring to the notice of the State Legislature, important results of audit. Auditing Standards require that the materiality level for reporting should be commensurate with the nature, volume and magnitude of transactions. The audit findings are expected to enable the Executive to take corrective actions to frame policies and directives that will lead to improved financial management of the organizations, thus, contributing to better governance.

This chapter explains the planning and extent of audit, provides a synopsis of the significant audit observations made during various types of audits and also briefly analyses the follow-up on the previous Audit Reports. Chapter-II contains Performance Audit of “Working of Fisheries Department” of Agriculture, Farmers Welfare and Co-operation Department of Government of Gujarat (GoG). Chapter-III contains Compliance Audit which includes two theme based audits *namely* (i) “Regulation of activities in the Protected Areas of Gujarat” under Forests and Environment Department and (ii) “Salinity Ingress Prevention Scheme” under Narmada, Water Resources, Water Supply & Kalpsar (Water Resources) Department and six individual audit observations on the expenditure transactions of Government Departments.

### 1.2 Audited Entity Profile

The Accountant General (Economic & Revenue Sector Audit), Gujarat conducts audit of the expenditure incurred by 10 Departments under the Economic Services Sector in the State. It includes audit at the Secretariat level, the field offices, 58 autonomous bodies and 76 public sector undertakings (PSUs) falling under the jurisdiction of these 10 Departments. Each Department is headed by Additional Chief Secretary/ Principal Secretary/ Secretary, who are assisted by Directors/ Commissioners/ Chief Engineers and subordinate officers under them.

The summary of fiscal transactions of Government of Gujarat (GoG) during the year 2015-16 and 2016-17 is given in **Table 1** below:

**Table 1: Summary of fiscal operations**

(₹ in crore)

Receipts			Disbursements				
Particulars	2015-16	2016-17	Particulars	2015-16	2016-17		
					Non-Plan	Plan	Total
<b>Section-A: Revenue</b>							
<b>Revenue receipts</b>	<b>97,482.58</b>	<b>1,09,841.81</b>	<b>Revenue expenditure</b>	<b>95,778.54</b>	<b>67,185.61</b>	<b>36,709.22</b>	<b>1,03,894.83</b>
Tax revenue	62,649.41	64,442.71	General services	32,876.05	34,312.51	1,491.84	35,804.35
Non-tax revenue	10,193.52	13,345.66	Social services	42,119.90	22,092.05	22,833.97	44,926.02
Share of Union taxes/ duties	15,690.43	18,835.39	Economic services	20,223.86	10,365.10	12,383.41	22,748.51
Grants from Government of India	8,949.22	13,218.05	Grants-in-aid and Contributions	558.73	415.95	0.00	415.95
<b>Section-B: Capital</b>							
Misc. Capital receipts	0.00	240.05	Capital Outlay	24,169.44	53.41	22,301.98	22,355.39
Recoveries of Loans and Advances	125.46	165.77	Loans and Advances disbursed	675.19	62.35	415.21	477.56
Public Debt receipts*	23,486.19	27,668.31	Repayment of Public Debt*	6,194.26	-	-	9073.17
Contingency Fund	14.16	3.75	Contingency Fund	3.75	-	-	0.00
Public Account receipts	65,131.92	58,958.90	Public Account disbursements	61,936.12	-	-	56,388.19
Opening Cash Balance	21,076.47	18,559.48	Closing Cash Balance	18,559.48	-	-	23,248.93
<b>Total</b>	<b>2,07,316.78</b>	<b>2,15,438.07</b>		<b>2,07,316.78</b>			<b>2,15,438.07</b>

**Source: Finance Accounts of the respective years.**

\* Excluding net transactions under ways & means advances and overdrafts.

### 1.3 Authority for Audit

The authority for audit by the C&AG is derived from the Articles 149 and 151 of the Constitution of India and the Comptroller and Auditor General's (Duties, Powers and Conditions of Service) Act, 1971. The C&AG conducts audit of expenditure of the Departments of Government of Gujarat under Section 13<sup>1</sup> of the C&AG's (DPC) Act. The C&AG is the sole auditor in respect of bodies/ authorities which are audited under Sections 19(2)<sup>2</sup>, 19(3)<sup>3</sup> and 20(1)<sup>4</sup> of the C&AG's (DPC) Act. In addition, C&AG also conducts audit

<sup>1</sup> This Section empowers C&AG to audit transactions made from the Consolidated Fund of the State, transactions relating to the Contingency Fund and Public Accounts, and trading, manufacturing, profit & loss accounts, balance sheets and other subsidiary accounts.

<sup>2</sup> Audit of the accounts of Corporations (not being Companies) established by or under law made by the Parliament in accordance with the provisions of the respective legislations.

<sup>3</sup> Audit of accounts, on the request of the Governor, of Corporations established by law made by the State Legislature.

<sup>4</sup> Where the audit of the accounts of any body or authority has not been entrusted to the C&AG by or under any law made by Parliament, he shall, if requested so to do by the Governor of a State, undertake the audit of the accounts of such body or authority on such terms and conditions as may be agreed upon between him and the Government.

of other autonomous bodies, under Section 14<sup>5</sup> of C&AG's (DPC) Act, which are substantially funded by the Government. Principles and methodologies for various audits are prescribed in the Regulations on Audit and Accounts, 2007 and the Auditing Standards and guidelines issued by the C&AG.

#### **1.4 Organisational structure of the Office of the Accountant General (E&RSA), Gujarat**

Under the directions of the C&AG, the Office of the Accountant General (Economic & Revenue Sector Audit), Gujarat conducts audit of Government Departments/ Offices/ Government Companies/ Statutory Corporations/ Autonomous Bodies/ Institutions under the Economic and Revenue Sector. The Accountant General (Economic & Revenue Sector Audit) is assisted by four Deputy Accountants General.

#### **1.5 Planning and conduct of Audit**

Audit process starts with the assessment of risks associated with various Government activities based on expenditure incurred, revenue earned, criticality and complexity of activities, delegated financial powers and responsibilities, analysis of internal controls and stake holders concerns. Previous audit findings are also considered in this exercise. Based on this risk assessment, the frequency and extent of audit is decided.

After completion of audit of each unit, Inspection Reports containing audit findings are issued to the heads of the Departments. The Departments are requested to furnish replies to the audit findings within one month of receipt of the Inspection Reports. On receipt of replies, audit findings are either settled or further action for compliance is advised. The important audit observations arising out of these Inspection Reports are processed for inclusion in the relevant Audit Reports, which are submitted to the Governor of the State under Article 151 of the Constitution of India.

During 2016-17, in the Economic Sector Audit Wing 5,746 man-days<sup>6</sup> were utilised for compliance audit of 128 units and performance audits. The audit plan covered units/ entities selected on the basis of risk assessment.

#### **1.6 Significant audit observations**

In the last few years, Audit has reported on several significant deficiencies in implementation of various programmes/ activities through performance audits, as well as on the quality of internal controls in selected Departments which impact the success of programmes and functioning of the Departments. Similarly, the deficiencies noticed during Compliance Audit of the Government Departments/ organisations were also reported upon.

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<sup>5</sup> This Section empowers the C&AG to audit receipts & expenditure of (i) a body/ authority substantially financed by grants or loans from the Consolidated Fund of the State and (ii) any body or authority where the grants or loans to such body or authority from the Consolidated fund of the State in a financial year are not less than ₹ one crore.

<sup>6</sup> Inclusive of the party days provided for the audit of PSUs. The related audit findings have been included in the Audit Report on PSUs separately.

The present Report contains one performance audit and eight compliance audit paragraphs (including two theme based audits) of expenditure audit pertaining to the Agriculture, Farmers Welfare and Co-operation Department, Forests and Environment Department, Narmada, Water Resources, Water Supply & Kalpsar (NWRWS&K) Department and Roads and Buildings (R&B) Department.

### **1.6.1 Performance Audit**

Chapter II of this report contains Performance Audit observations relating to “Working of Fisheries Department” of Agriculture, Farmers Welfare and Co-operation Department of GoG.

#### **Working of Fisheries Department**

Gujarat has a coast line of 1,600 kms. The area available for fishing activities extends from Lakhpat in Kachchh district to Umargaon in Valsad district.

The Performance Audit (PA) covering the period from 2012-13 to 2016-17 was carried out to assess whether the Department prepared detailed plans/ schemes/ programmes for the development of fisheries sector in the State; whether the funds made available were adequate and utilised in an economic, efficient and effective manner.

During 2012-17, the marine fish production of the State constituted about 20 *per cent* of the all India marine fish production while inland fish production of the State was little more than one and half *per cent* of the all India inland fish production. Audit observed that the Department prepared a Five Year Plan (2012-17) with cumulative targets to be achieved at the end of the Plan period.

Under Inland fisheries, against the potential of 2.49 lakh MT *per annum* of fish production, the Department has so far exploited 45 *per cent* only. In the Inland fisheries schemes, the achievement against the target of various sub-schemes ranged from Nil to 421.43 *per cent*. Audit observed higher achievement in some sub-schemes due to higher demand by the beneficiaries under those sub-schemes. The additional funds required were re-appropriated from sub-schemes where funds were not required. The Department did not have a marketing policy critical to its success but it was assisting the small vendors, processing plant owners, *etc.* through sub-schemes like insulated box, assistance to women self-help groups, upgradation of processing plants and machinery, *etc.*

The scheme for Fish Culture Cage under *Rashtriya Krishi Vikas Yojana* was not implemented during 2012-17. While in State plan scheme for Fish Culture Cage, no expenditure was incurred during 2014-15 and 2016-17. In both the schemes, while the Department parked the funds with other agencies, it reported utilisation of funds by showing achievement of financial targets.

The Department mapped only 12,165.80 ha of land for brackish water aquaculture upto September 2017 against the availability of 89,340 ha of land.

Besides, only 1,842.21 ha of land was brought under brackish water aquaculture during April 2012 to September 2017.

As on 31 March 2017, the total marine fish production of Gujarat was 6.99 lakh MT *per annum*, which was around 99 *per cent* of the marine fish potential available with the State. It contributed substantially (around 87 *per cent*) in the total fish production of the State. Under the schemes relating to Marine fisheries, the achievement against target under various sub-schemes ranged from Nil to 415 *per cent*. While nil/ low achievement in some sub-schemes was due to no demand or not taking up the work, higher achievement in other sub-schemes was due to higher demand. The infrastructure projects for upgradation of Fish Landing Centres and Fisheries Terminal Division financed by National Fisheries Development Board have been delayed due to slow pace of execution. The Department failed to carry out works for construction of nine new harbours as envisaged in the 12<sup>th</sup> Five Year Plan thereby depriving better facilities to the fishermen and fishing community.

The Department provided assistance/ subsidy under the Diesel VAT subsidy scheme. As on 31 March 2017, there was a shortfall in release of funds for subsidy of ₹ 310.50 crore by GoG to the Department for reimbursement to the eligible fishermen.

The Government of Gujarat (GoG) had not issued any notification, regulation and directions for adoption of uniform fishing ban period thereby defeating the objective of conserving and effective management of fishery resources. The Department did not conduct any impact evaluation of the schemes factoring in the specific needs of the inland, marine and brackish water fish farmers. Therefore, the Department could not assess whether the desired objectives of fisheries development were achieved.

## **1.6.2 Compliance Audit**

Accountant General (E&RSA) conducted compliance audit of 10 Departments of the Economic Sector of the State Government and their field offices and audit findings were reported to the respective Heads of the Departments through inspection reports. Chapter III of this report contains Department wise audit findings containing two theme based audit paragraphs of (i) “Regulation of activities in the Protected Areas of Gujarat” under Forests and Environment Department and (ii) “Salinity Ingress Prevention Scheme” under Narmada, Water Resources, Water Supply and Kalpsar (NWRWS&K) Department” and six individual paragraphs having significant audit findings relating to avoidable expenditure, excess payment, unfruitful expenditure and preparation of improper estimates amounting to ₹ 99.07 crore as narrated below:

### **FORESTS AND ENVIRONMENT DEPARTMENT**

#### **Regulation of activities in the Protected Areas of Gujarat**

The audit was conducted to examine activities related to regulation of activities in the Protected Areas for the period 2012-13 to 2016-17. The

Wildlife Sanctuaries (WLS), National Parks (NP) and Conservation Reserves (CR) are called Protected Areas (PAs). In Gujarat there are 28 PAs comprising of 23 WLS, four NPs and one CR.

There were reductions in the areas in the final notification for Eco-Sensitive Zones of Velavadar Black Buck National Park, Nalsarovar Bird Sanctuary and Hingolghadh Nature Education Sanctuary ranging from 51 to 94 *per cent*. The areas excluded were largely forest land.

Despite increase in population of lion during 2011-15 by 54.60 *per cent* outside the Gir PA and high instances of death of lions, no new protected habitat for lions has been approved since 2008.

The State Government implements projects for introduction of modern technology for conservation of Asiatic Lions as recommended by the Task Force. The progress in the project on “Wildlife Genomics Research Project” (LEOGEN) was slow. The objective of adoption of modern technology for integrated solutions to enhance conservation was not achieved.

Use of PA for carrying out any permitted activity including diversion of land is regulated under Section 29 of the Wildlife Protection Act (WPA), 1972. Further, if the diversion of land of PA involves forest land, necessary permissions have to be obtained under Forest Conservation Act (FCA), 1980.

Instances of violation of the provisions of Section 29 of the WPA and non-compliance of conditions of approvals were noticed during test-check. Sanction was accorded for establishment of windmills in the forest land of Wild Ass Sanctuary, Dhrangadhra in violation of provisions of WPA. The State Government granted permission to one user agency to lay transmission lines in the forest land for non-forest purpose without obtaining prior approval of the GoI in violation of the provisions of FCA, 1980.

The Net Present Value of ₹ 38.98 crore was not recovered from eight user agencies. Further, five *per cent* of the project cost was also not recovered from seven user agencies. Mitigation measures such as use of insulated conductors to prevent electrocution of birds, installation of bird reflectors on wires or conductors on the high voltage transmission lines were not implemented in Wild Ass Sanctuary, Dhrangadhra.

*(Paragraph 3.1)*

## **NARMADA, WATER RESOURCES, WATER SUPPLY AND KALPSAR (WATER RESOURCES)**

### **Salinity Ingress Prevention Scheme**

The audit of Salinity Ingress Prevention Scheme (SIPS) was done to assess the impact of implementation of the recommendations of High Level Committees (HLCs) on the salinity ingress in the four reaches covered by the HLCs viz., Una-Madhavpur, Bhavnagar-Una, Madhavpur-Maliya and Maliya-Lakhpat.

Audit observed that except in case of check dams and recharge wells the progress of works was very slow even after lapse of 25 to 39 years since the acceptance of report of HLCs by the GoG. No action/ limited action was taken for establishment of trial cum demonstration (TCD) farms, coastal land reclamation, gully plugging and afforestation. Even the plan document, detailed project report and budget estimates were not prepared for these activities. As against the original cost of ₹ 789.12 crore estimated by the HLCs, an expenditure of ₹ 1,045.65 crore was incurred up to March 2017. For remaining works, the estimate was revised to ₹ 2,544.79 crore. Thus, due to delay in implementation of the recommended works, cost of the scheme escalated by 455 *per cent*. The ground water legislation recommended by HLC in 1978 has not been enacted (March 2017).

In respect of three works of Tidal Regulators (TRs)/ *Bandharas* it was noticed that the works were awarded without acquisition of the required land resulting in the works remaining incomplete (March 2017) and expenditure of ₹ 11.10 crore being rendered unfruitful.

The HLCs suggested stopping of tidal ingress into the land by constructing TRs/ *Bandharas* near the mouth of the rivers to seal them. However, it was noticed that six TRs/ *Bandharas* were constructed beyond the tidal reach of the sea water. Hence, the sea water would still intrude and the *Bandharas* would not serve the purpose of prevention of sea water ingress but would only act as a check dam for creation of sweet water reservoir.

The GoG specifically directed that required land should be acquired before award of works. However, in the six works of spreading channel, the divisions awarded the works without land acquisition resulting in the incomplete works despite incurring cost of ₹ 25.77 crore.

The ground water quality in the salinity affected area are chemically analysed mainly on the basis of Total Dissolved Solids (TDS) and the ratio of chloride to carbonate plus bi-carbonate content in water. As compared to May 2012, in all the four reaches the number of wells under fresh water category have reduced in May 2016.

Audit also observed that in May 2012, in 291 out of 989 wells (29.42 *per cent*) the ground water level was below the sea level. Against, this in May 2016/ October 2016, in 200 out of 782 wells (25.57 *per cent*) the ground water level was below the sea level. Thus there was marginal improvement in ground water levels in these wells during the period.

**(Paragraph 3.2)**

Delayed payment of electricity bills in respect of pumping stations resulted in avoidable expenditure of ₹ 2.35 crore during the year 2013-14 to 2016-17.

**(Paragraph 3.3)**

Obtaining power connections for two pumping stations prior to completion of the pipeline works resulted in avoidable expenditure of ₹ 1.54 crore on account of payment of electricity charges.

*(Paragraph 3.4)*

## **ROADS AND BUILDINGS DEPARTMENT**

Delay in completion of work for approaches for the railway under bridge (RUB) on the missing link of Visavadar Dhari road has resulted in the RUB remaining unutilised after incurring an expenditure of ₹ 4.11 crore.

*(Paragraph 3.5)*

Non-adoption of star rate prevailing at the time of approval of Draft Tender Papers for payment of price variation for asphalt resulted in excess payment of price variation of ₹ 3.39 crore in two works.

*(Paragraph 3.6)*

Preparation of estimates without obtaining possession of land, structural design and analysing the soil bearing capacity test report led to revision of estimates increasing the cost by way of extra expenditure of ₹ 2.36 crore.

*(Paragraph 3.7)*

Non-inclusion of certain items of work in the scope of original estimated cost resulted in expenditure on excess/ extra items works ranging from 16 to 181 *per cent* of the tendered cost. It also resulted in non-recovery of testing charges of ₹ 1.51 crore.

*(Paragraph 3.8)*

## **1.7 Response of the Government to Audit**

### **1.7.1 Inspection Reports**

The Hand Book of Instructions for prompt Settlement of Audit Objections/ Inspection Report issued by the Finance Department, GoG in 1992 provides for prompt response by the Executive to the Inspection Reports (IRs) issued by the Accountant General (AG) to ensure rectifying action in compliance with the prescribed rules and procedures and fix accountability for the deficiencies, omissions *etc.*, noticed during the inspections. The Heads of Offices and next higher authorities are required to comply with the observations contained in the IRs, rectify the defects and omissions promptly and report their compliance to the AG within four weeks of receipt of the IRs. Periodical reminders are issued to the Heads of the Departments requesting them to furnish the replies expeditiously on the outstanding paragraphs in the IRs.

Four Audit Committee meetings were held during the year 2016-17 in respect of paragraphs contained in IRs pertaining to Economic Sector Departments.

As of 30 September 2017, 494 IRs (1,713 paragraphs) were outstanding against 10 Departments under the Economic Sector. Year-wise details of IRs and paragraphs outstanding are given in **Appendix I**.

### **1.7.2 Performance Audit and Draft Paragraphs**

One Performance Audit, two theme based audit Paragraphs and six Paragraphs were forwarded to the Principal Secretaries/ Secretaries of the concerned Departments between April and October 2017 with a request to send their responses within six weeks. The Reply of the Commissioner of Fisheries was received (September 2017) regarding the Performance Audit of “Working of Fisheries Department”. Reply of the GoG was awaited (December 2017). Exit conference was also held with the concerned Department in September 2017 on the audit findings included in the Performance Audit Report.

Out of eight compliance audit paragraphs (including two theme based audit), replies to five individual draft paragraphs (one relating to WR Department and four of R&B Department) and theme based audit of “Salinity Ingress Prevention Scheme” have been received up to December 2017. The replies of the Departments and the views expressed by them have been duly considered while finalising this Report.

### **1.7.3 Depositing the amount in Government Account at the instance of audit**

Deputy Conservator of Forests, South (Dang), Ahwa deposited net handling charges of ₹ 3.23 crore in January 2017 and ₹ 0.40 crore in March 2017 to the Government account after being pointed out in compliance audit of the Division in January 2017. The handling charges recovered during the period from May 2009 to October 2016 less the expenditure incurred by the division were lying in the Revolving Fund Account.

### **1.7.4 Follow up of Audit Reports**

Rule 7 of Public Accounts Committee (PAC) (Rules of Procedure) 1990 provides for furnishing Detailed Explanation (DE) by all the Departments of Government to the observations which featured in Audit Reports within 90 days of their being laid on the Table of the Legislative Assembly. These DEs are required to be furnished to the PAC after showing the same to the concerned Accountant General.

The Audit Reports for the year 2011-12, 2012-13, 2013-14, 2014-15 and 2015-16 were placed in Gujarat Legislative Assembly in April 2013, July 2014, March 2015, March 2016 and March 2017 respectively which included 56 paragraphs pertaining to seven Departments as detailed in **Table 2** below:

**Table 2: Details of paragraphs included in Audit Reports**

Sl. No.	Name of the Department	2011-12	2012-13	2013-14	2014-15	2015-16	Total	DEs received
1	Agriculture, Farmers Welfare & Co-operation	1	0	1	0	0	2	0
2	Narmada, Water Resources, Water Supply & Kalpsar (Water Resources)	3	6*	3*	5*	6	23	12
3	Ports & Transport	0	1	0	0	1	2	1
4	Roads & Buildings	5	4	5	3*	3	20	15
5	Forests & Environment	0	0	1	3*	0	4	1
6	Industries & Mines	0	0	0	2*	1	3	0
7	Finance Department	0	0	0	2*	0	2	0
<b>Total</b>		<b>9</b>	<b>11</b>	<b>10</b>	<b>15</b>	<b>11</b>	<b>56</b>	<b>29</b>

\*paragraph pertains to two Departments hence considered separate paragraph in each Department.

Out of 56 paragraphs for the year 2011-12 to 2015-16, DEs for 29 paragraphs have been received up to October 2017 and no DEs for 27 paragraphs for the year 2011-12 (two paragraphs), 2013-14 (two paragraphs), 2014-15 (12 Paragraphs) and 2015-16 (11 Paragraphs) were received as of December 2017.

# **CHAPTER-II**

## **PERFORMANCE AUDIT**



## CHAPTER II

### PERFORMANCE AUDIT

#### AGRICULTURE, FARMERS WELFARE AND CO-OPERATION DEPARTMENT

#### Working of Fisheries Department

##### *Executive summary*

Gujarat has a coast line of 1,600 kms. The area available for fishing activities extends from Lakhpat in Kachchh district to Umargaon in Valsad district.

The Performance Audit (PA) covering the period from 2012-13 to 2016-17 was carried out to assess whether the Department prepared detailed plans/schemes/programmes for the development of fisheries sector in the State; whether the funds made available were adequate and utilised in an economic, efficient and effective manner.

During 2012-17, the marine fish production of the State constituted about 20 *per cent* of the all India marine fish production while inland fish production of the State was little more than one and half *per cent* of the all India inland fish production. Audit observed that the Department prepared a Five Year Plan (2012 -17) with cumulative targets to be achieved at the end of the Plan period.

Under Inland fisheries, against the potential of 2.49 lakh MT *per annum* of fish production, the Department has so far exploited 45 *per cent* only. In the Inland fisheries schemes, the achievement against the target of various sub-schemes ranged from Nil to 421.43 *per cent*. Audit observed higher achievement in some sub-schemes due to higher demand by the beneficiaries under those sub-schemes. The additional funds required were re-appropriated from sub-schemes where funds were not required. The Department did not have a marketing polycritical to its success but it was assisting the small vendors, processing plant owners, *etc.* through sub-schemes like insulated box, assistance to women self-help groups, upgradation of processing plants and machinery, *etc.*

The scheme for Fish Culture Cage under *Rashtriya Krishi Vikas Yojana* was not implemented during 2012-17. While in State plan scheme for Fish Culture Cage, no expenditure was incurred during 2014-15 and 2016-17. In both the schemes, while the Department parked the funds with other agencies, it reported utilisation of funds by showing achievement of financial targets.

The Department mapped only 12,165.80 ha of land for brackish water aquaculture upto September 2017 against the availability of 89,340 ha of

land. Besides, only 1,842.21 ha of land was brought under brackish water aquaculture during April 2012 to September 2017.

As on 31 March 2017, the total marine fish production of Gujarat was 6.99 lakh MT *per annum*, which was around 99 *per cent* of the marine fish potential available with the State. It contributed substantially (around 87 *per cent*) in the total fish production of the State. Under the schemes relating to Marine fisheries, the achievement against target under various sub-schemes ranged from Nil to 415 *per cent*. While nil/ low achievement in some sub-schemes was due to no demand or not taking up the work, higher achievement in other sub-schemes was due to higher demand. The infrastructure projects for upgradation of Fish Landing Centres and Fisheries Terminal Division financed by National Fisheries Development Board have been delayed due to slow pace of execution. The Department failed to carry out works for construction of nine new harbours as envisaged in the 12<sup>th</sup> Five Year Plan thereby depriving better facilities to the fishermen and fishing community.

The Department provided assistance/subsidy under the Diesel VAT subsidy scheme. As on 31 March 2017, there was a shortfall in release of funds for subsidy of ₹ 310.50 crore by GoG to the Department for reimbursement to the eligible fishermen.

The Government of Gujarat (GoG) had not issued any notification, regulation and directions for adoption of uniform fishing ban period thereby defeating the objective of conserving and effective management of fishery resources. The Department did not conduct any impact evaluation of the schemes factoring in the specific needs of the inland, marine and brackish water fish farmers. Therefore, the Department could not assess whether the desired objectives of fisheries development were achieved.

## 2.1 Introduction

Gujarat has a coast line of 1,600 kms which is broken by several bays, inlets, estuaries and marshy lands. The area available for fishing activities extends from Lakhpat in Kachchh district in north to Umargaon in Valsad district in south. Important commercial varieties of fish namely Pomfret, Jew fish, Bombay duck, Shrimp, *etc.*, are caught in large quantities in these areas. Fishing is undertaken in two types of water namely inland<sup>1</sup> and marine<sup>2</sup>.

According to the Eighteenth Live Stock Census 2007, there are 1,058 fishing villages in the State, classified into Marine (260), Inland (716) and Estuarine<sup>3</sup> (82). These villages were inhabited by 5.59 lakh fishermen, out of which 2.18 lakh were active fishermen who were engaged in fishing, marketing of fish

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<sup>1</sup> Inland fishing refers to fish rearing areas in fresh and brackish water in land.

<sup>2</sup> Marine fishing refers to fish rearing areas in ocean water or sea waters and includes coastal, offshore and deep sea fishing.

<sup>3</sup> Estuarine occurs where fresh water from rivers and streams meets with the salty sea water. This environment supports a variety of fish habitats.

and repairing of boats/nets, etc. As at the end of March 2017, there were 34,848 fishing boats registered in the State.

## 2.2 Organisational Set up

The office of the Commissioner of Fisheries (Department) is the nodal department for regulation of fishing activities in the State. The Department regulates the application of Merchant Shipping Act, 1958 for registration of fishing boats and Gujarat Fisheries Act, 2003 for grant of fishing licence. The Department also implements Government schemes/ programmes and undertakes development of new infrastructure and other facilities for the fishing sector and community in the State.

The Department has three Fisheries Terminal Divisions, two Fishing Ports and 18 Fish Landing Centres. Besides, it has five fish seed production centres.

The Department works under the overall jurisdiction of the Agriculture, Farmers Welfare and Co-operation Department, Government of Gujarat (GoG). It is headed by Principal Secretary and assisted by Deputy Secretary and Under Secretary (Fisheries).

The Commissioner of Fisheries is assisted by a Joint Commissioner of Fisheries and a Deputy Commissioner of Fisheries, six Deputy/Assistant Directors, one Deputy Collector, one Chief Engineer and one Accounts Officer. There are five<sup>4</sup> regional offices headed by Deputy Directors and 35 division offices<sup>5</sup> under the regional offices, spread across the State.

## 2.3 Gujarat's contribution to All India Fish production

The details of marine and inland fish production in India as well as Gujarat for the period 2012-13 to 2016-17 are given in **Table 1** below:

**Table 1: Fish Production during 2012-17**

Year	Marine Fish production (in lakh MT)			Inland Fish production (in lakh MT)		
	All India	Gujarat	Share of Gujarat (in per cent)	All India	Gujarat	Share of Gujarat (in per cent)
2012-13	33.21	6.93	20.87	57.20	0.95	1.66
2013-14	34.43	6.95	20.19	61.41	1.03	1.68
2014-15	34.91	6.98	19.99	65.78	1.11	1.69
2015-16	36.30	6.97	19.20	71.65	1.12	1.56
2016-17 (Prov.)	NA	6.99	NA	NA	1.13	NA
<b>Total</b>	<b>138.85</b>	<b>34.82</b>		<b>256.04</b>	<b>5.34</b>	

(Source: Fisheries Statistics of the Department; Statistics for 2016-17 were not available)

The State's contribution to the all India marine fish production during the period 2012-13 to 2016-17 was substantial at around 20 per cent. Gujarat leads in marine fish production in India as on March 2016. However, the State's inland fish production averaged little more than one and half per cent of the all India inland fish production during the same period. As on March 2016, Gujarat ranked 17<sup>th</sup> in inland fish production in India. The growth in fish production

<sup>4</sup> Surat, Vadodara, Ahmedabad, Rajkot and Veraval.

<sup>5</sup> Headed by Assistant Director/ Superintendent of fisheries.

within the State as well as percentage share of both marine and inland fisheries of the State in the all India fish production remained almost consistent during the period 2012-13 to 2016-17.

## 2.4 Budgetary Provision and Expenditure

GoG provides funds to the Department for implementation of schemes by way of budgetary allocations in the State Plan schemes. During the year 2012-13 to 2016-17, the GoG released funds of ₹ 384.31 crore (including share of GoI) to the Department against which it incurred an expenditure of ₹ 383.34 crore *i.e.*, almost 100 *per cent* of the funds made available to the Department was utilised during the review period.

Further, the Department also received funds for projects under *Rashtriya Krishi Vikas Yojana* (RKVY) and infrastructure projects financed by National Fisheries Development Board (NFDB). Against the receipt of funds of ₹ 17.20 crore under RKVY and ₹ 22.34 crore from NFDB, the Department incurred expenditure of ₹ 4.87 crore and ₹ 11.86 crore respectively.

In addition to the above, a non-plan scheme on Diesel VAT subsidy to fishermen with a total expenditure of ₹ 421.23 crore during 2012-17 was also operated.

## 2.5 Scope of Audit

The Performance Audit (PA) was conducted during December 2016 to June 2017 and covered the period from 2012-13 to 2016-17. Out of 22 Plan schemes<sup>6</sup> in operation during 2012-17, nine schemes were selected for test-check in audit (**Appendix II**). Further, under these nine schemes, 35 sub-schemes involving expenditure of ₹ 145.99 crore were selected for detailed test-check in audit. Besides, the Non Plan scheme of Diesel VAT Subsidy was also selected for detailed audit examination. In addition to above, six projects approved under RKVY and seven infrastructure projects financed by NFDB were also reviewed. Nine offices<sup>7</sup> of the Department involving expenditure of ₹ 361.52 crore (44.93 *per cent* of total expenditure<sup>8</sup>) on the above sub-schemes/non-plan scheme were selected for detailed scrutiny.

## 2.6 Audit Objectives

The objectives of the Performance Audit were to assess whether:

- the Department prepared detailed plans for the development of fisheries sector and implementation of schemes/programmes relating thereto in the State;
- the funds made available to the Department were adequate and were utilised in an economic and efficient manner;

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<sup>6</sup> Six Inland fisheries (**Appendix III**), Eight Marine fisheries, (**Appendix IV**), Four Welfare schemes and Four General schemes.

<sup>7</sup> Head office and division offices at (i) Anand, (ii) Valsad, (iii) Rajkot, (iv) Veraval, (v) Porbandar, (vi) Dahod, (vii) Himatnagar and (viii) Surat.

<sup>8</sup> Total expenditure under plan scheme ₹ 383.34 crore *plus* expenditure on Diesel VAT Subsidy Scheme under non-plan ₹ 421.23 crore.

- the implementation of schemes/works was efficient and effective and the intended objectives of the schemes/works were achieved; and
- internal control and monitoring mechanisms were effective.

## 2.7 Audit Criteria

The criteria used for assessing audit objectives were *provisos* of Gujarat Fisheries Act, 2003, Gujarat Fisheries Rules, 2003, Merchant Shipping Act, 1958; Five Year Plan, Annual Plan and Budget proposals for the grants; Guidelines for implementation of schemes/ programmes; and Gujarat Budget Manual, Gujarat Financial Rules and Gujarat Treasury Rules.

## 2.8 Audit Methodology

The audit objectives were explained to the Department in an entry conference held on 25 January 2017. During the course of audit, records were examined, discussions were held with department officials, site visits were made, audit queries issued and replied by the department. The draft Performance Audit report issued in July 2017 was discussed with the Secretary (Animal Husbandry, Cow Breeding, Fisheries & Co-operation) and other officials of the Department during the exit conference held on 8 September 2017. The reply of the Commissioner of Fisheries was received on 19 September 2017 and the views expressed by them have been considered while finalising this Report. The reply of GoG is awaited (December 2017).

## 2.9 Audit Findings

The audit findings on aspects of planning, financial management, implementation of schemes/infrastructure projects and internal control and monitoring mechanism are discussed in the succeeding paragraphs.

## 2.10 Adequacy of Planning

Planning requires not only setting up long term targets, but also clearly laying out targets to be achieved within medium and short term. Audit observed that the Department did not have any marketing policy critical to its success. Scrutiny of records revealed that the Department prepared a five year plan for the period 2012-17 which showed only the cumulative targets of a few components<sup>9</sup> of the schemes, to be achieved at the end of the plan period. The five year plan, however, did not indicate year wise targets and the matching financial outlays for various components included in the plan period.

The annual operational budget (*Kamgiri Andajpatra*) prepared by the Fisheries Division under GoG depicts the expenditure incurred on various schemes (Central and State) upto previous years and the estimated expenditure to be incurred in the current year to which the annual operational budget/estimates pertains.

<sup>9</sup> Development of Brackish Water Aquaculture, Development of Fishing Harbours, Development of Fish Landing Centre, Fish production, Mechanisation of boats and Fish seed production.

Audit observed that the physical targets were fixed in the annual operational budget based on the achievements of the earlier years. As such these did not flow from the five year plan of the Department. These physical targets fixed under various schemes were not being revised based on the revised financial outlay allocated for the schemes. Even, the physical targets fixed for field offices as per original budget estimates were not revised in accordance with the revised financial outlay for the field offices. The Department stated (September 2017) that necessary instructions have been issued to the concerned officials to take due care in future.

## 2.11 Financial Management

### 2.11.1 Allocation and expenditure

Each year, GoG approves budget against scheme-wise proposals submitted by the Department. The Department also submits revised budget estimates in November each year after assessing the expenditure incurred from the amounts released under each scheme. The year-wise details of original budget estimates, revised budget estimates, funds allotted, expenditure incurred, *etc.*, during 2012-17 are given in **Table 2** below:

**Table 2: Original Budget Estimates, Revised Budget Estimates and Expenditure**

(₹ in crore)

Year	Budget Estimates			Allotted budget	Expenditure	Percentage of variation between original and revised budget estimates	Percentage of expenditure to original budget estimates
	Original	Revised	Difference				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
2012-13	77.00	72.76	4.24	73.63	73.19	5.51	95.05
2013-14	80.00	58.95	21.05	53.26	53.20	26.31	66.50
2014-15	86.59	70.79	15.80	60.88	60.70	18.25	70.10
2015-16	116.97	115.15	1.82	95.00	94.98	1.56	81.20
2016-17	357.50	108.32	249.18	101.54	101.27	69.70	28.33
<b>Total</b>	<b>718.06</b>	<b>425.97</b>	<b>292.09</b>	<b>384.31</b>	<b>383.34</b>		

(Source: Plan reports of the Department)

As could be seen from the **Table 2**, there were variations in the original budget estimates and revised budget estimates during 2012-17 ranging from two (2015-16) to 70 *per cent* (2016-17). Further, the actual expenditure against the original budget estimates also varied from 28 to 95 *per cent* during the period. This indicated that the original budget estimates were not prepared based on realistic projections with reference to various schemes implemented by the Department except during 2012-13. During 2016-17, against the original provision of ₹ 357.50 crore, the Department revised its requirement to ₹ 108.32 crore. The downward revision was mainly because GoI had not released its part of funds (40 *per cent*) under a partial centrally sponsored scheme on 'Construction of docks, berths and jetties'. Consequently, the GoG also did not release its 60 *per cent* share.

The Department stated (September 2017) that necessary instructions had been given to all concerned to take due care in future.

## 2.12 Inland Fisheries

India has potential of 45 lakh MT *per annum* fish production in Inland fisheries. Gujarat has potential to produce 2.49 lakh MT<sup>10</sup> *per annum* of fish from inland fisheries. To promote inland fisheries and provide support to the fishermen and fishing sector, the Department implemented six schemes and 61 sub-schemes during 2012-17 of which we test-checked four schemes and 23 sub-schemes.

### 2.12.1 Target and achievement of Inland fish production

The target and achievement in inland fish production in Gujarat during 2012-17 is given in **Table 3** below:

**Table 3: Inland production – Target vis-à-vis Achievement**

Year	Inland fish production		
	Target (in MT)	Production (in MT)	Achievement (in per cent)
2012-13	85,000	94,930	111.68
2013-14	95,000	1,02,913	108.33
2014-15	96,000	1,11,479	116.12
2015-16	1,05,000	1,12,232	106.89
2016-17 (Provisional)	1,10,000	1,13,272	102.97

(Source: Fisheries Statistics of the Department and information furnished by the Department)

The Department achieved the target set for inland fish production during 2012-17. The inland fish production increased from 0.95 lakh MT in 2012-13 to 1.13 lakh MT in 2016-17. However, against the potential of 2.49 lakh MT, the Department has so far exploited the potential to the extent of 45 *per cent* only leaving a huge untapped potential. The Department needs to revisit its plans/programmes and prioritise development of inland fisheries to exploit the full potential of inland fisheries in the State.

The Department stated (September 2017) that in order to increase inland fish production, programme for “Mission Fingerlings” and “Fish Culture Cage” have been implemented.

### 2.12.2 Target and achievement of schemes/sub-schemes

The Department operated scheme for fish seed production and development of inland fisheries (FSH-2)<sup>11</sup> with the objective of creating self-employment opportunities to the people and increase fish production. Besides, two other schemes for production of fish through Fish Farmers Development Agency (FSH 4) and development of fisheries in brackish water (FSH 5) with its various sub-schemes were also operated by the Department.

The targets vis-à-vis achievement of the schemes/sub-schemes in Inland fisheries during 2012-17 are given in **Appendix III**. A review of target and achievements of the schemes revealed the following:

<sup>10</sup> As per the Fisheries Statistics of Gujarat-2015 prepared by Kamdhenu University.

<sup>11</sup> The scheme was divided in to three categories *viz.*, FSH-2 (Normal), FSH-2 (Tribal) and FSH-2 Schedule Caste Sub Plan (SCSP).

- Under FSH-2 scheme (Normal), the achievement against target of various sub-schemes during 2012-17 ranged from Nil to 421.43 *per cent*. Under FSH-2 (SCS Plan), it ranged from Nil to 166.25 *per cent*. Similarly, in FSH-2 (Tribal), the achievement ranged from 39.47 to 217 *per cent*. Among the sub-schemes, excess achievement against the target was observed in storage of fish seed, boat and net, fish sales assistance to women (normal) and patrolling cum fish collection boat(normal). On the other hand, Audit observed under-achievement of targets in the sub-schemes of assistance for plastic crate, hatchery for colorful fish, rearing space development, fish seed hatchery, aerator assistance<sup>12</sup>, purchase of insulated box, fish culture cage and fishermen housing (SCSP and Tribal) during 2012-17.
- In the scheme on production of seeds through Fish Farmer Development Agency (FSH-4), the achievement was very low ranging from 1.54 to 3.69 *per cent*.
- In the scheme on development of fisheries in brackish water (FSH-5), the achievement against target of various sub-schemes ranged from Nil to 107.89 *per cent*. Higher achievement was observed in sub-schemes of training and aerator assistance. The sub-schemes of assistance for master mapping, shrimp farm construction, road infra development, shrimp farm renovation, sea weed culture and polythene liner-bird/dog fencing had low achievement against the targets fixed.
- As regards marketing of fisheries products, the Department was assisting the small vendors, processing plant owners, *etc.*, through sub-schemes like insulated box, assistance to women self-help groups, upgradation of processing plants and machinery, *etc.* During 2017-18, the Department introduced two new schemes *viz.*, construction of fish market in Surat Municipal Corporation (₹ 3 crore) and construction of processing plant to Co-operative societies (approximately ₹ 5crore).

Audit observed (December 2016 to June 2017) that the higher achievement in some sub-schemes was due to higher demand or requirement of components under the sub-schemes by the beneficiaries. The additional funds were re-appropriated from other sub-schemes where funds were not required. Nil or low achievement were due to lower demand for the components of the sub-schemes and deficiencies in their execution.

The Department needs to assess the requirement of various components of the sub-scheme and fix the targets based on demand of various components.

In reply, the Department stated (September 2017) that in future, the demand for the component and achievement of earlier years' would be considered while fixing targets.

### **2.12.3 Adequacy of production of spawn and fingerling**

The Department undertakes fish seed production at its farms and seasonal ponds for own usage as well as supplying spawn, fry and fingerlings to lessees of

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<sup>12</sup> Aerators are various devices used for aeration, or mixing air with another substance such as soil or water. These devices are used to add oxygen to the water. Aerator assistance is to purchase such aerator.

ponds and reservoirs for fish production. The fish seed production process involves rearing of (i) spawn to fry and (ii) fry to fingerling. The spawn to fry is reared in 25 days. Similarly, the stage from fry to fingerling rearing requires 50 days. The fry or fingerling so reared, are stocked in the reservoirs and ponds for ultimate fish production. The recovery rate of spawn to fry is estimated at 30 *per cent* whereas from fry to fingerling, recovery rate is estimated at 35 *per cent*. Overall, the recovery rate of spawn to fingerling is estimated at 12 *per cent*.

The Department undertakes spawn production at its seven hatcheries. The details of spawn production<sup>13</sup> for the years 2015-16 and 2016-17 are shown in **Table 4** below:

**Table 4: Spawn production in Hatcheries of the Department**

(Number in crore)

Name of the Office/ Farm	2015-16		2016-17	
	Target	Achievement	Target	Achievement
Valsad (Palan)	13	10.62	13	12.21
Surat (Pipodara, Kosamada)	26	29.49	29	23.48
Ukai	25	25.60	27	24.68
Anand (Lingda)	12	10.98	12	11.04
GFCCAL (Valod, Vankaner)	14	18.15	14	17.02
<b>Total</b>	<b>90</b>	<b>94.84</b>	<b>95</b>	<b>88.43</b>

(Source: Information furnished by the Department)

Audit observed that the Department exceeded its targets in 2015-16 but fell short of target in 2016-17 by seven *per cent*. However, it had not linked its targets for spawn production with the estimated requirement of fingerlings for the years 2015-16 and 2016-17. The total requirement of fingerlings for the year 2015-16 and 2016-17 was estimated at 11.80 crore and 18.26 crore, respectively. The Department considers recovery of fingerling from the spawn at the rate of 12 *per cent*. At this rate, the Department was required to produce 98.33 crore spawns in 2015-16 and 152.17 crore spawns in 2016-17. The actual production was less than required by 3.55 *per cent* in 2015-16 and by 41.89 *per cent* in 2016-17 respectively. Audit observed that the Department did not have a system of backward planning for spawn production from its own hatcheries to achieve the targeted fish production. Audit also observed that due to inadequate supply of fingerlings, the lessees obtained fingerlings from the private hatcheries. During 2012-17, 15.80 lakh fingerlings were purchased from private parties for which the Department gave subsidy to lessees amounting to ₹ 2.30 lakh.

The Department stated (September 2017) that due to seepage in fish ponds, geographical condition and irregular rainfall, stage wise rearing of spawn could not be done at optimum level. Further, under the programme of Mission Fingerlings, it planned to develop eight hatcheries and 315 ha of rearing space to achieve the target for production of fingerlings.

Thus, the Department corroborated that it was not able to provide required spawn for production of targeted fingerlings.

<sup>13</sup> Details of spawn production for the period prior to 2015-16 were not made available to audit.

#### 2.12.4 Fish seed rearing centres

The Department has 25 fish seed rearing centres comprising hatcheries and ponds at various places spread across the State. Nursery ponds are used to stock the fish seed for rearing from spawn to fry while rearing ponds are used for rearing the fry to fingerling. Stocking ponds are used for both rearing the fry to fingerling and stocking fingerling before its supply to the lease holders for fish production. The details of area of ponds (Nursery, Rearing and Stocking) in the 25 fish seed rearing centres and their status as on 31 March 2017 are given in **Table 5** below:

**Table 5: Status of ponds as on 31 March 2017**

Sl. No.	Nature of Ponds	Total No. of ponds	Area (in ha)	No. of ponds in use	Area (in ha)	Percentage of number of ponds in use
1	Nursery	158	8.08	105	5.86	66.46
2	Rearing	278	57.37	192	29.81	69.06
3	Stocking	38	12.67	24	9.01	63.16
<b>Total</b>		<b>474</b>	<b>78.12</b>	<b>321</b>	<b>44.68</b>	<b>67.72</b>

(Source: Information furnished by the Department)

Out of the total 474 ponds, 321 ponds were actually in use as on 31 March 2017. The utilisation of nursery, rearing and stocking ponds for fish rearing purpose was 66, 69 and 63 *per cent*, respectively. The non-utilisation of 153 ponds was mainly due to seepages and growth of vegetation in ponds, insufficient rain, ponds under renovation, shortage of technical staff, *etc.* The Department stated (September 2017) that efforts are being made to make more ponds available for fish seed production/rearing.

#### 2.12.5 Development of Inland fish production through Fish Culture Cage

**2.12.5.1** In 2012-13, 'Fish culture in cages' was first introduced as an RKVY project under National Mission for Protein Supplement with the objective of increasing the inland fish production, increasing the earnings of the fishermen and creating new opportunities for employment. The project envisaged installation of 240 cages with an estimated fish production of 2.5 metric ton (MT) *per cage* and 600 MT *per annum*. The Department invited (December 2012) tender for purchase of 192 cages worth ₹ 3.20 crore. The tender was rejected (August 2013) by GoG as the tender documents were faulty. Subsequent tenders invited in 2015 and 2016 were also cancelled and could not be finalized due to non-receipt of qualified bids, non-finalisation of tender within time limit, adverse lab test reports, *etc.* In the meantime, the Department parked (January 2015) ₹ 9.18 crore received in March 2013 under RKVY in liquid deposits with Gujarat State Financial Services Limited (GSFSL) which are still invested there (December 2017). However, the Department reported utilization of funds to GoG. Thus, despite having requisite funds for the project, the non-finalisation of tender led to its non-implementation and consequently, the non-achievement of the objective besides funds lying idle for more than five years (December 2017).

The Department stated (September 2017) that the project would be implemented during the current year and tenders had been invited in September 2017.

**2.12.5.2** Apart from the RKVY scheme of 2012-13 for fish culture cages, GoG introduced (August 2014) a sub scheme called Field Level Demonstration which provided financial assistance of 90 *per cent* of the cage unit cost to the beneficiaries. Under the scheme, stocking of fish seeds is done in a cage, fish feed is provided from outside and rearing is undertaken in suitable conditions. The cost of each cage unit consisting of a cage, fish seed and fish feed was estimated at ₹ 3 lakh *per unit*.

The scheme was implemented from 2014-15 onwards. The target and achievement under the scheme is given in **Table 6** below:

**Table 6: Target *vis-à-vis* Achievement of Cage Units**

Year	Physical (number of cages)			Financial (₹ in lakh)		
	Target	Achievement	Percentage	Target	Achievement	Percentage
2014-15	67	36	54	181	105.30	58
2015-16	67	20	30	181	27.00	15
2016-17	120	0	0	180	0 <sup>14</sup>	0
<b>Total</b>	<b>254</b>	<b>56</b>	<b>22</b>	<b>542</b>	<b>132.30</b>	<b>24</b>

(Source: Scheme files of the Department)

It can be seen from **Table 6** that during 2014-15, 2015-16 and 2016-17 achievement against physical targets was only 54 *per cent*, 30 *per cent* and nil respectively and of financial targets was only 58 *per cent*, 15 *per cent* and nil, respectively. The low coverage was due to lesser number of applications received from beneficiaries.

Audit observed that:

- As per the Department's interpretation of the scheme, assistance was to be given for the cage unit only and no support was to be provided for fish seed and fish feed. Accordingly, the financial assistance granted to beneficiaries for 2014-15 (given in 2015-16) and 2015-16 was restricted to ₹ 1.35 lakh *per cage per application*. Therefore, the Department did not provide the financial assistance as envisaged under the scheme.
- During 2014-15, 39 applications were received. However, the empanelment of cage suppliers was delayed and finalized at the end of 2014-15. As a result, the Department could not release any assistance to the beneficiaries during 2014-15. Instead, the Department parked ₹ 105.30 lakh<sup>15</sup> with various Fish Farmers Development Agencies (FFDA). The Department released financial assistance of ₹ 52.65 lakh<sup>16</sup> during 2015-16. The balance amount of ₹ 52.65 lakh was still lying with various FFDA's (December 2017).
- In 2016-17, the scheme was modified to give financial assistance of 50 *per cent* of the unit cost to the beneficiaries. The Department received ₹ 93 lakh against 62 applications received from beneficiaries. Again, since the empanelment of suppliers of the unit was delayed and finalised only in

<sup>14</sup> ₹ 93 lakh received during 2016-17 was not utilised but parked by the Department with GSFSL and hence nil achievement is shown.

<sup>15</sup> Received at the rate of ₹ 2.70 lakh *per unit*.

<sup>16</sup> Restricted only to the cost of ₹ 1.35 lakh *per cage*.

March 2017, no assistance was released to the beneficiaries in 2016-17. Funds worth ₹ 93 lakh received under the scheme were parked (May 2017) by the Department in GSFSL to avoid lapse of funds.

**Audit noticed that despite the fact that expenditure on the scheme was not incurred in the year of release i.e., 2014-15 and 2016-17 and the funds were parked with other agencies, the Department had reported utilization of funds by showing achievement of financial targets. Thus, the objective of promoting cage culture technology to increase fish production was not fully achieved.**

The Department stated (September 2017) that the funds lying with FFDA was received during 2014-15 and with GSFS pertaining to 2016-17 would be utilised in 2017-18.

Reply is not convincing because it does not state the reasons for restricting the assistance to cage unit only during 2014-15 and 2015-16. Besides, no justification was given for reporting utilisation of funds though the same were parked with other agencies.

## **2.13 Leases**

GoG had formulated (July 2003) the policy for leasing out village ponds/reservoirs under the control of village panchayats. Similarly, GoG formulated (February 2004) leasing policy for leasing out reservoirs i.e., irrigation ponds/reservoirs under the jurisdiction of irrigation department in the State for Inland Fisheries. As on 30 November 2016, there were 463 ponds/reservoirs under the control of village panchayats/irrigation department leased out in terms of the above two policies. The observation on the leasing of reservoirs/ponds are discussed below:

### **2.13.1 Delay in deciding lease of Vatrak reservoir led to loss of fish production and revenue**

As per conditions of the leasing policy of 2004, Gujarat Fisheries Central Cooperative Association Limited (GFCCAL) was to be given one reservoir on lease in each district at upset price<sup>17</sup>. The lease policy also provided that a *Mandali*/ Society/Institute which had any Government dues outstanding was ineligible for allotment of pond/reservoir on lease. Further, while the Department had full authority for implementation and administration of lease policy, only the GoG was authorized to give concessions, issue clarifications and decide on disputes on the lease policy.

GFCCAL requested (28 September 2011) allotment of Vatrak reservoir on lease. The upset price of the Vatrak reservoir was fixed by the Department at ₹ 0.03 crore. GFCCAL had outstanding dues of ₹ 3.26 crore payable to the Department towards various loans<sup>18</sup>, interest, penal interest *etc.*, as on March 2011. After protracted correspondence between the Department and the

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<sup>17</sup> It refers to minimum or reserve price at which allotment would be made on lease.

<sup>18</sup> Government loan, Working capital loans, NNP Machinery Loan, Cyclone Loan, NCDC Project Loan, EEC Project Loan and Interest-free Loan.

GoG on GFCCAL's request, the GoG directed GFCCAL in December 2014 to pay the outstanding dues before allotment of the reservoir on lease. GFCCAL paid (March 2015) the principal of ₹ 0.61 crore and requested (May 2015) GoG to waive the interest and penal interest of ₹ 2.91 crore (period upto March 2016).

Despite the Department's repeated request to GoG to take a decision on leasing of Vatrak reservoir during 2011 -2017, the matter was still pending at GoG level (May 2017). The delay in decision resulted in Vatrak reservoir lying idle and not available for fish production during this period. This also led to potential revenue loss towards lease rent of ₹ 1.68 crore<sup>19</sup> and loss of fish production of 325 MT<sup>20</sup> per annum.

The Department stated (September 2017) that in view of the non-payment of dues by GFCCAL, it has initiated the process of inviting fresh tenders for awarding lease of Vatrak reservoir. The reply notwithstanding, the delay in taking decision led to idling of the reservoir for more than five years.

## 2.14 Brackish Water Aquaculture

Out of the total area of 12.40 lakh ha<sup>21</sup> of land with brackish water in India, the potential for development of brackish water aquaculture was estimated at 8.67 lakh ha in the country. The production of shrimps is undertaken in brackish water. In the 12<sup>th</sup> five year plan (FYP), the Department had identified 89,340 ha of land available in Gujarat for the development of aquaculture in brackish water. Of the above, the Department targeted to bring in 50,000 ha of land under brackish water aquaculture in 12<sup>th</sup> FYP. The observations on the Department's efforts to develop brackish water aquaculture are discussed as under:

### 2.14.1 Land brought under brackish water aquaculture

With a view to bring brackish water under aquaculture, mapping is done to identify suitable land from the available land for aquaculture development. After mapping, further action is taken for allotment of land by the Revenue Department. **Table 7** below shows the progress in mapping and allotment of land for brackish water aquaculture:

**Table 7: Allotment of suitable land for Brackish Water Aquaculture as on September 2017**  
(Area in ha)

Sl. No.	Name of the District	Land available for aquaculture	Master Mapping done	Land allotted (March 2012)	Land allotted (September 2017)
1	Valsad	5,138.73	648.36	590.31	590.31
2	Navsari	12,037.18	3,813.34	1,705.44	3,214.35
3	Surat	19,200.00	1,178.33	1,168.50	1,331.50
4	Bharuch	33,208.00	3,178.56	1,436.00	1,496.00
5	Bhavnagar	1,125.00	673.00	51.14	111.44
6	Amreli	2,001.00	20.00	226.00	226.00
7	Junagadh <sup>22</sup>	1,493.00	722.00	2.00	52.00

<sup>19</sup> ₹ 0.28 crore (amount paid by earlier lessee for Vatrak reservoir) x 6 years (2011-12 to 2016-17).

<sup>20</sup> Average production at Vatrak reservoir for the period 2008-09 to 2010-11.

<sup>21</sup> Fisheries Statistics of the Department.

<sup>22</sup> This includes 50.00 ha in the newly constituted district of Devbhoomi Dwarka, which is included in 'Master mapping done' and 'Land allotted'.

Sl. No.	Name of the District	Land available for aquaculture	Master Mapping done	Land allotted (March 2012)	Land allotted (September 2017)
8	Jamnagar	4,104.00	1,351.21	00.00	00.00
9	Rajkot	3,200.00	330.00	00.00	00.00
10	Kutch	7,834.00	00.00	00.00	00.00
11	Porbander <sup>23</sup>	00.00	251.00	00.00	00.00
<b>Total</b>		<b>89,340.91</b>	<b>12,165.80</b>	<b>5,179.39</b>	<b>7,021.60</b>

(Source: 12<sup>th</sup>FYP 2012-17 of the Department and information furnished by the Department)

As can be seen from the **Table 7**, till September 2017, mapping of only 12,165.80 ha of land had been done. Thus, the Department failed to map the suitable land as per target fixed in 12<sup>th</sup> FYP. Out of the mapped land, 7,021.60 ha land had been actually allotted by the Revenue Department for brackish water aquaculture (September 2017). Thus, against the target of bringing in 50,000 ha of land under brackish water aquaculture during 12<sup>th</sup> FYP, only 1,842.21 ha of land was actually brought under brackish water aquaculture during April 2012 to September 2017.

#### **2.14.2 Status of lease of saline land for brackish water aquaculture**

The Revenue Department, GoG allotted land for brackish water aquaculture as per its land lease policy. As per the policy, the allotment of land would be made for brackish water aquaculture only after the Department did mapping of the suitable land. Audit observed that the Department had forwarded 29 applications to the Revenue Department during 2013-2016, which were pending for allotment as on June 2017. These applications involved saline land admeasuring 3,395.94 ha.

Audit observed that the Department did not initiate any follow up action after submission of 'Tumar'<sup>24</sup> to Revenue Department which resulted in delay in achievement of objectives of increasing shrimp production and further development of brackish water aquaculture.

The Department stated (September 2017) that the matter had been followed up with Revenue Department to clear pending 'Tumar'.

The reply of the Department was not supported by any records relating to the follow-up action taken (till August 2017) by the Department with the Revenue Department.

#### **2.14.3 Performance against targets for production of shrimps**

The Department had targeted bringing in 50,000 ha of land under brackish water aquaculture with an estimated shrimp production of 67,530 MT *per annum* in the 12<sup>th</sup> FYP. One of the important objectives envisaged in FYP was to increase shrimp production<sup>25</sup> for exports. This was with a view to earn more foreign exchange as well as utilise land for brackish water aquaculture to create more rural employment. It was estimated that 43,000 MTs of shrimp would be

<sup>23</sup> Master Mapping has been done based on the applications received from the beneficiaries though not included in the original 12<sup>th</sup> FYP.

<sup>24</sup> File of records relating to the applicant compiled by the Department and submitted to the Revenue Department.

<sup>25</sup> Shrimp farming is an aquaculture business that exists in a marine or freshwater environment, producing shrimp or prawns.

exported *per annum* by the end of 2016-17. The production of shrimps from brackish water for the year 2012-17 is given in **Table 8** below:

**Table 8: Shrimp Production vis-à-vis total Inland Fish Production**

Sl. No.	Year	Shrimp production(in MT)	Total Inland fish production (in MT)	Percentage of shrimp production
1	2012-13	5,413	94,930	5.70
2	2013-14	9,858	1,02,913	9.58
3	2014-15	27,058	1,11,479	24.27
4	2015-16	31,664	1,12,232	28.21
5	2016-17 (Provisional)	36,608	1,13,272	32.32
<b>Total</b>		<b>1,10,601</b>	<b>5,34,826</b>	<b>20.68</b>

(Source: Fisheries Statistics of the Department)

It could be seen from **Table 8** that the shrimp production from brackish water aquaculture contributed 21 *per cent* of the total Inland fish production in the State during 2012-17. Though the production of shrimps had gained pace during 2012-17, the envisaged annual target of production of 67,530 MT by 2016-17 was not achieved.

The Department stated (September 2017) that the target to bring 50,000 ha of land for brackish water aquaculture in 12<sup>th</sup> FYP was decided based on the preliminary feasibility report of Marine Products Export Development Authority, Valsad.

The reply is not convincing. The Department did not conduct any detailed survey/investigation or take further action based on the preliminary feasibility report. Further, the reply did not state the reasons for slow mapping of land already identified for brackish water aquaculture.

## 2.15 Marine Fisheries

Against the potential of 39 lakh MT *per annum* of marine fisheries in India, Gujarat has potential of 7.03 lakh MT *per annum* of marine fisheries. As on 31 March 2017, the total marine fish production of Gujarat was 6.99 lakh MT *per annum* which constituted 87 *per cent* of total fish production in the State. Gujarat leads in production of marine fisheries in India.

With a view to support marine fisheries, GoG implemented various schemes for equipping the fishermen, infrastructure development projects, non-plan scheme of Diesel VAT subsidy, upgradation projects financed by National Fisheries Development Board and RKVY projects. During 2012-17, the Department implemented eight schemes and 50 sub-schemes (**Appendix IV**) of which we test checked the records of three schemes and nine sub-schemes.

### 2.15.1 Target and achievement of Marine fish production

The target and achievement in marine fish production in Gujarat during 2012-17 is given in **Table 9** below:

**Table 9: Marine fish production – Target vis-à-vis Achievement**

Year	Marine fish production		
	Target (in lakh MT)	Production (in lakh MT)	Achievement (in per cent)
2012-13	7.00	6.93	99.00
2013-14	7.00	6.95	99.29
2014-15	7.00	6.98	99.71
2015-16	7.00	6.97	99.57
2016-17 (Provisional)	7.00	6.99	99.86

(Source: Fisheries Statistics of the Department and information furnished by the Department)

The Department has been very near to achieving the target set for marine fish production during 2012-17.

### 2.15.2 Target and Achievement of schemes/sub-schemes

The Department operated schemes for providing pre-requisite facilities at various fishing centres (FSH-7) and mechanisation of traditional fishing crafts (FSH-8) with the objectives of reducing pollution and increasing efficiency and cost effectiveness of fishing operations. Another Scheme for processing, maintenance and marketing of fishes (FSH-9) was also operated with an objective to provide incentive to marine fishing activity and processing units. This was to be done by providing assistance for purchase of modern machinery so that the units get better prices for their fish products in the international market. Each of the above schemes consisted of various sub-schemes under which assistance to the fishermen was provided. Besides two schemes FSH 6 and 19 for development of Fisheries Ports and FSH 20 for Assistance for Distress Alert Transmitter were also operated by the Department. In addition, two other schemes viz., Development rebate on High Speed Diesel {FSH-103 (12)} and Central assistance for National Security {FSH-103 (13)} were notified but were not in operation during the review period.

The targets vis-à-vis achievement of the six schemes<sup>26</sup> in Marine fisheries during 2012-13 to 2016-17 are given in the **Appendix IV**. A review of the targets and achievement of the schemes revealed the following:

- Under FSH-6 scheme for development of Fisheries Ports, the achievement was nil as the capital works for the same were in progress (June 2017).
- In other schemes, viz., FSH-7, 8, 9, 19 and 20 the achievement against the target ranged from Nil to 415 per cent. It was observed that the higher achievement in FSH-19 and FSH-7 was due to higher demand for components under the sub-schemes. Among the sub-schemes, the excess achievement was observed in solar light, insulated box, life saving equipment, toilets in boats and generator set. Lower achievement was noticed in sub-schemes of pre-fabricated cabins, distress alert transmitter and four stroke machines due to lower demand. Nil achievement was seen in sub-scheme of women self help group, flex/slurry ice, floating jetty,

<sup>26</sup> Excluding the two schemes which were not in operation.

dredging work, etc., owing to no demand from the beneficiaries or not taking up of the work by the Department.

- The funds to meet additional demand in some sub-schemes were arranged through appropriation from sub-schemes where achievement was low.

Audit observations on upgradation projects and construction of fishing harbours, non-plan Diesel VAT subsidy and three plan schemes related to marine fisheries are discussed as under:

## 2.16 Infrastructure Projects

The Department has five fisheries harbours including three Fisheries Terminal Divisions<sup>27</sup> (FTD) at Mangrol, Veraval and Porbandar and two Fishing Ports at Jakhau and Dholai. The Department implemented infrastructure projects financed by National Fisheries Development Board (NFDB) to upgrade Fish Landing Centres<sup>28</sup> (FLCs) and FTDs besides other infrastructure projects during 2012-17. The observations relating to implementation of these projects are discussed as under:

### 2.16.1 Upgradation of Fish Landing Centre (FLC) and Fisheries Terminal Division (FTD)

Proper arrangement for maintenance of FLCs and FTDs is essential to ensure operational efficiency and hygiene. All the FLCs (18 in number) and FTDs (three in number) were constructed prior to 1999. During 2012-17, the Department implemented seven infrastructure projects to upgrade FLCs and FTDs financed by NFDB.

Audit observed (May 2017) that the Department took up (2015) the upgradation work on five out of 18 FLCs and two out of three FTDs. Till March 2017, the Department had incurred expenditure of ₹ 26.16 crore on the works. The status of works are given in **Table 10** below:

**Table 10: Status of works as on 31 March 2017**

Sl. No.	Name of Upgradation Work	Administrative Approval date	Work order date	Stipulated date of completion of work	Tender cost (₹ in crore)	Expenditure incurred (₹ in crore)	Status of work done (in per cent)	
1	FTD, Veraval	03.08.2015	12.02.2016	11.08.2017	13.98	9.86	80	
2	FTD, Porbandar	03.08.2015	22.02.2016	21.01.2017	10.73	9.04	80	
3	FLC, Salaya	17.11.2015	30.08.2016	31.07.2017	12.04	4.32	50	
4	FLC, Sachana	16.11.2015					60	
5	FLC, Navi Bandar	29.12.2015	07.04.2016	06.03.2017	5.37	2.94	45	
6	FLC, Miyani	29.12.2015					65	
7	FLC, Mangrolbara		Work not taken up					

(Source: Information furnished by the Department)

<sup>27</sup> Fisheries Terminal Division is a location where big trawlers unload the fish catch and includes facilities for berthing, storage of fish, auction hall and diesel pumping stations.

<sup>28</sup> Fish Landing Centre is a place where fish catch is unloaded or brought to the shore by the fishermen on small boats.

Audit observed (May 2017) that though the NFDB had released first installment of financial assistance for the above works in March 2012/ January 2013, the Department gave administrative approval for all the works only in 2015. The delay in grant of approval for the works was due to time taken for conducting survey, data collection, preparation of tender papers and shortage of technical staff. Further, the execution of work was also slow in case of four works (Sl. No. 3 to 6) whereas one work (Sl. No. 7) was not taken up, the reasons for which were not available on record.

The Department stated (September 2017) that there was no policy/ mechanism to maintain FLCs/ FTDs. It was further stated that works in coastal area required data collection and many surveys to be carried out for identifying suitable location, which took time. Further, due to shortage of technical staff, more time was required for review of such reports. The fact, however, remains that delay in execution of projects financed by NFDB deprived the fishermen and fishing community of better facilities at the FLCs/ FTDs.

### **2.16.2 Construction of Fishing Harbours**

The fishing harbours at Veraval, Mangrol and Porbandar were established prior to 1988. As on March 2017, these harbours provided berthing for 1,530 boats out of the total 10,048 mechanised boats registered at these harbours *i.e.*, less than 16 *per cent* of the registered mechanised boats at these harbours. In comparison to Gujarat, the berthing capacity at harbours in the State of Kerala and Puducherry was higher at 113.86 *per cent* and 138.01 *per cent*, respectively of the boats registered at the harbours in the concerned States.

GoG approved (September 2012) development of nine<sup>29</sup> new harbours by the Department at an estimated cost of ₹ 813 crore during the 12<sup>th</sup> Five Year Plan. This was with a view to provide more berthing space for fishing boats and infrastructure facilities for fishermen. Audit reviewed the progress of the implementation of development works and observed that:

- In case of works at Veraval Phase-II, Porbandar Phase-II, Sutrapada, Okha, Madhvad and Bhadreshwar<sup>30</sup>, the Detailed Project Report (DPR) was either under preparation or approved. The approved DPRs were at techno-economic approval stage (March 2017). For works at Mangrol Phase-III, and Navabandar, the tenders have been floated. The Department attributed (June 2017) various reasons for delay in implementation of works *viz.*, obtaining clearances, preparation of pre-feasibility report and DPR and shortage of technical staff.
- At Jafrabad, as per the progress report (April 2017), the construction of jetty and the work of dredging and dumping was completed. The work of providing infrastructure facilities was at tender stage. The target date for

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<sup>29</sup> (i) Sutrapada, (ii) Veraval, (iii) Mangrol, (iv) Nava Bandar, (v) Madhvad, (vi) Porbandar, (vii) Okha, (viii) Jafrabad and (ix) Bhadeli-Jagalala.

<sup>30</sup> Bhadreshwar harbour (tenth project) was selected by Gujarat Coastal Zone Management Authority as part of remediation of environmental damage measure and directed to build fishing harbour for the benefit of fishermen.

completion is April 2018, which is likely to be achieved if the work progresses at the current pace.

- Bhadeli-Jagalala was identified by GoG as one of the sites for development of fishing harbour. However, GMB informed (February 2014) that the location proposed for the harbour falls under Coastal Regulation Zone (CRZ) 1(A) category and as such no construction work could be carried out on the site. However, no suitable alternate location for development of harbour has been finalized (June 2017).

The site visits to the existing FTDs at Porbandar and Veraval indicated congestion in berthing as below.



Photographs showing traffic in berthing of harbour at Porbandar (11 April 2017) and at Veraval (12 April 2017).

The Department, thus, failed to carry out approved infrastructure works for construction of new fishing harbour for the benefit of fishermen and fishing community within the 12<sup>th</sup> FYP period as planned.

## **2.17 Providing Equipment and other Facilities to Fishermen at Fishing Centres**

The Department implemented a non plan scheme on Diesel VAT subsidy and plan schemes such as ‘FSH 7 - Providing pre-requisite facilities at various fishing centres’ and ‘FSH 8 - Motorisation/ Mechanisation of fishing boats’. A review of the benefits given to fishermen under the schemes revealed the following:

### **2.17.1 Diesel VAT Subsidy**

As part of Fishermen Development Scheme, the Department introduced (October 2012) Diesel Value Added Tax (VAT) subsidy under Non Plan Scheme with an objective to provide direct benefit of reimbursement of VAT in purchase of High Speed Diesel (HSD) to all categories of fishermen having one or more mechanised boats with length less than 20 meters.

The assistance/subsidy provided under the Diesel VAT subsidy scheme was equivalent to the amount of VAT in purchase of HSD used as fuel in the boats for fishing purpose. The quota of HSD eligible for VAT reimbursement was fixed by the GoG. The fishermen were issued diesel cards which were required

to be carried with them at the time of purchasing diesel from the designated diesel pump dealers. The fishermen had to obtain token from the fisheries guard stationed at fishing harbours. Only on production of token, the diesel pump dealers supplied diesel to the fishermen. The diesel so purchased was entered in the diesel card. The fishermen furnished the diesel card to the district offices for claiming the reimbursement of subsidy. After vetting of the claims by the district authorities, the subsidy was paid through direct credit to the fishermen's bank account. The details of subsidy claimed, funds released by GoG for subsidy and actual subsidy given by the Department to the fishermen during 2012-17 are given in **Table 11** below:

**Table 11: Details of Diesel VAT subsidy provided during 2012-17**

(₹ in crore)

Year	Subsidy requirement			Budget Provision	Subsidy given	Shortfall (as on March)
	Shortfall of previous year	Current year requirement	Total			
2012-13	--	37.37	37.37	37.37	37.37	--
2013-14	--	139.20	139.20	90.00	90.00	49.20
2014-15	49.20	164.71	213.91	129.00	128.55	85.36
2015-16	85.36	149.50	234.86	93.66	85.36	149.50
2016-17	149.50	241.00	390.50	80.00	79.94	310.50 <sup>31</sup>
<b>Total</b>				<b>430.03</b>	<b>421.22</b>	

(Source: Diesel subsidy claim records of the Department)

As on 31 March 2017, there was shortfall in receipt of subsidy of ₹ 310.50 crore<sup>31</sup> from GoG by the Department for reimbursement to the eligible fishermen. As can be seen from **Table 11**, the budgetary support provided by GoG for the subsidy was never adequate as compared to its requirement during 2013-17.

During 2012-15, the subsidy was reimbursed in full with part subsidy paid in subsequent years. The subsidy for 2015-16 of ₹ 149.50 crore was proportionately (53.42 per cent<sup>31</sup>) reimbursed to the eligible fishermen as per directions (October 2016) of GoG. This was paid out of ₹ 80 crore received by the Department in 2016-17. The outstanding subsidy of ₹ 310.50 crore involves 20,313 fishermen for two years (partial claim of ₹ 69.50 crore for 2015-16 and full claim of ₹ 241 crore for 2016-17).

Thus, due to inadequate budgetary support from GoG, there was shortfall in reimbursement of subsidy to the fishermen. Consequently, the reimbursement has been delayed which defeated the purpose of giving direct benefit of VAT relief to fishermen.

The Department admitted (September 2017) that due to shortfall in grant from GoG, reimbursement of diesel VAT subsidy claims could not be made in full.

<sup>31</sup> The figures here do not tally with the computation because Audit has adopted the figures as adopted by the Department for its future considerations.

### 2.17.2 Motorisation/ Mechanisation of fishing boats

Centrally sponsored scheme (CSS) for Motorisation/ Mechanisation of fishing boats was operational since 1998-99. Under the scheme, subsidy of 50 per cent of the cost of two stroke Out Board Machines (OBM) fitted in the fishing boat, restricted to a maximum of ₹ 30,000 per OBM, was to be given to the fisherman.

Since two stroke machine was operated with kerosene and four stroke machine could operate on petrol and LPG, with a view to reduce fuel consumption of boats, GoG proposed (April 2012) to GoI to enhance assistance for purchase of four stroke machines to ₹ 60,000. However, the request of the GoG was not accepted by the GoI.

In 2013-14, the Department introduced a new sub-scheme for assistance in purchase of four stroke machine under State plan. This scheme provided for subsidy upto ₹ 60,000 for purchase of a four stroke machine. This scheme was continued till 2015-16. In 2016-17, the GoI increased the subsidy under the CSS scheme to ₹ 60,000. Consequently, GoG merged its State Plan scheme with CSS with total subsidy of ₹ 90,000<sup>32</sup>.

The physical target *vis-à-vis* achievement for the year 2012-17 is given in **Table 12** below:

**Table 12: Physical target *vis-à-vis* achievement in purchase of OBM during 2012-17**

(in numbers)

Year	Two stroke machines		Four stroke machines	
	Target	Achievement	Target	Achievement
2012-13	418	418	141	0
2013-14	100	0	333	21
2014-15	400	400	333	55
2015-16	400	278	333	66
2016-17	Combined target of 100	27	Combined target of 100	90

(Source: Scheme files of the Department)

The Department incurred expenditure of ₹ 5.13 crore on these sub-schemes during 2012-17. Audit observed that the achievement against the target was lower during 2013-16 in case of four stroke machine. In 2013-14, assistance was provided for only 21 machines of four stroke whereas no assistance for two stroke machines was provided due to non-receipt of funds towards subsidy from GoI. Further, the target of 733 machines (400 - two stroke machine and 333 - four stroke machine) for the year 2016-17 was reduced to 100 by GoG on the recommendation of the Department (combined target for both machines) due to higher amount of subsidy involved. Against this, 117 beneficiaries were provided assistance; 27 for two stroke machines and 90 for four stroke machines. This led to less coverage of beneficiaries than the initial target of 733 machines.

<sup>32</sup> GoI: ₹ 60,000 and GoG: ₹ 30,000.

Audit further observed that the Department was of the view (April 2012) that Petrol/ LPG operated four stroke machines only should be promoted as they were eco-friendly and economically more beneficial. The GoG, however, continued to provide assistance for both two stroke (kerosene operated) and four stroke machines (Petrol/ LPG operated) since the beneficiaries were reluctant to switch over from two stroke to four stroke machines.

The Department stated (June 2017) that due to efforts of field offices, the assistance provided for purchase of four stroke machines was more than the assistance for two stroke machines in 2016-17. It was further stated (September 2017) that there was no separate scheme implemented for four stroke machines by GoI and hence, assistance was given for both two stroke and four stroke machines.

The reply does not bring out the fact that GoI had given (January 2013) flexibility to GoG to give assistance for the machines as per its local conditions. However, the assistance for four stroke machines gained pace only in 2016-17 *i.e.*, after three years. Further, as the subsidy for both two stroke and four stroke machines was same, it was financially more attractive for the beneficiaries to go for two stroke machines as the overall cost of such machines was less than the four stroke machines. The Department may consider looking into the anomaly in the equal amount of subsidy granted for both two stroke and four stroke machines.

### **2.17.3 Assistance for purchase of Global Positioning System**

Global Positioning System (GPS) helps the fishing boats to reach the fishing grounds by the shortest route and alerts fishermen while approaching International Maritime Boundary Line (IMBL). In the past, the Department had implemented the scheme for providing GPS to boat owners from 2002-03 to 2007-08. From 2008-09 onwards, GoG entrusted the scheme to Gujarat Maritime Board (GMB) under *Sagar Khedut Sarvangi Vikas Yojana*. However, GMB did not implement the scheme. The scheme was again entrusted back to the Department (2014-15). Thus, the scheme was not operational during 2008-09 to 2014-15. The Department reintroduced the scheme in 2015-16 wherein assistance of 50 *per cent* of the purchase cost of the GPS subject to a maximum of ₹ 20,000 was provided to the boat owners.

Audit observed that assistance was given only for 508 GPS (25.40 *per cent*) and 1,685 GPS (84.25 *per cent*) against the target of 2,000 GPS for the years 2015-16 and 2016-17 each. As the Department had empanelled dealers/ distributors for purchase of GPS only in December 2015, the achievement was lower during 2015-16.

The Department stated (June 2017) that opinion of various authorities was to be taken for empanelment, which led to delay in appointment of dealers/distributors. Audit is of the view that the Department should have initiated the process of empanelment well in time considering all the requirements so as to avoid the delay.

## 2.18 Environmental Issues

### 2.18.1 Sustainable Development Goals

India has adopted (September 2015) the Sustainable Development Goals (SDGs) of United Nations which includes a set of 17 Goals to end poverty, fight inequality and injustice and tackle climate change by 2030. The objective of SDG was to produce a set of universally applicable goals that balances the three dimensions of sustainable development *i.e.*, environment, social and economic. One of the objective under Goal 14.4 (Life below water) of SDG was to effectively regulate harvesting and over fishing, unregulated and unreported fishing, destructive fishing practices and implement science based management plans in order to restore fish stocks in the shortest time feasible to levels that can produce maximum sustainable yield as determined by their biological characteristics by the year 2020.

In pursuance to the objective of SDGs, the activities of the Department aimed at regulating fishing and promoting environmental friendly fishing practices. The observations in this regard are discussed as under:

### 2.18.2 Non-issue of notification for regulation of fishing activities

Section 7 of the Gujarat Fisheries Act, 2003 prescribes that the State Government may regulate, restrict or prohibit fishing in any specified area to conserve fish and to regulate fishing on scientific basis and to maintain law and order in the sea and on shore. No specific notification on the subjects/matters referred in Section 7 of the Act has been issued by the GoG (May 2017). Such a regulation would be in consonance with the objectives under Goal 14.4 (Life below water) of SDG to effectively regulate the fishing activities.

The Department stated (September 2017) that the process of issuing requisite notification had been initiated. The reply is not convincing. Since the enactment of the Act in 2003, notification had not been issued. Further, the reply did not give reasons for non-issue of the notification though mandated by the Act.

### 2.18.3 Non-adoption of uniform fishing ban period

GoI constituted (May 2013) a Technical Committee<sup>33</sup> (TC) to review the duration of the fishing ban period and to suggest further measures to strengthen the conservation and management aspects. The TC recommended (September 2014) to impose fishing ban in the west coast from 1 June to 31 July (61 days) every year. GoI accepted (March 2015) the recommendation. The GoG had also consented to the above recommendation in March 2015. Audit observed that GoG was imposing fishing ban for 67 days starting from June 10 to August 15 every year even till 2017 and had not revised the fishing ban

<sup>33</sup> Technical Committee consisted of nine members *viz.*, representative of Department of Animal Husbandry, Dairying and Fisheries, GoI; Central Marine Fisheries Research Institute (two representatives) Kochi; Director of Fisheries Government of Tamil Nadu and Government of Karnataka; Bay of Bengal Programme – Inter-Governmental Organisation, Chennai; Central Institute of Fisheries Technology; National Fish Workers Forum; and Fisheries Survey of India.

period for 61 days from June 1. Thus, the GoG was not complying with the GoI directions for adoption of uniform fishing ban period.

The Department stated (September 2017) that amendment in the Gujarat Fisheries Act, 2003 and the Gujarat Fisheries Rules, 2003 in line with the GoI direction would be carried out.

#### 2.18.4 Non-fixation of Maximum Limit of Fishing Boats in Fisheries Terminal Divisions

Section 7 of the Gujarat Fisheries Act, 2003 prescribes that the State Government may by notification regulate, restrict or prohibit the number of fishing vessels to be used for fishing.

There are three Fisheries Terminal Divisions under the jurisdiction of the Department at Veraval, Mangrol and Porbandar. The berthing capacity and registered boats at these harbours are given in the **Table 13** below:

**Table 13: Berthing capacity and registered boats at the FTDs of the State as on March 2017**

Sl. No.	Name of harbor	Berthing capacity	Registered boats
1	Veraval	750	4,082
2	Mangrol	380	1,804
3	Porbandar	400	4,162
<b>Total</b>		<b>1,530</b>	<b>10,048</b>

(Source: Details furnished by the Department)

Audit observed that the number of registered boats at the FTDs were more than six times of their berthing capacity. As the limit of number of fishing boats registered at a particular FTD had not been fixed, there is a possibility of over fishing by boats operating from these FTDs. Further, due to over-crowding at above FTDs, the possibility of increase in average turn-out time<sup>34</sup> (24 hours) cannot be ruled out.

The Department stated (September 2017) that as per the GoI direction (June 2017), they have discontinued registration and issue of licence to new fishing boats having more than 10 HP engine.

The reply does not address the immediate concern regarding existing registered boats which were far more than the existing berthing capacity and possibility of over fishing and over-crowding at the FTDs.

#### 2.18.5 Use of 40 mm code end net

Gujarat Fisheries Rules, 2003, prohibits any person to operate any other dimension fishing net except square mesh net of minimum 40 mm size at the code end portion for fishing of demersal fish<sup>35</sup>. With a view to maintain marine fish resources, the Department implemented (January 2010) RKVY scheme of Financial Assistance to Fishing Boat owner for distributing 40 mm code end net with a view to curb mortality of small fishes.

<sup>34</sup> Time taken to unload catch of fish and starting of next trip.

<sup>35</sup> Fish available at the bottom of the sea or lake.

The scheme provided for supply of 40 mm code end nets. The Department issued work order (January 2012) for supply of 7,000 nets of 40 mm code end worth ₹ 1.63 crore and the project was completed in 2012-13. Audit examination indicated that the Department distributed 4,333 nets against the target of 7,000 nets and thereby achieved 61.90 per cent of the target. The balance 2,667 nets purchased under the scheme during 2012-13 were lying undistributed (May 2017). The reason for lower achievement was due to poor response from the fishermen. Records made available to audit did not indicate whether the Department made any efforts to promote use of 40 mm code end nets except for distribution of nets as mentioned above.

Audit further observed that despite the use of 40 mm code end nets being made mandatory, the Department had no mechanism to monitor the actual usage of such nets. During the site visit (April 2017) at Fisheries Terminal Division (FTD) at Porbandar and Veraval conducted jointly with the representatives of the Department, Audit observed that 15 mm to 30 mm code end nets were also being used as against minimum 40 mm code end nets.



Photographs showing usage of fishing nets less than 40 mm code end at the harbour at Porbandar (11 April 2017) and at Veraval (12 April 2017)

The Department, therefore, could not enforce the usage of minimum 40 mm code end fishing nets as required under Gujarat Fisheries Rules, 2003.

The Department stated (September 2017) that the requisite notification to regulate and control the use of 40 mm code end nets is being issued. Further, to enforce the provisions of Gujarat Fisheries Act, 2003, a proposal to set up enforcement wing is being sent to GoG.

## 2.19 Manpower

### 2.19.1 Shortage of manpower

The staff position of the Department is given in **Table 14** below:

**Table 14: Staff position as on 01 May 2017**

Sl. No.	Class	Sanctioned posts	Men-in position	Vacant posts	Percentage of vacancy
1	I	41	7	32	78.05
2	II	57	20	34	59.65
3	III	673	289	366	54.38
4	IV	155	110	41	26.45
<b>Total</b>		<b>926</b>	<b>426</b>	<b>473</b>	<b>51.08</b>

(Source: Information furnished by the Department)

Audit observed that, as on 1 May 2017, more than 50 *per cent* of the posts were vacant. Of the total sanctioned posts, 529 were technical posts and 397 were non-technical. There was vacancy of 306 in technical posts (58 *per cent* of total technical posts). Likewise, 167 non-technical posts were vacant (42 *per cent* of total non-technical posts). These vacancies arose during the years 1998 to 2017. It was noticed in the test-checked offices that the same incumbent was holding multiple charge(s) of one or more posts in same or different office(s).

The Department accepted (May 2017) that constraints faced in completing the works in time were due to shortage of manpower. Audit is of the view that vacancy in posts especially in technical cadres over a long period of time adversely affects successful implementation of various programmes intended for improvement of fisheries activities.

The Department stated (September 2017) that they have recruited more than 67 officials in various cadres since 2016 and are proactively pushing for the recruitment through direct selection in various cadres.

## **2.20 Internal Control, Monitoring and Evaluation Mechanism**

### **2.20.1 Internal Control and Internal Audit**

An effective internal control mechanism provides reasonable assurance of economical, efficient and effective operations and adequately safeguards resources against loss.

As per circular dated 20 August 1987 of General Administrative Department, GoG, the internal audit branch of all the departments of GoG have to prepare annual inspection plan and follow it strictly to run the administrative system smoothly and ensure proper implementation of schemes and programmes.

The Internal Audit is conducted by separate audit branch of the Department. There were 28 (during 2012-15) and 35 (during 2015-17) regional/ subordinate offices of the Department which were subject to internal audit. Only five officials are on roll as on 31 March 2017 against the sanctioned strength of seven in the internal audit branch. The audit branch prepared annual inspection plan for all the five years during 2012-17. However, the pendency in conducting internal audit ranged from Nil to 46 *per cent* during 2012-17. Further, available records indicated that no action was taken on the Inspection Reports prepared by the internal audit branch. The timely inspections of each subordinate office would help detect the gaps in the implementation of various schemes/ programmes. The Department also need to take requisite action and follow-up on regular basis on the observations contained in the Inspection Reports proposed by the internal audit branch.

Deficiencies in internal control were noticed in implementation of RKVY/ GoG schemes on Fish Culture Cage, compliance with lease policy conditions, delays in implementation of infrastructure projects, usage of code end nets and utilisation of funds.

The Department stated (September 2017) that all the units would be audited on rotation basis.

### **2.20.2 Monitoring and Evaluation**

Monitoring is vital to track the progress of any scheme, programmes or a process with a view to detect deviations from the set path and take corrective action for achievement of desired objectives.

During 2012-17, the Commissioner of Fisheries reviewed the implementation of various schemes regularly on quarterly basis with the head of the concerned divisions. The regional/subordinate offices submit the progress reports on the implementation of the schemes on monthly basis.

Though the schemes were reviewed regularly, audit observed that the monitoring was deficient as indicative from inadequate assessment of spawns requirement for fingerlings production, under-utilisation of ponds, funds reported as utilised without actual utilisation, delay in empanelment of equipment suppliers, and delays in implementation of infrastructure projects as discussed in the preceding paragraphs.

Audit observed that the Department did not conduct any evaluation of the impact of the schemes/projects implemented to assess whether the desired objectives of the schemes/projects were achieved or not. It was also observed that the Department did not factor in the specific needs of the inland, marine and brackish water fisheries schemes. In absence of any evaluation, the success or effectiveness of the schemes/projects implemented and development of fisheries could not be assessed. Further, the socio-economic impact of the schemes on the fishermen community was not ascertainable.

The Department stated (September 2017) that the schemes/projects were monitored by the Head of the Department from time to time. Further, the mechanism to evaluate the action taken on the directions given in the review meetings has been put in place. It was further stated that General Administrative Department, GoG undertakes evaluation of the schemes. However, no such evaluation of schemes was carried out during 2012-17.

## **2.21 Conclusion**

**During 2012-17, the marine fish production of the State constituted about 20 per cent of the all India marine fish production while inland fish production of the State was little more than one and half per cent of the all India inland fish production. Audit observed that the Department prepared a Five Year Plan (2012-17) with cumulative targets to be achieved at the end of the Plan period. However, year-wise targets and matching financial outlays for various components were not included in the Plan. The annual operational budget/estimates did not flow from the Five Year Plan. Besides, variations in the original budget estimates and revised budget estimates were noticed indicating unrealistic projections and instances of funds lying unutilised due to delay or ineffective implementation of the schemes.**

In its schemes for development of Inland fisheries, the Department was not able to meet the requirement of fish seeds, the reservoirs/ ponds were under-utilised and there were delays in schemes on fish culture cage. The Department did not have a marketing policy critical to its success but it was assisting the small vendors, processing plant owners, *etc.* through sub-schemes like insulated box, assistance to women self-help groups, upgradation of processing plants and machinery, *etc.* For the purpose of development of Marine fisheries, the implementation of infrastructure projects of upgradation and development of new harbours were affected due to delays in taking up the projects thereby depriving the fishing sector the benefits of better facilities. The delays in transferring the subsidy due to inadequate funds defeated the purpose of providing direct benefit of Diesel VAT subsidy to the fishermen .

Though mandated to regulate, restrict and conserve fisheries, the Department did not use or amend the provisions of Fisheries Act, 2003 to adopt uniform fishing ban period and fixing the limit for berthing of fishing boats in Fisheries Terminal Divisions. The Department also did not make adequate efforts to promote use of 40 mm code end nets for fishing. The Department did not conduct any impact evaluation of the schemes factoring in the specific needs of the inland, marine and brackish water fish farmers. Therefore, the Department could not assess whether the desired objectives of fisheries development were achieved.

## 2.22 Recommendations

- *The Department may prepare budget estimates based on the realistic projections and implement the schemes in a planned manner to avoid idling of funds.*
- *The Department may identify the scheme activities that are lagging behind, analyse the reasons for the gap and its impact to appropriately decide to either discontinue or rationalise them based on specific needs of the fishermen.*
- *Mapping of suitable saline land and allotment of mapped land may be expedited for development of brackish water aquaculture.*
- *Timelines may be laid down and adhered to for infrastructure projects to enable the fishing sector avail its benefits.*
- *The Department may frame marketing policy for enhancing the opportunity to the fishermen to sell their products.*

# **CHAPTER-III**

## **COMPLIANCE AUDIT**



## CHAPTER III

### COMPLIANCE AUDIT

Important audit findings that emerged from the test check of transactions of the Departments of the Government of Gujarat in the Economic Sector are included in this Chapter.

#### FORESTS AND ENVIRONMENT DEPARTMENT

##### 3.1 Regulation of activities in the Protected Areas of Gujarat

###### 3.1.1 Introduction

Wildlife refers to living organisms in their natural habitats. Protected Areas (PAs) are natural habitat of wildlife which is a national resource that helps in maintaining the ecological balance. Over the years many species of flora and fauna have been pronounced extinct and several others are at the verge of extinction. Deforestation, illegal hunting, habitat reduction and its degradation, *etc.*, are a threat to the PAs; therefore, their regulation is a necessity for conservation and protection of wildlife.

Protected Areas are constituted and governed under the provisions of Wildlife (Protection) Act, 1972 (WPA). The WPA empowers the State Governments to declare any area of adequate ecological, faunal and floral, geomorphological, natural or zoological significance as a Wildlife Sanctuary (WLS) and National Park (NP) for the purpose of protecting, propagating or developing wildlife or its environment. Section 36(A) of the WPA empowers the State Government to declare any area, particularly the areas adjacent to NP and WLS and those which link one protected area with another, as Conservation Reserves (CR) for protecting landscape, seascapes, flora and fauna and their habitats.

The WLS, NP and CR are called Protected Areas (PA).

###### 3.1.2 Protected Areas in Gujarat

In Gujarat, there are 28 PAs<sup>1</sup> (**Appendix V**). Total area of PAs in Gujarat is 17,099.93 square kilometres (sq km) but only 4,640.58 sq km (27.14 *per cent*) is forest land and remaining is non-forest ecosystems. Further, the geographical area of Gujarat is only 5.90 *per cent* of the total area of India but 11.37 *per cent* of total PA of the country is located in Gujarat.

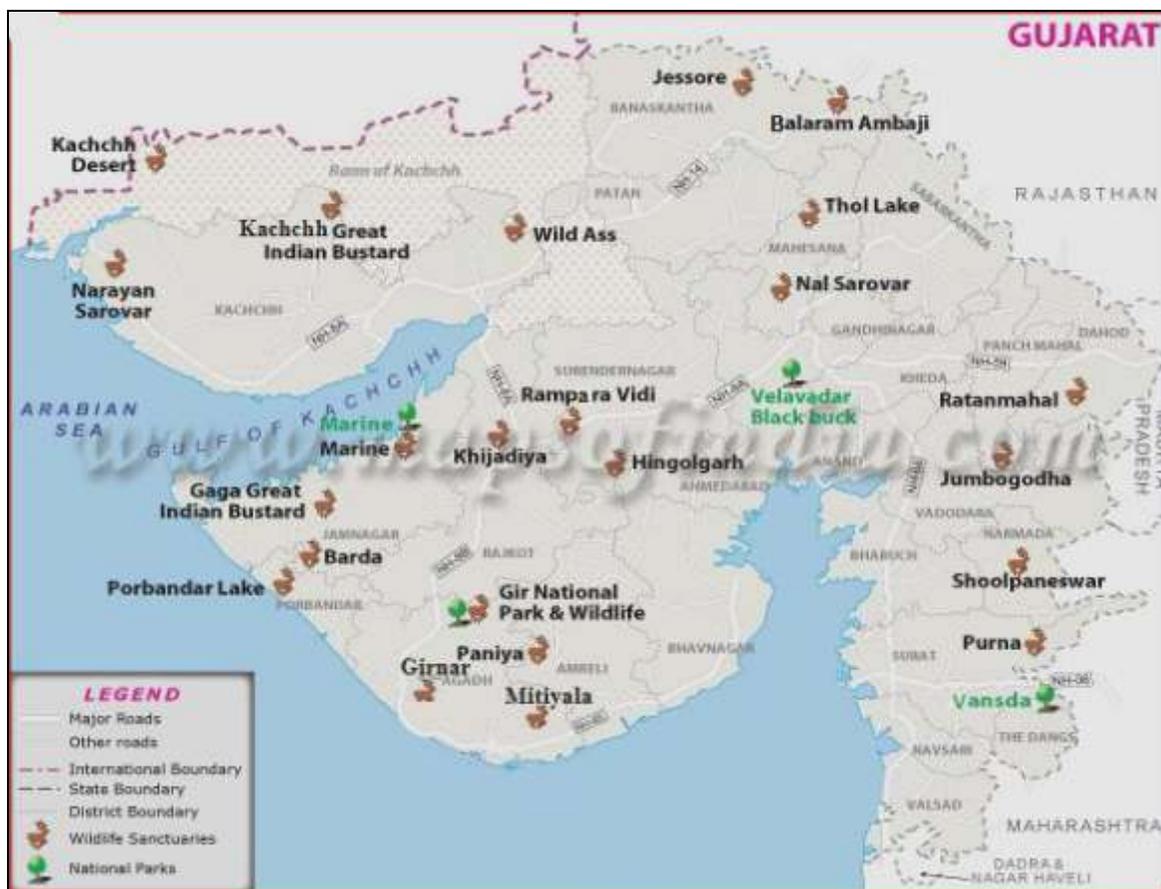
Gujarat has diverse geo-physical and eco-climatic features, with the longest coastline. Due to the diverse eco-systems, Gujarat has rich biological diversity consisting of 14 *per cent* of marine, 18 *per cent* of reptiles, 37 *per cent* of avifauna and 25 *per cent* of the mammal species of India. Further, Gujarat falls *en route* the trans-continental annual migration of avian species and is also the only habitat of the Asiatic Lion and Indian Wild Ass.

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<sup>1</sup> 23 WLS, four NPs and one CR.

The map showing indicative locations of the Wildlife Sanctuaries and National Parks in Gujarat is given below:

Map showing indicative locations of Wildlife Sanctuaries and National Parks in Gujarat



(Source: from mapsofindia.com)

### 3.1.3 Authorities for the regulation of activities in PAs

Regulation of the activities in the PAs is governed by the WPA, which is further complemented by Forest Conservation Act (FCA), 1980 and Environment Protection Act (EPA), 1986. The following authorities have important role in compliance with the provisions of the above Acts.

**State Board of Wildlife (SBWL):** It was constituted under Section 6 of WPA and is headed by the Chief Minister of the State as Chairman. The duty of SBWL is to advise the State Government in selection of areas to be declared as PA, deciding line of action for protection of PA and wildlife, etc.

**National Board of Wildlife (NBWL):** It is a statutory Board constituted under Section 5 of the WPA. The role of NBWL *inter alia* includes to make recommendations on the matters relating to restriction of activities in the PA.

**Central Empowered Committee (CEC):** It was constituted by the Hon'ble Supreme Court of India (SCI). Matters relating to implementation of WPA and FCA, including rules, regulations and guidelines framed there under on which the SCI has passed orders from time to time are referred to the CEC for recommendation to the SCI.

### 3.1.4 Organizational set up

Additional Chief Secretary, Government of Gujarat (GoG) is the head of the Forests and Environment Department (F&ED) who is assisted by two Principal Chief Conservators of Forests. The Principal Chief Conservator of Forests (Head of the Forest Force) is the functional head of the Forest Department.

To control, manage and maintain the PAs, the Principal Chief Conservator of Forests (PCCF) (Wildlife) is appointed under Section 4 of the WPA, 1972 who also acts as the Chief Wildlife Warden of the State. The Deputy Conservator of Forest (DCF) of the respective sanctuary acts as the Sanctuary Superintendent.

### 3.1.5 Scope of Audit

Audit examined the functioning of the Forests Department with regard to discharge of responsibilities for the protection of the PAs during the period 2012-13 to 2016-17. The scope of audit was limited to assess whether adequate measures were taken for conservation of Wildlife *vis-a-vis* protecting their habitat and, whether the activities within the Protected Areas were in compliance with WPA/ FCA and extant orders in this regard.

Based on the examination of the records relating to activities undertaken in PAs during 2012-17, the audit findings are discussed in succeeding paragraphs.

### 3.1.6 Creation of Eco-Sensitive Zone

Section 3 of the EPA, 1986 gives power to the Government of India (GoI) to take all measures that it feels necessary for protecting and improving the quality of the environment and preventing & controlling environmental pollution. Eco-Sensitive Zone (ESZ) is notified around a PA under Section 3 of the EPA, 1986 to regulate activities in the ESZ. An ESZ creates some kind of "Shock absorber" around PAs and acts as a transition zone from areas of high protection to areas involving lesser protection. The National Wildlife Action Plan<sup>2</sup> (2002-2016) provided for declaring identified areas around PA and corridors as ecologically fragile under the EPA, 1986, wherever necessary.

#### Process for notification of Eco-Sensitive Zones:

The notification of an ESZ goes through the following stages:

- The proposal for an ESZ around a PA is submitted by the State Government which is scrutinized by the MoEF&CC in consultation with the Wildlife Institute of India.

<sup>2</sup> National Wildlife Action Plan 2002-2016 as adopted by Indian Board of Wildlife (now NBWL) in 2002 was implemented by the MoEF&CC.

- The draft notification is finalized by the MoEF&CC and placed in public domain for 60 days seeking views of public.
- The views/ comments/ activities recommended by the public are compiled and considered by the Expert Committee of the MoEF&CC before finalizing the notification to be issued under the EPA, 1986.
- Final notification for an ESZ is to be issued within a period of 545 days for those proposals for which comments have been received from the public after the publication of draft notification.

### **Status of declaration of ESZ in Gujarat**

As of July 2017, out of 23 WLS and four NPs, draft notifications for declaration of ESZ around the areas of 17 WLS and four NPs have been issued. Out of these, MoEF&CC has issued final ESZ notifications in respect of 10 WLS and three NPs. Proposals for issue of draft ESZ notification for six WLS was under consideration at different stages (**Appendix VI**).

Audit examined the records relating to proposal for ESZ notification and observations in respect of four PAs<sup>3</sup> are as under:

#### ***3.1.6.1 Unjustified exclusion of Forest and Government waste land from ESZ***

In December 2016, eight draft notifications of ESZ around 11 PAs<sup>4</sup> were in public domain for inviting representations of the public. Audit observed (April 2017) from the records that a meeting was held on 28 November 2016 between the group of Ministers of State Government, District representatives and affected persons to get objections on the eight draft ESZ notifications. In the meeting, a decision was taken to finalize the area of the ESZ based on representations of the stakeholders. Accordingly, the PCCF (WL) issued an internal circular on 07 December 2016 and directed its field officials to prepare revised proposals for these eight draft notifications based on specific criteria of distance from the boundary of the protected area and exclusion of certain villages.

Audit test checked three proposals (Velavadar Black Buck NP, Nalsarovar Bird sanctuary and Hingolghadh Nature Education Sanctuary) for final ESZ notification. Details of ESZ area as per draft/ initial proposal and as per proposal for final ESZ notification in respect of these three PAs are given in **Table 1** below:

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<sup>3</sup> (1) Velavadar Black Buck National Park (2) Nalsarovar Bird Sanctuary, (3) Hingolghadh Nature Education Sanctuary and (4) Narayan Sarovar Wildlife Sanctuary.

<sup>4</sup> (1) Gir PA (Gir NP, Gir WLS, Paniya WLS and Mitiyala WLS), (2) Barda WLS (3) Velavadar Black Buck National Park, (4) Nalsarovar Bird sanctuary, (5) Khijadiya WLS, (6) Gaga WL Sanctuary, (7) Porbandar Bird Sanctuary and (8) Hingolghadh Nature Education Sanctuary.

**Table 1: ESZ area as per proposal for draft and final ESZ notification**

Name of the PA and status of ESZ notification	Type of proposal and date	Forest land	Revenue Land	Government waste land/ gauchar land	Total
Nalsarovar Bird Sanctuary (Final notification issued in June 2017)	Draft notification (December 2015)	358.65	35,376.33	30,216.02	65,951
	Proposal for final notification (December 2016)	35.47	31,756.53	0.00	31,792
	Reduction in percentage	90	10.23	100	51.79
Hingolghadh Nature Education Sanctuary (Final notification issued in June 2017)	Draft notification (December 2015)	2,971.53	2,101.44	1,434.99	6,507.96
	Proposal for final notification (December 2016)	379.86	1,610.19	1,176.72	3,166.77
	Reduction in percentage	87.22	23.38	18.00	51.34
Velavadar Black Buck National Park (Final notification issued in July 2017)	Draft notification (December 2015)	63,760	41,834	24,558	72,768
	Proposal for final notification (February 2017)	633		3,724	4,357
	Reduction in percentage	99		94.39	94.01

As seen from the **Table 1**, there were reductions in the areas in the final notification for ESZ ranging from 51 to 94 *per cent*. Audit noticed that the proposals of draft ESZ notification were based on the MoEF&CC guidelines. These proposals were prepared keeping in view the detailed and scientific studies of habitats and corridor of wildlife. It was further observed that the areas of forest land was reduced from 87 to 99 *per cent* in the above cases. Since forest areas are already regulated under FCA, 1980 reduction in the same lacked justification.

Audit scrutiny further revealed that no representation was received for reduction in ESZ area for forest land and government waste land because the Government itself was its custodian. It was also noticed that MoEF&CC while issuing final ESZ notification stated that there was no objection/ representation from stake holders in case of above ESZ. Despite this, in the final ESZ notification, forest land and government waste land was reduced.

Audit is of the view that shrinking of the ESZ area consisting mainly of the government waste land and forest land, may jeopardise the long term efforts for wildlife conservation and in turn adversely impact environment as regulation of environment affecting activity would not be possible in areas excluded from ESZ.

Reply of the PCCF (WL) was awaited (December 2017).

### **3.1.6.2 Non-compliance with conditions of final ESZ notification**

The MoEF&CC issued final ESZ notification in May 2012 for the Narayan Sarovar Wildlife Sanctuary (NSWLS). As per the conditions of the notification, the State Government had to prepare a Zonal Master Plan within two years of the notification. Further, in the notification, MoEF&CC also provided framework for constitution of a Monitoring Committee (MC) having not more than 10 members. The District Collector was responsible for compliance of the conditions of the ESZ notification.

Audit scrutiny (May 2017) revealed that even after five years of ESZ notification, the Zonal Master Plan had not been prepared and MC was not constituted. The DCF, Kachchh (West) suggested three NGOs in March 2017 for appointment as members of the proposed MC but their approval from the F&ED was awaited (May 2017). Further, it was also observed that though the GoG had instructed (October 2012) the Collector, Bhuj to take cognizance of the terms and conditions of the ESZ notification, instructions in this context were passed on to the Deputy Collectors only in September 2015 by the Collector, Bhuj. Non-preparation of Zonal Master Plan and non-constitution of the MC may lead to non-regulation of the activities in the notified ESZ area.

Reply of the PCCF (WL) was awaited (December 2017).

### **3.1.7 Non-declaration of new Protected Areas for Asiatic Lion**

The population of Asiatic Lions has increased from 205 in 1979 to 523 in 2015. Further, the number of lions within the Gir PA was 308 in 2011 which increased to 356 in 2015 (15.6 *per cent*). This increase exerts pressure on the Gir PA, which is the home to these lions. Further, lions being territorial animals, their increasing population have led them to discover and adopt new habitats outside the Gir PA<sup>5</sup>. It is evident from the fact that the number of lions outside the Gir PA was 108 in 2011, which increased to 167 (54.6 *per cent*) in 2015.

The proposal submitted (March 2016) for draft Eco Sensitive Zone (ESZ) notification for Gir PA also reports that the latest census should be taken as a sign of warning as nearly one-third *i.e.*, 32 *per cent* of the lions have their habitat outside the Gir PA, risking human lives, livestock as well as the safety of the lions themselves.

In view of the rising population and high instances of death of lions<sup>6</sup> outside the Gir PA during 2012-13 to 2016-17, creation of new PAs was one of the available options with the F&ED. Audit examined the efforts made by F&ED in expanding the PA for Asiatic Lions.

As part of plans to identify new PA/ CR in Gujarat, the CCF (WL), Junagadh proposed (November 2005) to declare 30,152.32 ha of villages of Palitana, Mahuva, Talaja, Khamba and Savarkundla talukas of Bhavnagar and Amreli

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<sup>5</sup> Girnar, Gir, Paniya and Mitiyala Sanctuaries and Gir National Park.

<sup>6</sup> Death due to natural reason within the Gir PA-175 and outside the Gir PA-106 and death due to unnatural reasons within the Gir PA-2 and outside the Gir PA-21.

district as a “Sir Dharam Kumar Singh Ji Wildlife Sanctuary” to provide a safe corridor for the lions moving out of the Gir PAs.

After deliberations with the PCCF (WL), the proposal was modified (August 2006) and it was decided to declare the areas as a CR. Revised proposal for reduced area of 11,155.18 ha was submitted (June 2007) which was further reduced (October 2010) to 10,953 ha. The F&ED informed (November 2010) the PCCF (WL) that the proposal of declaring the CR was under consideration and further directed to initiate the procedure of transferring 4,811.51 ha government waste land of Amreli district in favour of the F&ED.

Audit observed (May 2017) that the Revenue Department was approached (November 2010) for transfer of government waste land in favour of F&ED. Despite protracted correspondence between F&ED and the Revenue Department, the same has not been transferred (May 2017). Thus, the declaration of the lion habitat area as CR is pending despite lapse of more than 11 years.

The fact remained that the last extension of habitat for lion was approved by the MoEF&CC in 2008 *viz.*, Girnar WLS (area of 178.87 sq km). Despite increase in population of lion during 2011-15 by 54.60 *per cent* outside the Gir PA and high instances of death of lions, no new protected habitat for lions has been approved.

### **3.1.8 Implementation of Modern Technology for the Conservation of Asiatic Lion**

Introduction of modern technology for the conservation of Asiatic Lion was part of the Management Plan of the Gir PA. After the poaching of seven lions in March 2007, the F&ED constituted (May 2007) a Task Force<sup>7</sup> to explore the use of modern technology to stop recurrence of such incidents. The Task Force proposed (November 2007) following integrated solutions for enhancing conservation efficiency by incorporating modern technology.

1. GPS based tracking of surveillance, animal and vehicles in Gir PA.
2. Automated Sensor Grid (Magnetic Sensor and Movement Sensor).
3. Genome Mapping and Conservation (establishment of gene pool population and genetic laboratory and cryopreservation of genetic material) of the Asiatic Lion.
4. Night Vision Capability Enhancement.

Audit’s observations on implementation of projects for introduction of modern technology for conservation of Asiatic Lion are discussed below.

<sup>7</sup> Consisting members from Wildlife Institute of India, Dehradun; Professor from DA-IICT; Director, BISAG; PCCF (WL), CCF (WL), Junagadh and CCF (Research).

### **3.1.8.1 Slow implementation of LEOGEN Project**

One of the recommendations of the task force was launching of a project for Genome Mapping and Conservation of Asiatic Lion. The Task force also suggested setting up a laboratory that would have facilities for cryopreservation, DNA sequencing *etc.* It also recommended development of specification for such laboratory in consultation with Gujarat State Bio Technology Mission (GSBTM)<sup>8</sup> and other organisations<sup>9</sup>.

F&ED constituted (December 2009) Gujarat Wildlife Genomics and DNA Banking Facility and signed (January 2010) a Memorandum of Understanding (MoU) with GSBTM. However, project actually commenced only from May 2014. Within a year of commencement of the project, the F&ED cancelled (May 2015) the MoU entered with GSBTM and entrusted (May 2015) the implementation of the project to the Gujarat Forestry Research Foundation (GFRF)<sup>10</sup> and renamed the project as “Wildlife Genomics Research Project (LEOGEN)”.

Audit observations relating to the project are as under:

- Since commencement of the project (May 2014), work on only two out of six activities had been attempted (July 2017). Work on diagnostic core was not started though the incubator for this purpose was purchased in November 2013. The project had, therefore, been restricted to genetic data sampling.
- Specifications for laboratory were also not prepared.
- Despite the fact that the GFRF did not have expertise in the field of scientific research on genomics which was the core requirement of the project, the project was transferred to the GFRF.
- There was no permanent technical staff in GFRF to run the project.
- To run the Project, the F&ED was to re-constitute four functional committees which were not constituted till June 2017.

The Director, GFRF justified (May 2017) transfer of the project from GSBTM on the grounds that it made collection of samples easy in the WLS and NPs. However, the justification was not tenable as the collection of sample was not the objective of the project. However, Audit observed that the Director, GFRF himself reported (November 2015) to the F&ED that the project had come to a standstill.

Thus the progress of the project was slow despite availability of funds for the reasons stated above.

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<sup>8</sup> An institute under the aegis of the Science and Technology Department, GoG.

<sup>9</sup> Veterinary College; Anand and Centre for Cellular & Molecular Biology, Hyderabad.

<sup>10</sup> An Autonomous Body under the Forests and Environment Department.

### **3.1.8.2 Wasteful expenditure on purchase of Forensic Mobile unit**

The GSLCS purchased (June 2008) a Forensic Mobile Unit (the Unit) for forensic science investigation at a cost of ₹ 0.25 crore and placed it under the control of the Deputy Director, Forensic Science, Junagadh upto 2009-10. Due to lack of necessary staff required for operating it, the Unit was shifted (April 2010) to the Sakkarbaug Zoo. Later on, it was shifted (April 2014) to the Wildlife Division, Sasan-Gir, Junagadh and remained there (July 2017). Between January 2010 and August 2014, the Unit was used on 37 occasions only and that too for non-forensic use. A later decision (July 2015) to shift it to Deputy Director, Forensic Science, Junagadh was not accepted by that office.

Audit observed (January 2017) that the Unit could not be utilized for forensic science due to its size which was detrimental to its mobility in the forest area. The forensic equipment has been kept in veterinary hospital at Sasan-Gir. As there was no utility of the Unit, contract of one technical officer and attendant was not renewed (June 2015).

The MS, GSLCS stated (February 2017) that the Unit was being used for training in forensic crime at site, rescue and care of the wildlife in Devaliya Interpretation Park.

The fact remained that the Unit was purchased without proper assessment of its utility.

### **3.1.8.3 Construction of chain link fencing along railway tracks**

Three railway tracks (Section A, B and C)<sup>11</sup> pass through the areas inhabited by the lions in Amreli district. During 2012-14, there were five cases of lion casualty on the above tracks. To control the accidental death of lions on the tracks, it was decided (October 2014) by the Railway authorities and the F&ED to take long term and short term measures. Short term measures included deployment of trackers and long term measures included construction of underpasses and fencing of entire railway track on both sides to ensure that the Asiatic Lions are not able to reach the railway tracks. To implement the long term measures, an expenditure of ₹ 25.35 crore was incurred upto June 2017 on fencing. The work in Section 'A' was completed in March 2016 and works of Sections 'B' and 'C' were at various stages of completion (March 2017).

Audit scrutiny (March 2017) revealed that the DCF, Social Forestry, Amreli and CCF, Social Forestry, Rajkot reported (September 2016) to the PCCF (WL) that lions entered fenced area on eight occasions and raised doubts over its effectiveness in controlling the movement of lions on railway tracks. Thus, fencing of the railway tracks, though a major step for conservation of wildlife, had not succeeded in preventing movement of lions on track.

<sup>11</sup> Section A, Pipavav- Rajula; 14 Kilometer; Section B Rajula- Savarkundla; 16 Kilometer; Section C, Rajula – Mahuva; 17 Kilometer.

To examine the effectiveness of the measures undertaken and the need of further action required, PCCF (WL) constituted (October 2016) a Committee of experts<sup>12</sup> from the field of Wildlife. The Committee recommended use of modern technology like GPS based tracking, virtual fencing camera with siren, SMS alert facilities to the loco drivers, *etc.* Audit observed that though the recommendations were made in October 2016, no further action for implementation of these technologies was taken by the F&ED. In reply, the DFO, Social Forestry, Amreli stated (May 2017) that success of use of such costly technology was doubtful.

### **3.1.9 Approval of Activities and Diversion of Land in PAs**

Use of PA such as carrying out any permitted activity including diversion of land is regulated under Section 29 of the WPA. Such proposal is submitted by the PCCF (WL) to the SBWL. The SBWL recommends the proposal to the NBWL. The NBWL files an application before the CEC of the SCI for consideration of the proposal. After examination, the CEC recommends the proposal to the SCI for permitting the use of sanctuary land subject to fulfilment of conditions mentioned therein. The SCI approves the proposals. Since October 2015, the SCI has empowered the NBWL to grant permission for use of PA on its own merits and in conformity with the orders and directions passed by the SCI from time to time. Further, if the diversion of land of PA involves forest land, necessary permissions have to be obtained under FCA, 1980.

The SCI/ NBWL had approved (between February 2008 and August 2016) 44 proposals to undertake permitted activities in PAs of Gujarat. Of these, instances of violation of the provisions of Section 29 of the WPA and non-compliance of conditions of approvals noticed during test check are discussed below:

#### **3.1.9.1 Unauthorised establishment of windmills in Wild Ass Sanctuary, Dhrangadhra**

The Ministry of Environment, Forests and Climate Change (MoEF&CC), GoI issued (May 2004) guidelines that prohibit use of forest land of NPs and WLS for wind energy projects.

Audit observed (April 2017) that Vestas Wind Technology India Private Limited, Ahmedabad (the user agency) applied to the PCCF (WL) in January 2007 for use of 3.72 hectare (ha) forest land of Wild Ass Sanctuary (WAS), Dhrangadhra for establishing seven windmills. The SBWL and NBWL approved the proposal in September 2008 and July 2009, respectively. However, the CEC rejected (May 2013) the proposal on the grounds that the proposal was from a private enterprise for commercial exploitation of forest land and was not a site specific project. The CEC recorded that 135 windmills were already functioning in the area and all were located outside the boundary of the Wild Ass Sanctuary.

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<sup>12</sup> Expert committee consisted of CCF of concerned circles; Representative of Essar Company Limited; Jamnagar, Digitron India, Jamnagar; Security Officer, Pipavav Port and Railway Supervisor, Savarkundla.

Subsequent to amendment in process of obtaining permission (October 2015), the PCCF (WL) accorded sanction (December 2015) for establishment of these seven windmills in the Sanctuary. It was recorded in the sanction that the Member Secretary, CEC directed telephonically (November 2015) to implement the order of the SCI and issue permissions based on the decisions taken on merits by the NBWL in the pending cases. The DCF, WAS, Dhrangadhra confirmed (April 2017) that the user agency had completed the work.

Audit is of the view that since there was no change in the extant orders of the CEC, subsequent grant of approval (December 2015) without any recorded reasons for change in the ground position was not correct and tantamount to violation of the WPA, 1972.

Reply of PCCF (WL) was awaited (December 2017).

### ***3.1.9.2 Execution of work in Sanctuary area without prior permission***

In order to evacuate power and further transmission from its Ultra-Mega Power Projects (UMPP) located at Mundra, the Adani Power Limited (APL) required diversion of 58.968 ha (18.20 ha forest land and 40.768 ha non-forest) of WAS, Dhrangadhra for laying Mundra-Dehgam transmission line. For this, APL was required to obtain prior permissions under FCA, 1980 and WPA, 1972.

APL applied (January 2009) for diversion of forest land under FCA, 1980. During the field inspections, the F&ED noticed (March 2009) that APL had laid the transmission line without getting requisite permission. APL stopped the work (March 2009). Subsequently, MoEF&CC granted (May 2009) in-principle approval for diversion of forest land under FCA, 1980. Audit noticed from the orders of the Central Electricity Commission (in petition no. 184/TT/2013 dated 18 December 2013) that APL had commissioned the transmission line in July 2009.

Audit also observed that APL had applied in May 2009 for diversion of Sanctuary land (forest and non-forest) under Section 29 of the WPA 1972 *i.e.*, after it had started the work in January 2009. The same was granted by PCCF (WL) in September 2010 *i.e.*, around 13 months after the commissioning of the transmission line in July 2009. Thus, APL did not requisite permissions obtain under WPA before the start of the work in January 2009.

APL paid (July 2013) the Net Present Value<sup>13</sup> (NPV) required for diversion of the forest land. The F&ED, GoG proposed (November 2014) final approval for diversion of forest land to MoEF&CC with a condition to levy penal NPV.

<sup>13</sup> In respect of forest land falling within NP and WLS, the amount of NPV was equal to 10 times and five times, respectively of the NPV for the adjoining area as per Annexure-I of the GR of September 2008. In respect of non-forest land falling within marine national park/ wildlife sanctuary, the amount was five times of the NPV payable for the adjoining area as per Annexure-I of the GR. The use of non-forest land falling within NP and WLS was permitted on payment of an amount equivalent to the NPV payable for the adjoining area as per Annexure-I of the GR.

However, MoEF&CC directed (May 2015) GoG to enquire into the matter of use of forest land for non-forest purpose without obtaining prior approval of the GoI. It also directed to forward draft complaint against persons *prima facie* found guilty for violation of FCA, 1980 within a month. Audit observed that no action on MoEF&CC instructions had been taken even after a lapse of two years (May 2017) and final approval from MoEF&CC was still pending (December 2017).

Thus, APL laid transmission line in violation of provisions of WPA, 1972 and FCA, 1980 and prior to obtaining the requisite permissions under the *ibid* Acts.

Reply of PCCF (WL) was awaited (December 2017).

### **3.1.9.3 Non-recovery of NPV and project cost of diversion of sanctuary land**

As per F&ED, Government Resolution (September 2008), NPV is recoverable from the user agencies in the event of diversion of land of WLS and NP for non-forest purposes. In addition to the NPV, five *per cent* of the cost of the project (passing through the WLS and/ or NP) is to be recovered for conservation and management of wildlife prior to commencement of the permitted activity. The funds so collected are to be credited to the Compensatory Afforestation Fund Management and Planning Authority.

The 44 proposals approved by the SCI/ NBWL from February 2008 to March 2017 involved diversion of 1,134.0283 ha land (forests as well as non-forests) of WLS and NPs in Gujarat. Keeping in view the area of land diverted and purpose of diversion, Audit test-checked 10 sanctions and noticed cases of non-recovery of NPV and five *per cent* of the cost of the project due to non-inclusion of the conditions for recovery of NPV and amount of five *per cent* of the project cost. A summary of these cases is given in **Appendix VII**.

Audit noticed that the F&ED recovered NPV in two cases *viz.*, Dedicated Freight Rail Corporation of India (DFRCI), Ajmer and Rail Development Corporation India Limited (RDCIL). However, the NPV of ₹ 38.98 crore was not recovered (July 2017) in the remaining eight cases<sup>14</sup>.

Similarly, it was also observed that F&ED recovered five *per cent* of the project cost in only three cases out of the 10 *i.e.*, Adani Power Limited (APL), Gujarat Energy Transmission Company Limited (GETCO) and Oil and Natural Gas Corporation Limited (ONGCL). However, ₹ 3.69 crore was not recovered in three cases<sup>15</sup> though the works were either completed or were under progress. In remaining four cases<sup>16</sup> audit could not compute the recoverable amount due to non-mentioning of project cost in the proposals.

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<sup>14</sup> GETCO (two cases), ONGCL, Power Grid Corporation India Limited (PGCIL), SSNNL, Vodafone Essar, Vestas Wind Technology India Private Limited and APL.

<sup>15</sup> DFRCI, RDCIL, PGCIL.

<sup>16</sup> SSNNL, Vodafone Essar, GETCO and Vestas Wind Technology India Private Limited.

On being pointed out in audit, the respective DCFs issued (July 2017) demand notices in five cases<sup>17</sup>. In respect of APL, the DCF, WAS, Dhrangadhra issued (July/ September 2017) demand notice for payment of ₹ 3.81 crore towards NPV and project cost. In respect of Sardar Sarovar Narmada Nigam Limited (SSNNL), the diverted land fell under the jurisdiction of two DCFs viz., DCF, WAS, Dhrangadhra and DCF, Kachchh (East). While, the DCF, WAS, Dhrangadhra issued (July 2017) demand notice (₹ 4.28 crore), the DCF, Kachchh (East) did not issue demand notice to SSNNL (July 2017).

Reply of PCCF (WL) was awaited (December 2017).

Non-inclusion of mandatory conditions in the sanction order and failure to serve demand notice for recovery of NPV and five *per cent* of the project cost indicate weakness of internal control. It also indicates non-monitoring of use of sanctuary land and sanctions orders at the PCCF (WL) level being the Chief Wildlife Warden of the State.

#### ***3.1.9.4 Non-compliance with mitigation measures in laying of transmission lines***

For evacuation of power from ultra-mega power projects (UMPP) at Mundra and further transmission to the end users, high voltage transmission lines were laid by APL, GETCO and PGCIL. The geographical location of these UMPP was such that every transmission line had to cross Little Rann of Kachchh (LRK). LRK is the nesting ground of the lesser and greater flamingos and also a stopover in their international migration route. These birds were prone to collision and electrocution with transmission lines.

The MoEF&CC also issued guidelines (May 2014) emphasising use of insulated conductors to prevent electrocution of birds. The sanctions for laying of transmission lines across LRK were granted subject to the condition of installing reflector or use of insulated cables.

Audit observed that there was no system to monitor compliance of conditions laid down in the sanction for laying transmission lines by the user agencies. In the absence of monitoring mechanism, compliance to the conditions (installation of reflectors, perch detector and insulated conductors) could not be ensured.

Audit called (May 2017) for compliance report of the mitigation measures taken. DCF, WAS, Dhrangadhra confirmed (June 2017) that mitigation measures were not implemented. In the absence of mitigation measures, life of flamingos as well as other birds was at threat while flying through these areas.

#### **3.1.10 Conclusion and Recommendations**

**Wildlife conservation efforts in Gujarat have yielded positive results as indicated by the increasing number of Asiatic Lions from 308 in 2011 to 356 in 2015. This increase exerts pressure on the existing PAs. Despite this, no new protected habitat for lions has been approved since 2008.**

<sup>17</sup> GETCO (two cases), PGCIL, SSNNL, Vestas Wind Technology India Private Limited.

**Audit also observed that while notifying the ESZ around three PAs, the area of forest land and government wasteland was reduced considerably, which lacked justification. The implementation of modern technology for the conservation of Asiatic Lion was very slow. Audit also observed instances of allowing prohibited activities within the protected areas and not ensuring compliance with conditions subject to which certain projects were permitted within the Protected Areas.**

*The Government may:*

- *implement projects for introduction of modern technology for conservation of Asiatic Lions as recommended by the Task Force.*
- *ensure regulation of activities within Protected Areas in compliance with the provisions of Wildlife Protection Act, 1972 and Forest Conservation Act, 1980 and directions of MoEF&CC.*

## **NARMADA, WATER RESOURCES, WATER SUPPLY AND KALPSAR DEPARTMENT**

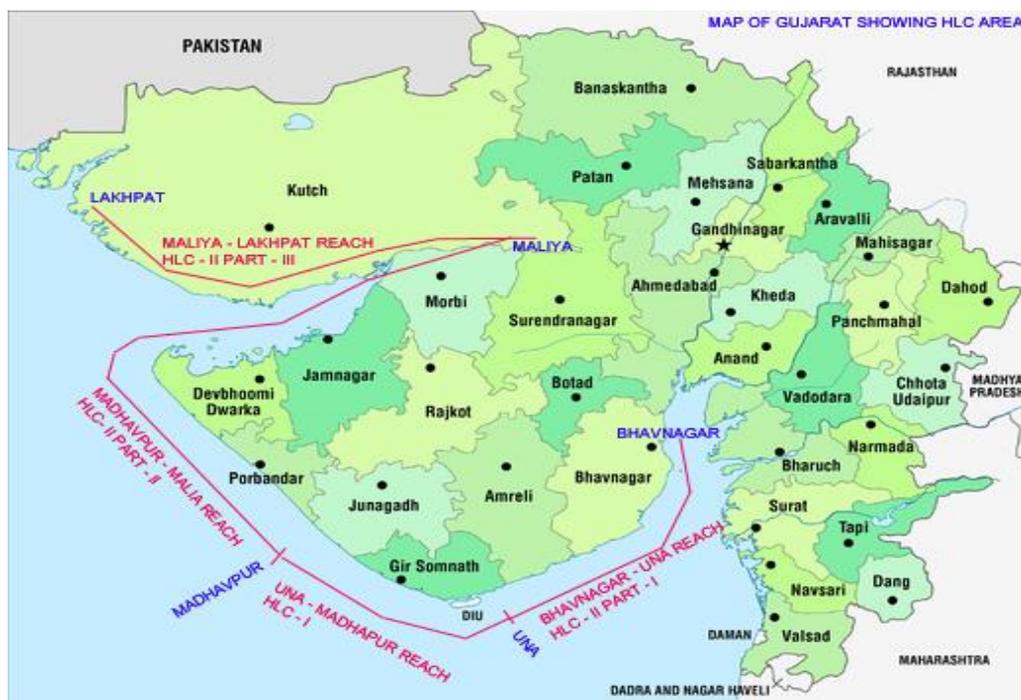
### **3.2 Salinity Ingress Prevention Scheme**

#### **3.2.1 Introduction**

Gujarat has a coastline of more than 1600 km, which is about one-third of the total coastline of India. Of this, Saurashtra and Kachchh cover 1,125 km from Bhavnagar to Lakhpat. Due to excessive withdrawal of water for irrigation, irregular and very low precipitation, highly porous geological formations, low natural recharge and poor land management; sea water had ingressed towards land. This has affected the lives of the people by making the available ground water saline rendering it unsuitable for irrigation and drinking purposes. Further the cultivable land had also transformed into saline land making it unfit for agriculture. The Government of Gujarat (GoG) therefore appointed two High Level Committees (HLCs) in 1976 and 1978 to study the problem of salinity ingress and suggest appropriate remedial measures.

#### **3.2.2 Reports of High Level Committees**

The first HLC was appointed in 1976 and submitted its report in 1978 which was accepted by the GOG in the same year. This HLC covered a 160 km stretch between Una and Madhavpur reach. The second HLC was appointed in 1978 and gave a report on 180 km Bhavnagar-Una reach in 1983 which was accepted by the GoG in 1984. The same HLC gave its report on 425 km Madhavpur- Maliya reach and 360 km Maliya- Lakhpat reach in 1984, which the GoG accepted in 1992.



Map showing reaches studied by HLCs

The Committees broadly classified their recommendations to check salinity ingress and manage it, under four techniques as depicted in **Table 2** below:

**Table 2: Recommended techniques and the activities covered under each**

Techniques	Activities covered
Management technique	Change in Cropping Pattern, Setting up Trial Cum Demonstration farms and Ground Water Regulation
Salinity control technique	Constructing Tidal Regulators and Bandharas
Recharge technique	Constructing Recharge Tanks, Recharge wells, Check dams, Spreading channels, Connecting channels, Afforestation and Gully and <i>Nalla</i> plugging
Coastal land reclamation	Constructing Coastal bund and Coastal land reclamation

Depending on the nature of activity, the HLCs recommended the number or length of structures to be created and area of land to be covered by each activity. The works done as per the recommendations of the HLCs are broadly referred to as the Salinity Ingress Prevention Scheme (SIPS), which is being implemented by Narmada, Water Resources, Water Supply and Kalpsar Department (the Department).

### 3.2.3 Scope of Audit

The audit of SIPS was done to assess the status of implementation of the recommendations of HLCs; planning, implementation and monitoring of various remedial measures undertaken during 2012-13 to 2016-17; and the impact of such interventions on the salinity ingress in all the four reaches covered by the HLCs.

Earlier a Performance Audit (PA) on this topic had featured in Audit Report No. 2 (Civil) for the year ended 31 March 2010. The PA recommended the

constitution of High Level Review and Monitoring Committee, enactment of ground water legislation, complete acquisition of land for smooth and effective implementation of works, construction of spreading channels to be taken up simultaneously with construction of Tidal Regulators/ *Bandharas* and completion of remaining works suggested by the HLCs. The recommendations made in the PA were also considered during this audit and are suitably commented in succeeding paragraphs. The PA is yet to be discussed in the Public Accounts Committee (December 2017).

The audit covers a period of five years from 2012-13 to 2016-17. The works under SIPS are being undertaken by the Salinity Ingress Prevention Circle (SIPC), Rajkot and Kachchh Irrigation Circle (KIC), Bhuj. There are five divisions including one Ground Water Division under SIPC, Rajkot and four divisions under KIC Bhuj. All the divisions except the Ground Water Division, Rajkot<sup>18</sup> were covered under this audit.

### **3.2.4 Audit Findings**

The Audit findings have been discussed under three broad headings: (i) Status of implementation of the HLCs recommendations, (ii) Planning, Implementation and Monitoring of the SIPS activities undertaken during 2012-13 to 2016-17 and (iii) Impact of the activities done for prevention of salinity ingress in these reaches.

### **3.2.5 Status of implementation of the HLCs recommendations**

#### ***3.2.5.1 Non-completion of the remedial measures suggested by the HLCs***

The reach-wise status of the remedial measures as of March 2017 *vis-a-vis* the recommendations of the HLCs is given in **Appendix VIII**. The HLCs recommended a period of seven to ten years for the completion of all the activities suggested. Considering the acceptance of the recommendations of HLCs by the GoG for implementation, all the recommended works should have been completed latest by 2002-03. Further, they had also suggested that activities coming within certain identified stretches should be given more priority and completed within three years. The details of activities to be covered and actually covered in such priority stretches are detailed in **Appendix IX**. The status as given in **Appendix VIII** is summarised in **Table 3** below:

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<sup>18</sup> The Ground Water Division is engaged in monitoring and maintenance of data related to water levels and quality of ground water in the observation wells. The relevant information was obtained through Circle offices.

**Table 3: Status of implementation of HLCs recommendations as on March 2017**  
(in Numbers unless otherwise mentioned)

Particulars	Recommendations of HLCs	Recommendations completed	Percentage of stretch wise and overall completion				
			Una-Madhavpur	Bhavnagar-Una	Madhavpur-Maliya	Maliya-Lakhpat	Overall
<b>Management Technique</b>							
Trial cum demonstration (TCD) farms	79	0	0.00	0.00	NR	0.00	0.00
<b>Salinity Control Technique</b>							
Tidal regulator <sup>19</sup> (TR) and Bandhara <sup>20</sup>	180	100	105.88	37.84	19.72	98.18	55.56
<b>Recharge Techniques</b>							
Check dams <sup>21</sup> (CD)	1,575	1,358	241.33	71.33	60.65	92.43	86.22
Recharge Tanks <sup>22</sup> (RT)	122	41	71.43	70.00	10.00	36.00	33.61
Recharge Wells <sup>23</sup> (RW)	1,480	1,244	99.00	30.00	9.41	564.67	84.05
Recharge Reservoir (RR)	43	18	NR	45.45	28.57	NR	41.86
Gully/ Nalla <sup>24</sup> Plugging	85,400	4,487 <sup>25</sup>	NR	0.00	0.00	0.00	5.25
Spreading Channel <sup>26</sup> and Connecting Channel <sup>27</sup> (in Kms)	906	291	123.82	4.49	25.83	42.77	32.12
Afforestation (in Hectares (ha))	1,04,750	5,867	11.73	0.00	0.00	0.00	5.60
Raising of shelter belt (in ha)	4,900	0	NR	NR	NR	0.00	0.00
Improvement and afforestation of mangrove forest (in ha)	1,050	0	NR	NR	NR	0.00	0.00
<b>Coastal Land Reclamation</b>							
Coastal Bund (in Kms)	60	0	NR	NR	NR	0.00	0.00
Coastal Land Reclamation (in ha)	39,500	0	NR	0.00	0.00	0.00	0.00

(Source: Information provided by the Department)  
NR means there were no recommendations in HLC report.

From analysis of the **Appendix VIII** and **Table 3** above, audit observed that except in case of check dams and recharge wells the progress of works was very slow. No action/ limited action was taken for establishment of TCD farms, coastal land reclamation, gully plugging and afforestation. Even the plan document, detailed project report and budget estimates were not prepared for these activities. Out of the four reaches, in Bhavnagar-Una and Madhavpur-Maliya reaches the overall progress of works was very slow. In respect of check dams and spreading channels the implementation in these reaches was between four to 71 per cent whereas in Una-Madhavpur reach these works had been done more than recommended. In Maliya-Lakhpat reach, as per the recommendation of the HLC, initially construction of 150

<sup>19</sup> These are walls with regulating gates at the mouth of big rivers.

<sup>20</sup> These are walls with crest level above high tide level on small rivers.

<sup>21</sup> These are constructed for creating small storages on existing rivers.

<sup>22</sup> These are constructed for making use of local depressions filled by diverting surplus water.

<sup>23</sup> These are open wells filled with rubble, gravel and sand.

<sup>24</sup> These are plugging on small tributaries of the rivers/ nallas to arrest flood water and detain the same for larger duration for recharge and also conserve soil erosion.

<sup>25</sup> The activity was done in Una-Madhavpur reach wherein there were no recommendations hence percentage is nil in table.

<sup>26</sup> A channel constructed when recharge is desired along a narrow but continuous long area.

<sup>27</sup> Interlinking channels to connect two reservoirs, rivers or spreading channels.

recharge wells at an estimated cost of ₹ 10 lakh *per* well were proposed to the 13<sup>th</sup> Finance Commission. Subsequently considering the technical aspects and suggestion of the geologist, the estimated cost of each recharge well was reduced to around ₹ one lakh. Hence, due to reduction in cost, the number of recharge wells to be built was increased to cover more area. Therefore, the implementation was to the extent of 564.67 *per cent* of the works recommended. On the other hand, in Bhavnagar-Una reach and Madhavpur-Maliya reach these works were implemented only to the extent of nine to 30 *per cent*.

The measures coming within Meghal river Basin (Una-Madhavpur), Maleshri River Basin (Bhavnagar-Una), Kalipat River Basin, Ruparel River Basin and Machchhu River Basin (Madhavpur-Maliya) and Bhukhi River Basin, Kharod-Rajda River Basin and Kankavati River Basin (Maliya-Lakhpat) were to be given priority and completed within three years. However, in Bhavnagar-Una and Madhavpur-Maliya reach, the works were not completed even in these priority areas as on March 2017 as detailed in **Appendix IX**. In Madhavpur-Maliya, out of 111 structures recommended in the three priority areas, the implementation was to the extent of 22.52 *per cent* as only 25 structures had been implemented. The progress was very slow in case of recharge wells. In Una-Madhavpur and Maliya-Lakhpat reach most of the works were implemented more than recommended due to reduction in costs as mentioned in the preceding paragraph. In Bhavnagar-Una reach except for construction of check dams other activities remained incomplete.

The Department stated (October 2017) that the slow progress in Bhavnagar-Una reach was because of poor foundation strata with low bearing capacity and problems in private land acquisition. Further the progress in Madhavpur-Maliya reach was slow because the coastal reach of 360 kms out of the total length of 425 kms was subsequently declared to be within the boundaries of Marine National Park (MNP) in 1982. This has substantially restricted the activities.

Reply is not convincing as the HLCs recommendations for Madhavpur-Maliya reach were submitted in 1984 *i.e.*, after declaration of MNP in 1982. The same was approved by the GoG in 1992. The HLCs recommended suitable sites for the implementation of the activities based on the geology and geomorphology of the area and their field studies. Though detailed investigation of the individual suggested sites were not available in the report, the Department had sufficient time to work out the alternative plans or designs based on the problems encountered. The reasons do not explain the delay of 25 to 39 years in the implementation of the HLC recommendations.

### **3.2.5.2 Cost escalation due to delay in implementation of SIPS**

The HLC-I estimated the cost of the proposed structures and remedial measures for the Una-Madhavpur reach at ₹ 64 crore while HLC-II estimated the cost for Bhavnagar-Una, Madhavpur-Maliya and Maliya-Lakhpat reaches at ₹ 168.70 crore, ₹ 370.42 crore and ₹ 186 crore respectively. As against the original cost of ₹ 789.12 crore estimated by the HLCs, a total expenditure of ₹ 1,045.65 crore had been incurred upto March 2017. For the remaining

works the estimate has been revised to ₹ 2,544.79 crore. Thus, due to delay in implementation of the recommended works, the cost of the scheme has escalated by 455 *per cent*.

The Department (October 2017) stated that out of the escalation of 455 *per cent* in the estimated cost, 368 *per cent* was because of inflation during the said period. Further as HLC was constrained by time, it had considered lumpsum cost for the recommended structures. When actual costs were worked out after detailed survey, design and investigation, these were much higher.

Reply is not convincing as any time lag in implementation is bound to escalate the cost due to inflationary pressures. Implementation of activities within given time frame is essential to prevent inflationary impact and timely achievement of intended objectives. Even if cost estimates of HLCs were not detailed then the Department should have undertaken revision in estimates based on detailed survey and appraised the Government accordingly.

### **3.2.6 Planning, Implementation and Monitoring of the SIPS activities undertaken during 2012-13 to 2016-17**

The HLCs suggested the remedial measures to be undertaken on a high priority basis in a time bound manner and recommended a period of seven to 10 years for their completion. The HLCs also recommended constitution of a High Level Review and Monitoring Committee comprising experts from the various disciplines *viz.*, irrigation, agriculture, forest, soil conservation, ground water, public health, planning and finance to monitor and periodically review the progress made in implementation of the scheme and to suggest modifications, if found necessary. The Audit Report No. 2 (Civil) for the year ended 31 March 2010 had recommended constitution of the Review and Monitoring Committee. The Department intimated (June 2017) that no such Committee has still been formed.

On being requisitioned for the overall planning undertaken for implementation of the HLC recommendations, the Department stated (June 2017) that while submitting proposals for financial assistance to Central Government under 12<sup>th</sup> and 13<sup>th</sup> Finance Commission, comprehensive programme was chalked out for implementing the recommendations by including schemes based on technical merit. However, no documentation suggestive of any road map for achievement of the recommendations within the stipulated time frame was furnished to audit. As regards planning for individual activities under each recommendation of the HLC, Audit observed that these were planned by the concerned implementing divisions of the Department. For this, before undertaking the activities, the concerned divisions were required to plan for the project by conducting site survey and studies for assessing the technical viability. Thereafter, a proposal for the project containing the details of land requirement, status of land acquisition, fund requirement and the intended benefits was submitted to the GoG, based on which administrative approval and budgetary allocations were made. This was followed by acquisition of

required land, preparation of detailed drawings for the works, inviting tenders, awarding the works and finally implementing them.

Thus, there was no holistic planning in terms of the time frame required to complete the scheme as a whole, fund requirements for the implementation of the entire scheme based on detailed investigation and requirement of land for completion of the whole scheme. Due to lack of overall holistic planning for implementation of the SIPS, individual recommendations of HLCs were planned and implemented on piece-meal basis. Consequently, as referred in **Paragraph 3.2.5.1**, except in case of check dams and recharge wells the progress of other activities was very slow and no action was taken for establishment of TCD farms and raising of shelter belts. On the other hand, limited action was taken for construction of tidal regulator and *bandhara*, coastal land reclamation, gully plugging and afforestation.

The Department stated (October 2017) that the time frame of seven to 10 years recommended by HLC was based on a preliminary survey, whereas actual implementation encountered many bottlenecks which hindered the progress of the works. The works under SIPS picked up only after funds were available under 12<sup>th</sup> and 13<sup>th</sup> Finance Commission.

The reply confirms that there was lack of holistic planning for implementation of SIPS.

### 3.2.6.1 Overall financing of the SIPS activities

The details of the budget provisions and expenditure incurred by the Department in SIPS during the period 2012-13 and 2016-17 are shown in **Table 4** below:

**Table 4: Budget provisions and expenditure incurred relating to SIPS activities**

(₹ in crore)

Year	Budget provision	Final Modified Grant	Expenditure incurred	Excess (+)/Savings (-) with reference to budget provisions and in terms of percentage	
				in absolute terms	in percentage
2012-13	105.70	68.51	66.73	-38.97	(-36.87)
2013-14	85.70	65.76	62.97	-22.73	(-26.52)
2014-15	96.50	124.95	61.81	-34.69	(-35.95)
2015-16	26.41	32.22	32.78	+6.37	(+24.10)
2016-17	64.97	13.23	13.07	-51.90	(-79.88)

(Source: Information furnished by the department)

As seen from **Table 3 and 4**, though the SIPS activities recommended by HLCs were incomplete and funds were available under budgetary allocations, the Department did not incur expenditure even to utilise the available budgetary allocations. In absolute terms the expenditure on SIPS decreased during 2012-13 to 2016-17.

The SE, SIPC Rajkot and SE, KIC, Bhuj stated that the savings were due to improper initial estimates, delays in approvals and sanctions as well as slow progress in execution of works.

The above allocations also included an amount of ₹ 150 crore recommended by the 13<sup>th</sup> Finance Commission (FC) as grant-in-aid for salinity ingress under State Specific Needs. The conditions prescribed for release of instalments were not satisfied by the department fully leading to release of only ₹ 116.98 crore as depicted in **Table 5** below:

**Table 5: Details of utilization of grant received under 13<sup>th</sup> FC**

(₹ in crore)

Year	Instalment of 13 <sup>th</sup> FC to be released as per action plan	Instalment available for utilization during the year			Details of utilization of grant
		Instalment released during the year	Carry forward of unutilized grant	Total grant available for utilization	Grant utilized upto 31 March of the year
2011-12	31.61	31.61	0	31.61	17.69
2012-13	42.07	42.07	13.92	55.99	24.51
2013-14	43.30	0	31.48	31.48	24.20
2014-15	33.02	43.30	7.28	50.58	50.09
2015-16	0	0	0.49	0.49	0.49
<b>Total</b>	<b>150.00</b>	<b>116.98</b>			<b>116.98</b>

(Source: Information received from Department)

As noticed from **Table 5**, the third instalment of ₹ 43.30 crore due in 2013-14 was not released by GoI due to utilisation of only 25 per cent (₹ 10.59 crore<sup>28</sup> out of grant of ₹ 42.07 crore) of the second instalment upto March 2013 as against the minimum laid down utilisation of two third of the instalment. The third instalment was subsequently released in 2014-15 and consequently the fourth instalment of ₹ 33.02 crore, which was to be released in 2014-15 was not released and hence lapsed. Thus, due to non-utilisation of available funds in time and consequent lapse of the fourth instalment of the 13<sup>th</sup> FC grant, the GoG was deprived of the central assistance of ₹ 33.02 crore towards prevention of salinity ingress.

The under-utilisation of 13<sup>th</sup> FC grant received from GoI was attributed to inclusion of some schemes in the 13<sup>th</sup> FC proposal, which were at advance stages of investigation/ design/ estimates. However, later some of these schemes were dropped and others were added based on merit. Further there were delays in obtaining no objection certificate from Coastal Regulation Zone and Forest Authorities.

Audit also observed that in four divisions<sup>29</sup> under SIPC, Rajkot, involving 14 works to be executed under 13<sup>th</sup> FC grant-in-aid, funds of ₹ 30.65 crore were transferred to Executive Engineer (EE), Irrigation Mechanical Division No.6, Rajkot as deposits between March 2012 and March 2015 and shown as grant utilisation in the transferring divisions. Out of this, an amount of ₹ 25.69 crore was subsequently received back by the transferring divisions from the mechanical division between May 2012 and June 2014 and shown as deposits received for executing works from other divisions. The remaining

<sup>28</sup> Difference of grant of ₹ 24.51 crore utilised in 2012-13 and carry forward of unutilised grant of ₹ 13.92 crore of 2011-12.

<sup>29</sup> Salinity Control Division (SCD), Rajkot (4 works), SCD, Porbandar (6 works), SCD, Jamnagar (3 works) and SCD, Bhavnagar (1 work).

amount of ₹ 4.96 crore was still lying (March 2017) with the Mechanical Division No.6, Rajkot.

The Department confirmed (October 2017) that the funds were transferred to utilize the grant received from 13<sup>th</sup> FC. Also as mentioned in the preceding paragraph the Department stated that the works under SIPS picked up only after funds were available under 12<sup>th</sup> and 13<sup>th</sup> Finance Commission.

This shows that there was no physical and financial planning for completion of the scheme within a certain timeframe. Even when the funds were available with the Department under 12<sup>th</sup> and 13<sup>th</sup> Finance Commission it could not fully utilize them. The funds were diverted to show the utilisation of grant and to receive subsequent instalment. This resulted in erroneous booking of expenditure and irregular parking of funds, apart from the planned activities not being completed.

The observations in relation to planning, implementation and monitoring of the SIPC activities for the period 2012-13 to 2016-17 based on a test check of 105 out of the 265 works executed during the period are discussed under the four techniques viz., Management technique, Salinity control techniques, Recharge techniques and Coastal land reclamation.

## **Management Techniques**

### ***3.2.6.2 Change in cropping pattern and establishment of Trial Cum Demonstration (TCD) Farms***

The HLCs suggested change in cropping pattern by persuading the farmers to opt for crops requiring lesser quantity of water and which could resist salinity. It also emphasized educating the farmers in growing selected crops for its effective implementation. The techniques proposed to be adopted were to be tested in small representative areas termed as Trial Cum Demonstration (TCD) farms and demonstrated to the cultivators by organising short term training programmes.

As shown in **Table 3**, against 79 TCD farms recommended by the HLCs, no TCD farms have been established in any of the four reaches (March 2017). The information on existing cropping pattern and changes if any, was not available with the Department.

The Department (October 2017) stated that the establishment of TCD farms pertains to Agriculture Department. It was further added that the Government had developed seven TCD farms/ research stations which were working under State Agriculture Department and Agricultural University, Junagadh. The SE KIC Bhuj stated (May 2017) that the problems of the farmers were being solved during *Krushhi Mela* held every year by the scientists from the Agricultural University.

The replies are not correct as the seven TCD farms mentioned therein are research stations of Agriculture University Junagadh established between 1852

and 1966 *i.e.*, much before the constitution of HLCs. The Agriculture Department also denied (April 2017) the establishment of any TCD farms or conduct of any training activity under the SIPS. Thus the fact remains that no TCD farms were established in the four reaches despite the recommendations of the HLCs.

### 3.2.6.3 *Non-enactment of ground water legislation*

The HLCs recommended in 1978 the enforcement of ground water legislation to impose control on the excessive use of ground water<sup>30</sup>. The Ground Water Division No. 2, Rajkot under Gujarat Water Resources Development Corporation Limited (GWRDC) in its report<sup>31</sup> also recommended a ground water development plan under which the user industry would pay for the development of the ground water in proportion of their use so as to generate funds for necessary ground water recharge in the area. In the Performance Audit printed in Audit Report No. 2 (Civil) for the year ended 31 March 2010 also the same was pointed out wherein it was recommended by Audit that the legislation should be enacted. However, it was observed that the same has not been enacted (March 2017). There was also no plan in place to control and regulate the withdrawal of ground water.

The Department (October 2017) stated that under directions of the Hon'ble Supreme Court the regulation and control of the ground water is being done by Central Ground Water Authority (CGWA). The Gujarat Ground Water Authority (GGWA) is acting as a recommendatory body and permissions are granted by CGWA. The draft bill for enforcement of ground water legislation is under process of finalization.

The reply is not convincing as the Ministry of Water Resources, GoI had circulated model bill in 2005 to enable the States to enact ground water legislation. Such an Act was enacted and implemented by many states such as Goa, Tamil Nadu, Kerala, West Bengal, Himachal Pradesh and Union Territories of Lakshadweep and Puducherry but it was not enacted and implemented by Gujarat (March 2017).

Thus the fact remains that no management techniques recommended by the HLCs have been implemented even after a lapse of 25 to 39 years of its acceptance by the GoG.

## **Salinity Control Techniques**

The HLCs observed that due to flat slopes of the river bed near the mouth of the rivers, tidal waves were entering through the estuaries upto six to seven kilometres inland. Therefore, stopping of the tidal ingress by sealing the mouth of the rivers by constructing Tidal Regulators (TRs)/ *Bandharas* near the mouth of the rivers was recommended by the HLCs. As shown in **Table 3**, against 180 TRs/ *Bandharas* recommended by the HLCs, 100 TRs/ *Bandharas* have been constructed in the four reaches. The progress was significant in

<sup>30</sup> To ensure that the total withdrawal was not more than the annual recharge.

<sup>31</sup> Report on Salinity Ingress and Ground Water Monitoring in coastal area between Okha-Maliya (2011).

Una-Madhavpur and Maliya-Lakhpat but very low in Bhavnagar-Una and Madhavpur-Maliya reaches.



Photograph of Medha creek TR at Porbandar

Instances of infructuous expenditure noticed during test check in Audit on incomplete works due to non-acquisition of land, unfruitful expenditure on damaged works and construction of *Bandharas* away from the mouth of the rivers are discussed below:

#### **3.2.6.4 Infructuous expenditure on incomplete TRs/ Bandharas**

In three divisions<sup>32</sup>, in respect of three works of TRs/ *Bandharas* it was noticed that the works were awarded between February 2007 and March 2012 without acquisition of the required land resulting in the works remaining incomplete till March 2017. Thus, the expenditure of ₹ 11.10 crore on these works was rendered unfruitful. In all these cases the GoG had specifically directed that required land should have been acquired before award of works. The divisions had gone ahead with the award of works without ensuring compliance with this condition resulting in the incomplete works as discussed below:

- Executive Engineer (EE), Salinity Control Division (SCD), Rajkot awarded (January 2010) the work of constructing Bodki TR (length 4,320 metre) in Maliya taluka of Rajkot district at a tendered cost of ₹ 7.96 crore with scheduled completion by July 2011. However, due to non-acquisition of land because of stiff opposition from the farmers (January 2012), the work could not be executed in Chainage (Ch) 2,090 metres to 4,320 metres of the right bank earthen dam. Therefore, the construction of TR could not be completed. The division paid (March 2013) ₹ 3.82 crore to the contractor and relieved him from the remaining work in June 2013. On the request of the land owners, till the

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<sup>32</sup> (i) SCD, Rajkot, (ii) SCD, Jamnagar and (iii) KID, Bhuj.

land was acquired, a gap of 50 metres on the right side of the spillway and 30 metres on the left side of the spillway was kept open for the passage of rain water into the sea and prevent the submergence of the land upstream. However, these gaps defeated the purpose of the TR in checking the tidal ingress. In respect of this work the GoG while giving the administrative approval had clearly stated that the work should not be awarded before acquiring the required land. Nevertheless, the contracts were awarded without acquiring the land resulting in unfruitful expenditure of ₹ 3.82 crore.

- EE, SCD, Jamnagar awarded (March 2012) the work of Pindara *Bandhara* (across river Nakajar) in Kalyanpur taluka of Jamnagar district at a tendered cost ₹ 3.13 crore with stipulated completion by February 2013. The work included construction of earthen dam from Ch (-) 110 metres to 90 metres, spillway from Ch 90 metres to 180 metres and earthen dam from Ch 180 metres to 1,070 metres. As the required land could not be acquired due to objections raised by the farmers, the agency was paid (March 2014) ₹ 3.03 crore and relieved from the work.

During site visit it was noticed (February 2017) that the earthen dam on the left hand side of the *Bandhara* was not constructed and the spillway was constructed only upto bucket level. Though the draft tender papers were approved by GoG with the specific condition that necessary consent or *kabja* of private land should be obtained before approving the tender, the division went ahead with the award of contract without ensuring compliance with this requirement resulting in the intended benefits of the work not being achieved even after incurring an expenditure of ₹ 3.03 crore.

- The work of Vira *Bandhara*, in Anjar taluka of Kachchh district was awarded (February 2007) by KICD, Bhuj at a tendered cost of ₹ 5.53 crore with scheduled completion by August 2008. However, as the work could not be completed due to non-acquisition of land, the agency was relieved in May 2012 after incurring expenditure of ₹ 4.25 crore. In the Performance Audit printed in Audit Report No. 2 (Civil) for the year ended 31 March 2010 it was pointed out in **Paragraph No. 1.1.9.6** that due to non-acquisition of private land, the work of the left bank earthen bund and the weir<sup>33</sup> could not be completed rendering the expenditure of ₹ 4.25 crore infructuous. During site visit it was also observed (March 2017) that the work of left bank earthen bund and the weir were still incomplete even as on date.

In reply the Department stated (October 2017) that Government waste land was more than 50 per cent of the required land. Since the same was in possession of the department and the private land owners had given their consent for the acquisition, the work order was issued as per PWD Manual. In respect of Bodki TR, tenders for remaining works were already approved and in respect of Pindara *Bandhara* and Vira *Bandhara* the process of land

<sup>33</sup> The escape provided for the passage of surplus water from a reservoir.

acquisition could not be started as new Land Acquisition Act, 2013 had come into force and guidelines for the same were not available (April 2017).

The replies are not convincing as the works were awarded against the explicit condition of GoG for acquisition of the required land before award of works. This resulted in unfruitful expenditure of ₹ 11.10 crore and non-achievement of intended objective of preventing sea water ingress.

Further, even in Audit Report No. 2 (Civil) for the year 2009-10 it was recommended that land acquisition should be completed before taking up the works for its smooth and effective implementation. However, the above instances reveal that the Audit's recommendation have not been acted upon by the Department.

### **3.2.6.5 Construction of TRs/ Bandharas away from the mouth of the rivers beyond Tidal reach**

The HLCs suggested stopping of tidal ingress into the land by constructing TRs/ *Bandharas* near the mouth of the rivers to seal them. It was noticed that TRs/ *Bandharas* mentioned in **Appendix X** were constructed beyond the tidal reach of the sea water. Hence, the sea water would still intrude and the *Bandharas* would not serve the purpose of prevention of sea water ingress. These would only act as a check dam for creation of sweet water reservoir. The construction of these TRs/ *Bandharas* near the mouth of the rivers would have prevented the sea water ingress and also brought more land into use.

In reply the Department stated (October 2017) that suggestion of the HLCs to construct TRs/ *Bandharas* on mouth of the creek is a general guideline. The mouth of creek is made of sand dunes with loose banks and poor geological sub-surface strata which is not technically suitable locations for construction of TRs/ *Bandharas*. Hence, TRs/ *Bandharas* are constructed at technically and economically suitable sites.

Reply is not convincing as the TRs/ *Bandharas* are salinity control structures meant for stopping of tidal ingress into the land by sealing the mouth of the rivers as shown in Photograph of Medha creek. The construction of these TRs/ *Bandharas* away from the mouth of rivers and beyond the tidal reach defeated the purpose of prevention of tidal ingress into the lands. The Department did not furnish the investigation reports showing non-feasibility of construction of the structures on the mouth of the rivers.

## **Recharge Techniques**

The HLCs recommended some artificial recharge techniques through construction of check dams, recharge tanks, recharge wells, recharge reservoirs, radial canal, spreading channel, afforestation and gully plugging to accelerate the induced infiltration in the affected areas. As shown in **Table 3**, except in case of check dams and recharge wells the progress of other activities under recharge techniques was very slow. The progress in these activities was significant in Una-Madhavpur and Maliya-Lakhpat reaches but very low in Bhavnagar-Una and Madhavpur-Maliya reaches.

Audit observations on the implementation of radial canal and spreading channel works are discussed below:

### **3.2.6.6 *Idling facility created in construction of Bodki radial canal***

The EE SCD, Rajkot planned construction of 2,940 metres long radial canal starting from Bodki TR in Maliya taluka of Rajkot District in anticipation of completion of Bodki TR and awarded the work in March 2013. The work was completed in February 2014 at a cost of ₹ 74.32 lakh. However, as discussed in **Paragraph 3.2.6.4** the work of Bodki TR was incomplete due to non-acquisition of requisite land. Thus, the construction of radial canal remained unfruitful due to non-availability of sweet water resulting in idling of facility worth ₹ 74.32 lakh (March 2017).

The Department stated (October 2017) that tender for the remaining work of Bodki TR is approved and the work would be started after 2017 monsoon.

### **3.2.6.7 *Non-completion of Pikhor radial canal***

The work of construction of four<sup>34</sup> radial canals upstream of Noli Reservoir in Mangrol taluka of Junagadh district was awarded (November 2011) by SCD, Porbandar at a tendered cost of ₹ 81.71 lakh with scheduled completion by October 2012. The work was shown as completed in August 2012 and final bill of ₹ 74.37 lakh paid.

We observed (February 2017) that against the total length of 2,015 metres to be excavated, the excavation was carried out only upto 1,830 metres. The canal was not excavated from 1,830 metres to 2,015 metres. Even in this stretch of 1,830 metres there was an unexcavated stretch of 30 metres between Ch. 240 metres and 270 metres due to water supply pipeline crossing the canal. This created hindrances in the flow of water in the initial stretch of the canal. The agency was relieved (August 2012) without completion of the work after payment of ₹ 74.37 lakh and without following the relieving procedures *viz.*, approval of excess/ saving in the work and approval of the Competent Authority to relieve the agency before making the final payment.

The Department (October 2017) accepted the partial blockage of canal between Ch. 240 metres and 270 metres and stated that the issue will be resolved soon with the concerned Gram Panchayat and Gujarat Water Supply and Sewerage Board. It was also stated that the work beyond Ch. 1,830 metres was aborted due to local opposition.

Thus the work was awarded without complete acquisition of land and the blockage of radial canal in the initial chainage hindered the flow of water. Therefore, intended benefits remained only partially achieved despite the expenditure of ₹ 74.37 lakh

<sup>34</sup> Pikhor (2.015 km), Shakrana (2.10 km), Limbora (0.84 km) and Mankhetra (0.72 km).

### 3.2.6.8 Incomplete stretches in work shown as completed

The construction of 6.60 km long spreading channel for joining river Netravati and Madhuvanti river Phase-I, in Mangrol taluka of Junagadh district was awarded in June 2009 by SCD, Porbandar. The work was shown as completed in March 2016 after incurring an expenditure of ₹ 2.54 crore.

We observed during site visit (February 2017) that the spreading channel was not excavated at Ch. 1,560 metres and Ch. 4,040 metres. It was also informed by the officials that the channel was not excavated at six other locations where cross drainage (CD) works were proposed. The proposal for getting administrative approval for construction of these eight CD works across the spreading channel was submitted by SCD, Porbandar (February 2017). Out of these, the work of four CDs is accepted and is in progress (October 2017).

Thus, due to missing links the envisaged benefits of the project could not be fully reaped even after lapse of nearly eight years since the award of the work and incurring expenditure of ₹ 2.54 crore.

The Department stated (October 2017) that the CD works will be completed in due course and water will flow in the entire length of the canal soon.

### 3.2.6.9 Non-completion of spreading channel due to non-acquisition of land

In the following cases as shown in **Table 6**, the concerned divisions proposed the work of spreading channel to divert the surplus water of the connected recharge reservoirs in the channel. The spreading channels were to be aligned parallel to the sea coast to serve as a good recharge cum salinity control device by creating a sweet water barrier and also facilitate irrigation facilities. The GoG had specifically directed that required land should have been acquired before award of works. However, the division had gone ahead with the award of works without ensuring compliance with this condition resulting in the incomplete works of spreading channel as discussed in **Table 6** below:

**Table 6: Incomplete works of spreading channels as on March 2017 due to non-acquisition of land**

Sl. No.	Name of work	Length of the channel	Cost incurred (₹ in crore)	Missing link (Status as on 31 March 2017)	Remarks
		Month of first work order			
1	Ozat-Madhuvanti spreading channel	24,430 m October 2006	11.81	Ch. 6,120 m to Ch. 6,360 m was held up due to non-acquisition of private land; three minor bridges at Ch. 6,270 m, Ch. 7,710 m and Ch. 12,360 m were yet to be constructed.	The Department stated (October 2017) that encroachment from Ch 6,120 m to 6,235 m (115 m) is removed and work order is issued in May 2017. Out of three bridges the work of two bridges at Ch. 7,710 m and 12,360 m are at DTP stage. Work in remaining length and one bridge at Ch. 6,270 m will be taken up after land acquisition completed.

Sl. No.	Name of work	Length of the channel	Cost incurred (₹ in crore)	Missing link (Status as on 31 March 2017)	Remarks
		Month of first work order			
2	Spreading channel (Radial Canal) from Medha creek TR	3,660 m July 2014	1.62	Work beyond Ch. 2,450 m was held up due to non-acquisition of land.	The Department stated (October 2017) that the work in remaining length will be completed after possession of land.
3	Spreading channel from Bhogat <i>Bandhara</i> to Medha creek TR	11,280 m February 2014	1.26	Ch. 1,290 m to Ch. 1,740 m due to non-acquisition of land.	The Department stated (October 2017) that the agency was paid for the work done and relieved from the work in November 2015.
4	Construction of spreading channel joining Hadiyana <i>Bandhara</i> to Und river	11,400 m February 2012	3.71	Ch. 7,950 m to Ch. 9,570 m (forest land) and Ch. 10,800 m to Ch. 11,400 m (private land) was held up due to non-acquisition of land.	The Department stated (October 2017) that land acquisition from Ch. 10,800 m to 11,400 m is now completed and work would be executed in due course.
5	Construction of spreading channel joining Khiri TR and Hadiyana <i>Bandhara</i>	6,900 m December 2008	6.85	Ch. 990 m to Ch. 1510 m (private land) was held up due to non-acquisition of land.	The agency was paid for the work done and relieved in April 2011. The Department stated (October 2017) that the work will be completed after possession of land is obtained.
6	Non-completion of spreading channel (radial canal) connecting Bed TR to Sarmat Khara Beraja	1,530 m (Ch. 1,020 m to Ch. 2,550 m) December 2007	0.52	Ch. 1,170 m held up due to passing of water supply pipe line.	The agency was paid for the work done and relieved in August 2012. The Department stated (October 2017) that the work will be completed in due course.
	<b>Total</b>		<b>25.77</b>		

Audit observed that the work was mainly held up due to non-acquisition of land. With the new Land Acquisition Act, 2013 coming into force for which the Rules were yet to be framed (March 2017), the land could not be acquired. Since the work could not be proceeded with, wherever the agency/ contractor requested, it was relieved from the work after paying for the quantum of the work done by them.

Thus, due to awarding the work by the Department without acquisition of requisite land, envisaged benefits of the project could not be fully reaped even after incurring expenditure of ₹ 25.77 crore as the water could not flow through the entire chainage and sweet water barrier could not be created.

In reply the Department stated (October 2017) that the oral consent of affected farmers was obtained and more than 50 per cent of total land (Government and private) was available, hence the work order was issued as per provisions of PWD Manual.

The reply is not convincing as despite the explicit instructions of the Government the work was awarded without complete acquisition of private land. As a result, the envisaged works could not be completed.

Further, even in Audit Report No. 2 (Civil) for the year ended 31 March 2010 it was recommended that land acquisition should be completed before taking up the works for its smooth and effective implementation. However, the above instances reveal that the Audit's recommendation have not been acted upon by the Department.

### **3.2.6.10 Slow progress in Afforestation work**

The HLCs stated that vegetation improves the rate of infiltration of water and thereby improves the recharge rate of water. It, therefore, recommended for creation of shelter belt of suitable trees and afforestation of waste lands, *gauchar* lands and village commons. However, as against afforestation of 1,10,700 ha<sup>35</sup> of land recommended by HLCs, the afforestation was carried out only in 5,867 ha<sup>36</sup> (5.30 per cent) upto March 2017.

The Department stated (October 2017) that afforestation work was initially carried out through the Forests and Environment Department as deposit works. The Forests and Environment Department did not furnish the details of the work done and expenditure incurred against the grant released despite repeated requests. Therefore, the Department did not release further grant for afforestation and in lieu thereof other recommendations of HLCs were stressed upon.

Reply is not convincing as the issue between two Departments could be sorted out through mutual co-ordination so that the recommendations of the HLCs are implemented.

### **3.2.6.11 Non-plugging of Gully/ Nalla**

The HLC-II emphasised different measures to harvest all available run-off water at different locations to induce ground water recharge. Thus, a series of *nalla plugs* would help in arresting the surface run-off and impounding it at intervals in *nalla* ponds. This would accelerate infiltration rate and consequently the recharge efficiency of the ground water resources.

As mentioned in **Table 3**, against the total 85,400 *nalla* plugs recommended in three reaches *viz.*, Bhavnagar-Una (20,000), Madhavpur-Maliya (45,400) and Maliya-Lakhpat reach (20,000), no such activity has been carried out in any of these reaches (March 2017).

The Department stated (October 2017), that the work was initially carried out as deposit work by Gujarat State Land Development Corporation (GSLDC). It was further stated that as GSLDC did not furnish the details of the work done and expenditure incurred against the grant released for deposit works despite

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<sup>35</sup> The figure of afforestation here does not tally with that in **Table-3** because this includes afforestation, raising of shelter belts, improvement and afforestation of mangrove forest.

<sup>36</sup> The work is carried out only in Una- Madhavpur reach. No work is carried out in any other reach.

repeated requests, no further grant was released and other recommendations of HLCs were stressed upon.

Reply is not convincing as the issue between the Department and the Government company could be sorted out so that the recommendations of the HLCs are implemented.

### 3.2.6.12 Coastal Land Reclamation

The HLC-II recommended utilization of sweet water from certain reservoirs for reclaiming the coastal saline land for agricultural development by leaching through available sweet water with suitable drainage system. The Committee suggested that the sweet water of the medium irrigation schemes and recharge schemes could be utilized for leaching and reclamation of these areas. However, as the problem was acute, it suggested utilisation of Narmada water on a priority basis. Though HLC identified total of 39,500 ha of coastal land to be reclaimed in Bhavnagar-Una, Madhavpur-Maliya and Maliya- Lakhpat reach, no coastal land reclamation activity was carried out in any of these reaches (March 2017).

The Department stated (October 2017) that efforts were made in four cases<sup>37</sup> to renovate the existing bunds (3,880 ha). It was also stated that in case of Goinj 2 reclamation bund of 468 ha (which was a new reclamation *bund*), the administrative approval had been accorded and detailed technical sanction was under preparation. The Department informed that the Government had included 10 salinity preventive schemes under “Sauni Yojana”, to be filled up with one million acre feet (MAF) surplus water of Narmada which would be diverted to nearby saline land. Hence it was already planned to use surplus water of Narmada for salinity prevention schemes.

The reply is not convincing as the works of four reclamation *bunds* were for renovation of the existing *bunds* and would result in reclamation of only 9.82 *per cent* of the land reclamation recommended by the HLCs. No new coastal *bund* had been constructed as recommended by the HLC. Moreover, the feasibility study to utilise one MAF surplus water of Narmada to Kachchh district was awarded in 2010 and even after passage of seven years this work is still at survey and investigation stage (March 2017).

### 3.2.7 Impact Assessment

The HLCs suggested frequent observations and monitoring of the improvement/ deterioration in water levels and ground water quality in the representative observation wells<sup>38</sup>. The HLC-II had specifically recommended annual monitoring of ground water. The Department had also stated that the annual status report based on the ground water monitoring was quite necessary

<sup>37</sup> Renovation of Jodia- Manomora reclamation bund (2,745 ha), Renovation of Khijadiya- Dhunvav reclamation bund (800 ha), Renovation of Sarmat- Khara Beraja reclamation bund (70 ha), Renovation of Salaya- Goinj reclamation bund (265 ha).

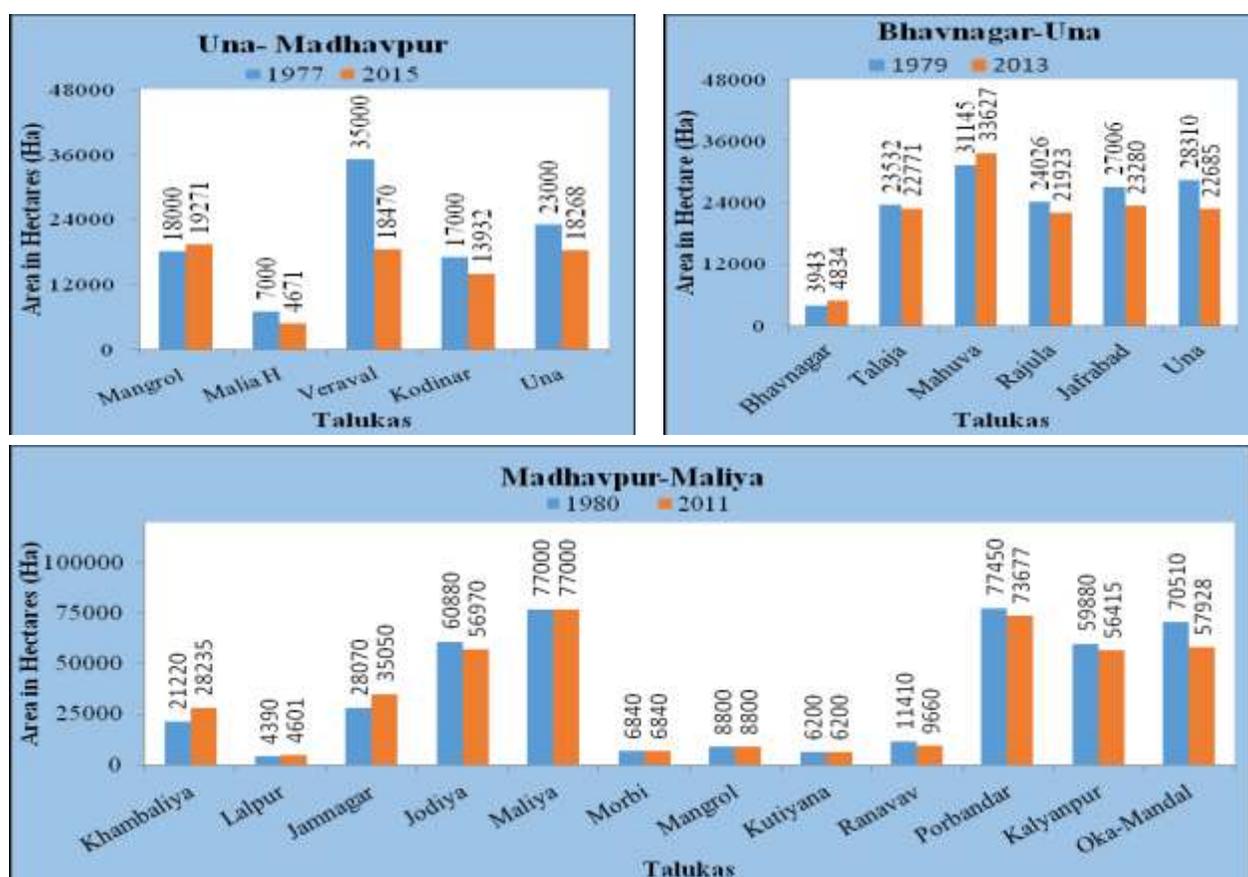
<sup>38</sup> The study area is monitored for ground water quality changes through designated active observation wells located along the geophysical profiles fixed since 1980. Number of wells have been increased as per requirement over the years.

to evaluate the efficacy of the work done. It was noticed that the evaluation reports on the basis of the analysis of the water samples in the observation wells were prepared for the Una-Madhavpur reach upto May 2015, Bhavnagar-Una reach upto 2011-12 and Madhavpur-Maliya upto 2011. No reports were prepared after these periods. For Maliya-Lakhpat reach, the SE, KIC, Bhuj stated (March 2017) that no evaluation reports were prepared. The shortage of technical staff was stated as the reason for non-preparation of the evaluation reports.

Based on the available evaluation reports and other data obtained from the Department, the status of salinity ingress and quality of ground water is discussed in succeeding paragraphs.

### 3.2.7.1 Change in area affected by salinity

The graphs below show the taluka wise change in the area affected by salinity ingress in Una-Madhavpur, Bhavnagar-Una and Madhavpur-Maliya reaches. The data has been compiled from evaluation reports prepared for the concerned reaches and the information furnished by the concerned divisions.

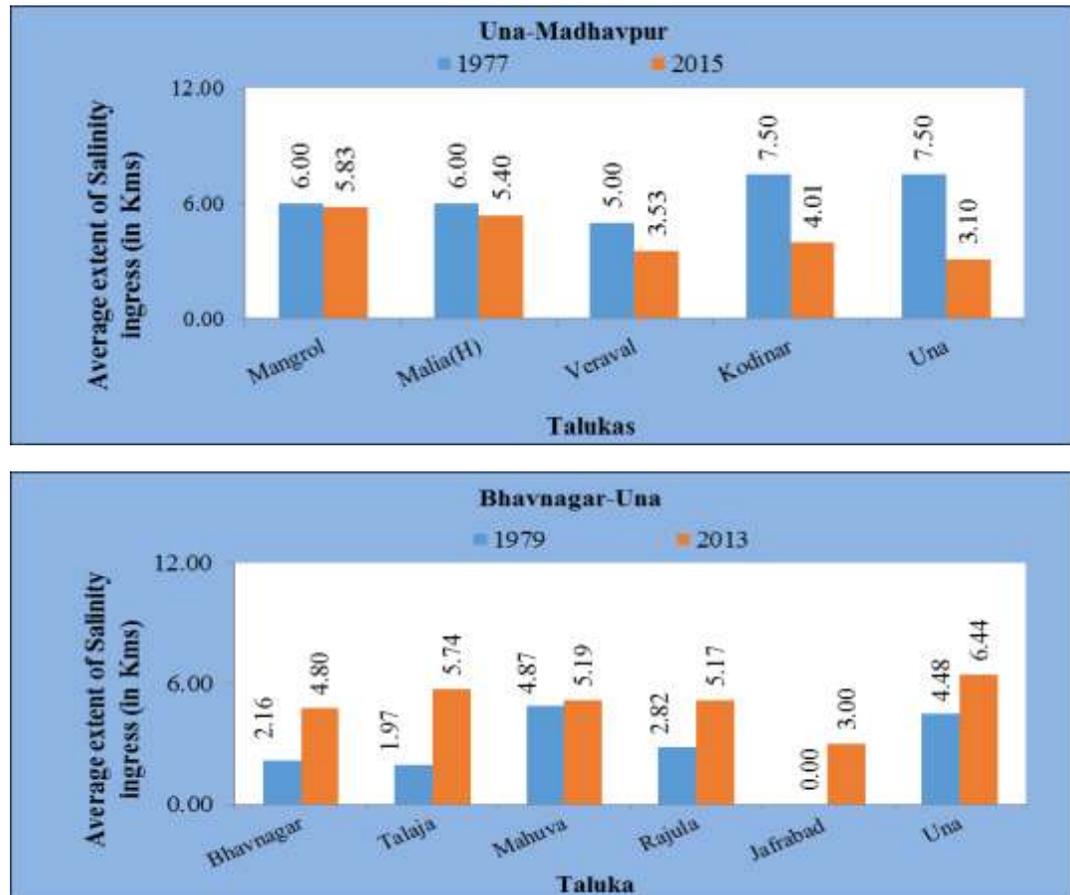


Graphs showing the changes in Area (in Hectare) affected by salinity ingress

It can be seen that in Una-Madhavpur reach, the area affected by salinity reduced in all talukas (except a marginal increase in Mangrol taluka). In Bhavnagar-Una, there was increase in salinity ingress area in Bhavnagar and Mahuva while it decreased in Talaja, Rajula, Jafrabad and Una talukas. In Madhavpur-Maliya reach in seven talukas there was either increase or no

change in area affected by salinity ingress viz., Khambaliya, Lalpur, Jamnagar, Maliya, Morbi, Mangrol and Kutiyana while in other five talukas it reduced.

The graphs below show the taluka wise change in the average extent of salinity ingress from the sea coast in Una-Madhavpur and Bhavnagar-Una reaches. It can be seen that in Bhavnagar-Una the extent of salinity ingress increased in all the talukas; whereas it decreased in all the talukas of Una-Madhavpur. The data for Madhavpur-Maliya and Maliya-Lakhpat reaches was neither made available nor was the information available in the evaluation reports.



Graphs showing changes in average extent of salinity ingress (in kilometres)

It can be seen from the above that in Una-Madhavpur reach, where the progress of SIPS works was good, area affected by salinity as well as the extent of salinity ingress has reduced (except a marginal increase in Mangrol taluka). On other hand, in Madhavpur-Maliya reach, where the progress of works recommended by HLC was slow, area affected by salinity has increased or remained almost static in most of the talukas.

The Department stated (October 2017) that Mangrol taluka does not show remarkable change as the area is highly cavernous so the ground water movement is very high. There are limited sources of recharging of ground water and the demand of water for agriculture has also restricted the improvement. The Morbi and Maliya talukas which possess saline soil in their coastal area have also not shown any improvement. In Khambaliya, Lalpur

and Jamnagar due to issue of land acquisition of the reserve forest area falling in the submergence of the proposed salinity control schemes and development of industries in the area, the improvement has been restricted. However, the area affected by salinity which was increasing at the average rate of 0.5 kms *per* year has been checked in Saurashtra and Kachchh due to the salinity control and recharge works undertaken.

The reply of the Department that the rate of increase in salinity ingress at 0.5 kms *per* year has been checked is not convincing because though the overall figures of the reaches show a reduction in area under salinity ingress, out of 23 talukas the improvement has been only in 13 talukas. Five talukas have shown increase in area under salinity ingress while the remaining five have shown no improvement. Further, the average extent of salinity ingress has substantially increased in all the talukas of Bhavnagar-Una reach.

### **3.2.7.2 Ground water quality and ground water balance**

The HLCs emphasised constant monitoring of the ground water conditions and water quality to assess the extent and degree of salinity in ground water. HLCs opined that repeated observations of the representative observation wells would indicate the improvement/ deterioration both in ground water levels and ground water quality. Though recommended by the HLCs, there was no Review and Monitoring Committee to monitor and review the progress in implementation of SIPS and its impact on ground water quality and ground water balance. There are 1,180 observation wells<sup>39</sup> identified in the four reaches which are monitored for ground water levels and quality of ground water. The water samples of these wells are analysed on different parameters such as Total Dissolved Salts (TDS), chloride to carbonate plus bi-carbonate ratio, pH, electrical conductivity *etc.* On the basis of information on analysis of the water samples in these observation wells<sup>40</sup> as available on record, the emerging position of ground water quality, ground water levels in terms of TDS and chloride to carbonate plus bi-carbonate ratio and ground water balance are discussed below:

#### **(a) Ground water quality**

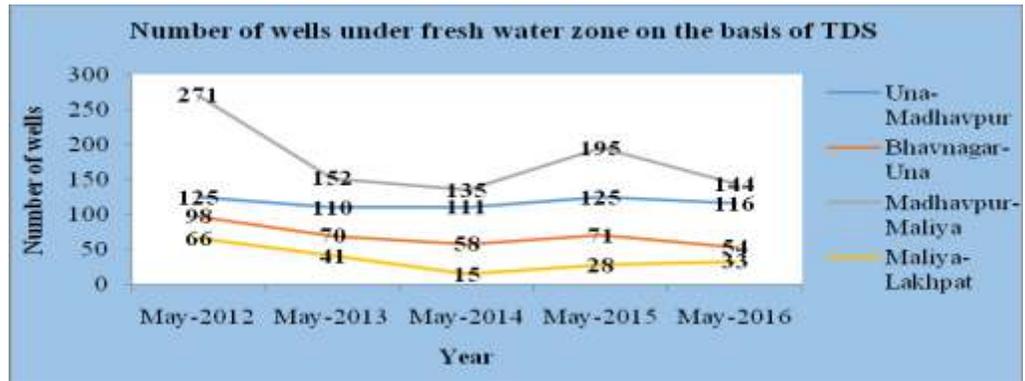
The ground water quality in the salinity affected area are chemically analysed mainly on the basis of Total Dissolved Solids (TDS) and the ratio of chloride to carbonate plus bi-carbonate content in water.

The TDS contour of 2,000 ppm (parts per million) demarcates the zone of saline water and water suitable for irrigation. Based on the data made available for TDS, the numbers of wells falling in different salinity zones are shown in **Appendix XI**. The trend analysis between May 2012 and May 2016 on the number of wells falling under fresh water zone is shown in the graph below:

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<sup>39</sup> 294 observation wells in HLC-I and 886 observation wells in HLC-II reach.

<sup>40</sup> The observations discussed in the subsequent paragraphs are based on the information in respect of different parameters studied in each observation well. However, as all the parameters of each well were not available on record, the total numbers of wells differ while analysing the different parameters.



Graph showing number of wells under fresh water zone on the basis of TDS

The above graph shows that as compared to May 2012, in all the four reaches the numbers of wells under fresh water category have reduced. Further, as compared to May 2015 also, the number of wells under this category reduced in three reaches except in Maliya-Lakhpat reach where the increase was marginal.

Another parameter to measure the ground water quality is chloride to carbonate plus bi-carbonate ratio which determines the degree of contamination of the ground water by sea water. Based on the data made available, the numbers of wells falling under different category of ratio are detailed in **Table 7** below:

Table 7: Details of chloride to carbonate plus bi-carbonate ratio in wells

Sl. No.	Water quality	Range of ratio values	No. of Wells									
			Una-Madhavpur		Bhavnagar-Una		Madhavpur-Maliya		Maliya-Lakhpat		Total	
			May 2012	October-2016	May-2012	May-2016	May-2012	May-2016	May-2012	May-2016	May-2012	October 2016/ May 2016
1	Non-contaminated (Fresh water)	< 1	31	45	39	13	57	41	20	24	147	123
2	Slightly contaminated	01-02	55	35	46	23	64	57	30	22	195	137
3	Moderately contaminated	02-06	52	67	47	46	126	139	54	36	279	288
4	Injuriously contaminated	06-15	39	42	16	29	61	123	26	7	142	201
5	Highly contaminated	15-25	23	21	8	5	15	22	3	4	49	52
6	Very highly contaminated to sea water	>25	55	51	1	6	4	8	0	1	60	66
<b>Total</b>			<b>255</b>	<b>261</b>	<b>157</b>	<b>122</b>	<b>327</b>	<b>390</b>	<b>133</b>	<b>94</b>	<b>872</b>	<b>867</b>

(Source: Information furnished by the Department)

Further, from **Table 7** it is noticed that in May 2012, out of 872 wells only 147 wells (16.86 per cent) fell under fresh water category which in May 2016/ October 2016 reduced to 123 wells out of 867 wells (14.19 per cent). The number of wells falling within moderately contaminated to very highly contaminated to sea water also increased during this period.

The above trend analysis shows that there was deterioration in ground water quality in these reaches as the number of fresh water wells reduced.

Ground water quality has improved in Una-Madhavpur where the progress of works against HLC recommendation has been good. However, in Madhavpur-Maliya where the progress of works against HLC recommendation has been slow, there has been deterioration in ground water quality.

The Department stated (October 2017) that TDS is influenced by the rate of precipitation of rain water and withdrawal of ground water in the area. When the area receives less rainfall, the recharge rate of fresh water decreases which effects the number of wells showing higher TDS values. The chloride to carbonate plus bi-carbonate ratio shows the ingress of saline sea water and contamination of ground water by sea water intrusion. When the prolonged storage of fresh water in the structure will be achieved the resultant fresh ground water quantity will increase and the contamination of the ground water will be reduced. Due to Deccan trap forming the coast line, phenomenon of sea water ingress directly into aquifer is observed in Khambaliya, Lalpur and Jamnagar taluka.

**(b) Ground water levels**

As mentioned in **Paragraph 3.2.6.3**, the HLCs recommended enforcement of ground water legislation to impose control on the excessive use of ground water. The water level in the wells, if below the sea level, may cause a reverse hydraulic gradient towards the land. Under these circumstances the sea water could travel into the land and convert the sweet water of the wells into saline water.

It was observed on the basis of available data that in May 2012, in 291 out of 989 wells (29.42 *per cent*) the ground water level was below the sea level. In May 2016/ October 2016, in 200 out of 782 wells (25.57 *per cent*) the ground water level was below the sea level. Thus there was marginal improvement in ground water levels in these well during the period. However, due to significant number of wells with water level below the sea level there remains the possibility of sea water intrusion on account of reverse hydraulic gradient. Thus, there is an imperative need for enforcement of ground water legislation to prevent the creation of reverse hydraulic gradient towards the land thereby avoiding the sweet water wells turning saline.

The Department stated (October 2017) that sea water intrusion is governed by the ground water table and also by the subsurface geological conditions of the area. In Mandvi taluka of Kachchh, in the well which recorded 97.02 m water level below sea level, the TDS value of water was 2,960 ppm indicating that reverse hydraulic gradient of sea water had not developed in the area.

The Department has also accepted the fact that ground water table effects sea water intrusion. Audit is of the view that non-salinity of one well does not prove the fact that reverse hydraulic gradient of sea water has not affected the area. It would depend on the location of the well, topography of the area and location of other observation wells.

**(c) Ground water balance**

The ground water balance in respect of Una-Madhavpur reach was compiled in Audit based on information furnished by divisions and information available in evaluation reports as shown in **Table 8** below:

**Table 8: Details of ground water balance in talukas of Una-Madhavpur reach**

Name of taluka	No. of pump wells			Effective recharge by rainfall and structures <sup>41</sup> (in MCM <sup>42</sup> )			Effective draft <sup>43</sup> (in MCM)			Ground water balance <i>i.e.</i> , net withdrawal (Effective recharge - effective draft) (in MCM)		
	2012-13	2013-14	2014-15	2012-13	2013-14	2014-15	2012-13	2013-14	2014-15	2012-13	2013-14	2014-15
Mangrol	5070	5146	5775	12.19	16.68	19.89	28.39	28.82	32.34	-16.20	-12.14	-12.45
Maliya (H)	1976	2006	2202	6.58	14.33	12.47	11.07	11.23	12.33	-4.49	3.10	0.14
Veraval	6679	6779	7993	9.34	32.12	27.29	51.43	52.20	61.55	-42.09	-20.08	-34.26
Kodinar	3163	3210	2010	5.81	18.90	22.01	26.57	26.97	16.88	-20.76	-8.07	5.13
Una	3366	3416	1535	7.81	26.50	21.27	21.20	21.52	9.67	-13.39	4.98	11.60
<b>Total</b>	<b>20254</b>	<b>20557</b>	<b>19515</b>	<b>41.73</b>	<b>108.53</b>	<b>102.93</b>	<b>138.66</b>	<b>140.74</b>	<b>132.77</b>	<b>-96.93</b>	<b>-32.21</b>	<b>-29.84</b>

(Source: Information furnished by the Department)

It can be seen from **Table 8** that in Mangrol, Maliya (H) and Veraval talukas there was increase in number of pump wells from 2012-13 and consequently the effective draft of ground water also increased leading to negative/negligible ground water balance in the area. In Una and Kodinar talukas the pump wells decreased and consequently the effective draft also reduced leading to positive ground water balance. This indicates that ground water legislation is very much essential which has not been enacted (March 2017).

The Department (October 2017) stated that the regulation and control of the ground water is being done by Central Ground Water Authority (CGWA). The Gujarat Ground Water Authority (GGWA) is acting as a recommendatory body and permissions are granted by CGWA. A draft bill is prepared by CGWA and forwarded to all State Government for necessary comment. The Gujarat Water Resource Development Corporation has passed on its comment in July 2016. The draft bill is under process of finalization and after necessary approval from Competent Authority it will be enacted.

The reply is not convincing as the Ministry of Water Resources, GoI had earlier circulated a model bill in 2005 to enable the States to enact ground water legislation which has not been implemented by Gujarat (March 2017).

### 3.2.8 Conclusion and Recommendations

**The HLC reports accepted during the period 1978 to 1992 have not been implemented fully even after a lapse of 25 to 39 years despite the recommendation to implement the same between seven to 10 years. There was no holistic planning in terms of the time frame required to complete**

<sup>41</sup> The figure shows the recharge by structures created under SIPS only and not the recharge by other structures constructed by Panchayat and other agencies.

<sup>42</sup> Million cubic metre.

<sup>43</sup> Withdrawal of ground water- It is considered @ 70 per cent of the draft which is the amount of water lifted from the aquifer by means of various lifting devices.

the scheme as a whole, fund requirements for the entire scheme implementation based on detailed investigation and requirement of land for completion of the scheme. The individual recommendations of HLCs were planned and implemented on piece-meal basis by the individual implementing divisions. The implementation has been above 50 per cent only in respect of check dams, tidal regulators/ *bandharas* and recharge wells. In respect of afforestation, coastal land reclamation, TCD farms and gully and *nalla* plugging the implementation has been negligible. Out of the four reaches where the works were implemented, the progress was significant in Una-Madhavpur and Maliya-Lakhpat and negligible in Bhavnagar-Una and Madhavpur-Maliya reaches. The cost of SIPS has already increased from ₹ 789.12 crore to ₹ 3,590.44 crore (March 2017). Even in the activities that have been implemented, all the envisaged chainages have not been covered mainly due to non-acquisition of land leading to cases of incomplete works, unfruitful expenditure and idling of facility. As a result, there has not been a marked improvement in areas affected by salinity ingress.

The Government may;

- *get the remaining works completed in a time bound manner to prevent salinity ingress.*
- *constitute a High Level Review and Monitoring Committee to monitor and periodically review the progress in implementation of SIPS.*
- *enact ground water legislation in order to control unregulated drawl of ground water.*

### **3.3 Avoidable expenditure on delayed payment of electricity bills**

**Delayed payment of electricity bills in respect of pumping stations resulted in avoidable expenditure of ₹ 2.35 crore during the year 2013-14 to 2016-17.**

Executive Engineer (EE), Drainage Division, Gandhinagar (the division), a division of Water Resources Department, Government of Gujarat, obtained 11 electricity connections between May 2004 and March 2015 from Uttar Gujarat Vij Company Limited (UGVCL) for operating 11 pumping stations of the Narmada Main Canal (NMC) based pipe line projects.

The tariff schedule of UGVCL stipulated that delayed payment charges would not be levied if the electricity bill was paid within 10 days from date of billing, but was leviable beyond 10 days at the rates provided by the Electricity Duty Act.

During scrutiny of electricity bills of the above connections for the period 2013-14 to 2016-17, it was observed (October 2016 and July 2017) that there were delays in payment of electricity bills resulting in levy of delayed payment charges. The division paid delayed payment charges of ₹ 0.09 crore

for three pumping stations during 2013-14, ₹ 0.34 crore for six pumping stations during 2014-15, ₹ 0.41 crore for 11 pumping stations during 2015-16 and ₹ 1.51 crore for 11 pumping stations during 2016-17 to UGVCL. Thus, the division paid ₹ 2.35 crore in the form of delayed payment charges to UGVCL during the last four years *i.e.*, 2013-14 to 2016-17.

Though grants demanded for the purpose (₹ 309.84 crore) were much higher than the grants received (₹ 203.11 crore) for the period 2013-14 to 2016-17, the actual electricity expenditure was more or less in tune with the grants received except for the year 2013-14 as given in **Table 9** below:

**Table 9: Grants received and actual electricity expenditure**

(₹ in crore)

Year	Grants received	Actual electricity expenditure
2013-14	22.48	34.45
2014-15	58.99	62.23
2015-16	33.30	34.95
2016-17	88.34	84.24
<b>Total</b>	<b>203.11</b>	<b>215.87</b>

Though during 2013-14 the actual electricity expenditure was much higher than the grants received, the delayed payment charges paid was only ₹ 0.09 crore. However, it increased in subsequent years from ₹ 0.41 crore to ₹ 1.51 crore. There were also delays ranging from one month to four months in the release of grants by the department which could have been avoided through regular follow-up by the divisions.

The substantial increase in delayed payment charges during 2016-17 show that efforts need to be made by the divisions to ensure timely release of grants and timely payment of electricity bills.

The Superintending Engineer (SE), Sujlam Suflam Circle-1, Gandhinagar stated (May 2017) that the electricity bills of different pumping stations are delivered to the concerned divisions in about 10 to 15 days period after reading of consumption by UGVCL. After receipt of bills, scrutiny and payment procedure took about one week's period at the division level. It was further stated that delay also occurred due to delay in allotment of grant.

Reply is not convincing as the reasons quoted in the reply for delayed payments could be avoided with proper coordination for timely receipt of bills and expeditious completion of procedure for payment. Timely and sufficient release of grants for payment of dues like electricity bills can be controlled and coordinated at the department level so as to avoid payment of such charges.

Thus payment of electricity bills after due date attracted delayed payment charges as per provision of tariff schedule. This resulted in avoidable expenditure of ₹ 2.35 crore during the year 2013-14 to 2016-17.

The matter was reported to the Government in April 2017. Reminders were also issued in June 2017, August 2017 and October 2017. However, reply is awaited (December 2017).

### 3.4 Avoidable expenditure on obtaining power connections

**Obtaining power connections for two pumping stations prior to completion of the pipeline works resulted in avoidable expenditure of ₹ 1.54 crore on account of payment of electricity charges.**

Government of Gujarat (GoG) accorded (April 2004) Administrative Approval for the execution of 14 Narmada Main Canal (NMC) based lift irrigation pipeline works. The project envisaged lifting of flood water in Narmada river from NMC and supplying it to various village ponds through pipeline and pumping stations. Under this project, GoG decided (October 2011) to take up Patan-Dindrol pipeline<sup>44</sup> works for supply of water to village ponds. For this, two pumping stations were to be constructed at Patan and Kalyana.

The Executive Engineer (EE), Drainage Division, Gandhinagar issued (September 2012) the work order to the contractor at tendered cost of ₹ 101.41 crore with stipulated completion in 18 months (by March 2014).

Audit observed (October 2016) that the pipeline was to be laid down in two sections *i.e.*, Patan-Kalyana and Kalyana-Dindrol. But the farmers/ land owners of Patan (under whose land pipeline were to be laid) requested (January 2013) the GoG either to pay higher price for their land or to change the pipeline route. On the basis of the request, GoG decided to change the route for Patan-Kalyana Section and approved (March 2013) the new route from Matpur to Kalyana. It also changed the location of Patan Pumping Station to Matpur. Owing to the change, the overall length of the pipeline increased by 1,691 meter<sup>45</sup> which was approved by the GoG in July 2013.

The contractor, owing to increase in scope of work, demanded extension for first time upto December 2014 in February 2014. Subsequent extensions were sought time and again. The pumping stations were finally tested in November 2015. The contractor completed all aspects of the work in October 2016.

In the meanwhile, the EE applied for High Tension (HT) connection of 2,500 Kilo Volt Ampere (KVA) and 2,300 KVA for Kalyana and Matpur pumping station in July 2013 and May 2014 respectively. While applying for the connection the EE stated the likely date of commencement of supply as 15 January 2014 for Kalyana pumping station and 15 November 2014 for Matpur pumping station.

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<sup>44</sup> Khorsam to Mukteshwar was one of the 14 NMC based lift irrigation pipeline. The first phase from Khorsam to Patan had been executed and this work was the further extension of this pipeline.

<sup>45</sup> Initial overall length of the pipeline project was 30 km.

Audit observed that at Matpur pumping station, the order for release of power was issued by Uttar Gujarat Vij Company Limited (UGVCL) in January 2015 and billing started from March 2015. There was no consumption of electricity from March 2015 to October 2015. During this period, the division paid electricity charges of ₹ 0.41 crore to UGVCL on account of the contracted demand. Similarly, at Kalyana pumping station, the order for release of power was issued by UGVCL in February 2014 and billing commenced from April 2014. There was no consumption of electricity from April 2014 to October 2015. During this period, the division paid electricity charges of ₹ 1.13 crore to UGVCL on account of contracted demand.

Audit noticed that at the time of applying (July 2013/ May 2014) for the connections, the division was aware of the fact that GoG had approved the new route in March 2013 and there would be delays in completion of the work due to change of pipeline route. The contractor had been applying for extensions in time since the scope of work was increased. Under the circumstances there was no justification for getting the power connections for the pumping stations so much in advance of the work completion. Audit also noticed that as per the terms of the agreement with UGVCL, applying for the connection and signing of the agreement can be done in advance but the release order could have been obtained closer to the date of testing by applying for extension in time for release of power.

Therefore, a more systematic assessment by the division of the additional time required for the completion of the work and timely application to UGVCL for extension could have avoided payment of idle demand charges for a period of eight and 19 months for Matpur and Kalyana pumping stations respectively. This resulted in avoidable payment of ₹ 1.54 crore in the form of electricity charges.

The Government stated (September 2017) that the HT connections were obtained keeping in view the probable date of completion of works in all respect to avoid the delay in testing and commissioning of pumping stations. It was further stated that the work of pumping station at Matpur was delayed due to change in alignment of pipeline and accordingly change in location of pumping station due to opposition of farmers.

Reply of the Government is not convincing as the division was aware of the ground position at the time of applying for the connections and could have assessed the time required for work completion in view of known delays. With such assessment, the division could have applied for the extension to UGVCL in advance in terms of the conditions of the agreement.

Thus obtaining power connections for pumping stations prior to completion of the pipeline resulted in avoidable payment of electricity charges of ₹ 1.54 crore.

## ROADS AND BUILDINGS DEPARTMENT

### 3.5 Unfruitful expenditure on construction of Railway Under Bridge

**Delay in completion of work for approaches for the railway under bridge (RUB) on the missing link of Visavadar Dhari road has resulted in the RUB remaining unutilised after incurring an expenditure of ₹ 4.11 crore.**

The Government of Gujarat (GoG) accorded (September 2007) Administrative Approval (AA) for construction of railway under bridge (RUB) on the missing link near Visavadar on the Visavadar Dhari road. The construction of RUB was to be done by the Railway Authorities as a deposit work whereas the work of the approaches was under the jurisdiction of the Executive Engineer (EE) of the Junagadh division of Roads and Buildings Department (R&BD). The estimates of ₹ three crore was approved by GoG in October 2011. The Railway completed (July 2014) the construction of RUB at a cost of ₹ 2.64 crore.

The Superintending Engineer (SE) Rajkot Circle of R&BD instructed (July 2014) the EE Junagadh division to prepare plans and estimates for the construction of the approaches as the work of RUB was nearing completion. Similar instructions were again issued in August 2014 and January 2015 as the RUB could not be utilised till the approaches were completed. The EE submitted (March 2015) the plans and estimates of ₹ 6.94 crore.

The EE also submitted (March 2015) the design proposals to the SE, Design Circle R&BD for providing opinion on the structural designs. The R&BD approved (August 2015) Draft Tender Papers (DTP) for the approach work for ₹ 8.13 crore. The tender for the work of approaches was awarded (December 2015) for ₹ 5.31 crore. The EE issued (January 2016) work order with stipulated completion by June 2016.

Subsequent to the issue of work order by EE in January 2016, the SE, Design Circle furnished the designs between March 2016 and June 2016 for the Dhari side approach only. The work was in progress as of December 2017 and an expenditure of ₹ 1.47 crore had been incurred. The contractor also intimated (June 2016) the EE that due to non-availability of the structural design of the Visavadar side, the work could not be completed and requested extension of time-limit upto December 2016. The Visavadar side drawings had still not been given to the contractor as the designs had not been finalised due to encroachments on the site (December 2017).

Thus the work of approaches for which actual construction period was just five months was pending even after 45 months from the completion of the RUB as on December 2017. This led to non-utilisation of RUB constructed in July 2014 at a cost of ₹ 4.11 crore<sup>46</sup>.

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<sup>46</sup> ₹ 2.64 crore (cost of RUB) plus ₹ 1.47 crore (expenditure incurred till July 2016 on approach work).

The Government stated (December 2017) that drawings and design for the Dhari side approach was submitted to R&B Design Circle for their opinion. During scrutiny, additional details were required to be collected for finalisation of design and this process took time. It was further stated that finalisation of Visavadar side drawings and design was still pending due to encroachment of about 400 meter length of alignment of approach road by Commercial buildings. The owners/ occupants of these commercial buildings were issued notices for vacating the place but there was no response. Considering the type of encroachment, an alternative for change of alignment is being studied which will require further time.

The reply is not convincing as the work is held up (December 2017) due to non-finalisation of structural designs of the Visavadar side because of encroachments. The structural design finalisation for Dhari side within the R&BD had taken a period of more than two years since 2015, which was avoidable. The study for alternative alignment will lead to further delays and non-utilisation of RUB for more time. Also, the matter of encroachments and the need to get these cleared was known even before the work was sanctioned and could have been addressed accordingly.

Thus, the delay in completion of approaches for the RUB has resulted in the RUB remaining unutilised after incurring an expenditure of ₹ 4.11 crore.

### 3.6 Excess payment of price variation of asphalt

**Non adoption of star rate prevailing at the time of approval of Draft Tender Papers for payment of price variation for asphalt resulted in excess payment of price variation of ₹ 3.39 crore in two works.**

As per Clause 59-A of the form B-2 of the model tender documents, for execution of works in the Roads and Buildings Department (R&BD), payment of price variation for asphalt used in the works, which was purchased by the contractor was to be adjusted for increase/ decrease in rates as compared to the star rate<sup>47</sup> prevailing on the date of approval of Draft Tender Papers (DTP).

In respect of two works awarded by R&BD, Bhuj, (Division) we observed (July 2016) that the star rates quoted in the tender and adopted for payment were not the applicable rates for the month in which the DTP was approved. The important details in relation to the above two works are given in **Table 10** below:

<sup>47</sup> Star rate is the rate of asphalt of the month in which draft tender papers are approved and is specified in the tender and used as a base rate for calculation of adjustment of price variation.

**Table 10: Details of two works**

Particulars	Widening of Bhuj Anjar road nine to 40 kms (M/s. MKC Infra Limited)	Widening and strengthening of pavement of Bachau-Ramvav-Rapar road (M/s. K. Sorthia)
Cost of work	₹ 43.17 crore	₹ 33.13 crore
DTP approval	May 2012	July 2012
Date of award	January 2013	December 2012
Scheduled month of completion	July 2014	March 2014
Actual month of completion	March 2015	September 2014
Star rate of asphalt in tender	VG 30 (60/70 grade) ₹ 37,243 per Metric Tonne (MT)	VG 30 (60/70 grade) ₹ 40,739.81 per MT
	VG 10 (80/100 grade) ₹ 36,282 per MT	
Price variation paid on asphalt	₹ 7.37 crore	₹ 4.58 crore

(Source of information: Documents obtained from the Division)

We observed (July 2016) that in the first work the rate of asphalt for VG 30 (60/70 grade) and VG 10 (80/100 grade) was ₹ 42,013 per MT and ₹ 41,052 per MT respectively during the month of May 2012 when the DTP was approved. However, the EE erroneously adopted the star rate prevailing in August 2011 (as shown in **Table 10**) while awarding the tender. The contractor consumed 1,824.886 MT and 3,487.558 MT of VG 30 (60/70 grade) and VG 10 (80/100 grade) respectively. Thus, the division paid an excess amount of ₹ 2.53 crore<sup>48</sup> as price variation on asphalt

In the second work, the Chief Engineer & Additional Secretary, R&BD, while approving the DTP mentioned (July 2012) the star rate of asphalt for VG 10 (80/100 grade)<sup>49</sup>. However, the asphalt for VG 30 (60/70 grade) was used by the division whose star rate was ₹ 42,818.25 per MT during the month of July 2012. Thus, the star rate lower than the prevailing rate was adopted. The contractor consumed 4,120.515 MT asphalt of VG 30 (60/70 grade). Thus, the division paid excess price variation of ₹ 0.86 crore<sup>50</sup> to the contractor.

Therefore, adoption of an incorrect star rate while approving the DTP resulted in payment of excess price variation in asphalt of ₹ 3.39 crore.

The Government stated (September 2017) that fixation of star rate in DTP for payment of price variation was taken as per sanctioned estimate instead of on the date of approval of DTP and as such the tenders were received below the estimated cost. It was further stated that if the asphalt rate were taken higher in the DTP then the tenders would have been received on higher side.

The contention of the Government is not convincing as tender documents explicitly state that the star rate of asphalt should be as on the date of approval of DTP by Government. If the rate as adopted in the estimate had to be adopted the same would have been indicated in the tender itself. Tender rates

<sup>48</sup> 1,824.886 MT x ₹ 4,770 per MT plus 3,487.558 MT x ₹ 4,770 per MT.

<sup>49</sup> ₹ 40,739.81 per MT.

<sup>50</sup> 4,120.515 MT x ₹ 2,078.44 per MT.

being received below estimated cost is dependent on a variety of factors and cannot be fully attributed to or used to justify adoption of wrong star rates for asphalt in the tender.

Thus not adopting the star rate for asphalt as prevailing on the date of DTP approval as required by the model tender documents resulted in excess payment of price variation of ₹ 3.39 crore.

### 3.7 Avoidable expenditure on construction of Jilla Seva Sadan

**Preparation of estimates without obtaining possession of land, structural design and analysing the SBC test report led to revision of estimates increasing the cost by way of extra expenditure of ₹ 2.36 crore.**

Gujarat Public Works Manual (Manual) stipulates that works shall be commenced only after detailed designs of the structures are approved. Moreover, it also *inter-alia* provides that no work should be commenced on land which has not been duly made over by the responsible civil officer.

The Roads and Buildings Department (R&BD) accorded (December 2013) Administrative Approval (AA) and Technical Sanction (TS) for ₹ 20 crore and ₹ 20.94 crore respectively for the work of construction of Jilla Seva Sadan in newly created Aravalli District at Modasa. Though the land required for construction of the building was not in possession of the R&BD, Himmatnagar (the Division), the Executive Engineer (EE) prepared (December 2013) the estimates for the construction of the building on the basis of typical design<sup>51</sup> for ₹ 20.35 crore to accommodate Collectorate and its related offices. The estimates were prepared for a building consisting of built-up area of 9,510 square meter (Sq m) with ground plus two Floors. The R&BD accepted (January 2014) the lowest tender at a cost of ₹ 15.95 crore. The EE issued (February 2014) work order with stipulated completion by November 2014.

Meanwhile, the Collector, Modasa allotted (January 2014) 12.19 hectare (ha) (1,21,900 sqm) land at Modasa to the EE for building of Jilla Seva Sadan and other offices. After taking possession of land, the EE conducted (February 2014) Soil Bearing Capacity (SBC) test and Geo-technical investigation of soil. The EE submitted proposal (March 2014) to the Superintending Engineer (SE), Design Circle for preparation of structural designs based on the SBC test and additional requirements intimated by the Collector. In view of the structural designs prepared by SE, Design Circle, the revised proposal for ₹ 36.75 crore was proposed (April 2015) to R&BD. The reasons stated for the same were increase in built up area from 9,510 sqm to 12,500 sqm and changes in structural design necessitated for ground plus four floors against ground plus two floors originally planned and tendered.

The Government approved (May 2015 and May 2016) the revised proposal. The Government also approved (May 2016) the extension of time limit upto

<sup>51</sup> Designs prepared for buildings to be constructed in newly created districts.

December 2015. Meanwhile, the contractor completed (December 2015) the work at a cost of ₹ 29.63 crore.

As per tender condition, for the quantities executed in excess of 130 *per cent* of the tendered quantities of work, payment shall be made as per the rates mentioned in the Schedule of Rates (SoR) of the year during which the excess quantities were first executed, irrespective of the tendered rates. For quantities executed upto 130 *per cent* the tendered rates would be applicable.

Audit observed (May 2016) that based on the final execution of the work, excess quantities were involved in 97 out of total 157 items of works. In 81 out of 97 items the quantity execution was beyond 130 *per cent* of the tendered quantity. As the SoR 2013-14 was also applicable in 2014-15, in 66 out of the 81 items the SoR rates was higher while in the remaining 15 items the SoR rates was lesser against its tendered rates. This led to net extra expenditure of ₹ 2.36 crore<sup>52</sup> on the excess items of work executed by the contractor, paid on the basis of SoR.

We also observed that there was no justification on record for the action of R&BD to prepare estimates based on typical designs, invite tender and award the work even before the land was available. The built-up area increased and the structural designs had to be revised as the scope of construction of building was increased from two floors to four floors. Audit is of the view that the subsequent revision of plans and enhancement/ increase in work order quantities could have been avoided if the EE had waited for allotment of land. This not only violated provisions of the Manual but also resulted in additional expenditure.

The Government stated (September 2017) that during execution it was decided to provide revised structural design with probable future expansion considering provision of additional two floors. It was also stated that the built up area of the building was increased to 12,500 sqm as per the revised drawings. Further, increase in the length of compound wall due to larger land area also contributed to the excess/ extra items. The contractor was paid for the extra/ excess items as per the provisions of the tender.

The reply is not convincing because if R&BD had prepared the estimates and invited the tender after allotment of land duly considering the SBC test report and finalisation of structural design, it could have got the opportunity of awarding of work at more competitive price as the prevalent tender was 18.18 *per cent* below the SoR and even subsequent tenders received for similar works during March 2014 to March 2016 were 13.83 to 34.66 *per cent* below the SoR. It could have also avoided incurring of any extra expenditure by way of awarding excess/ extra items of work as per the tender conditions of the tenders invited on SoR rates instead of bid rates in December 2013.

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<sup>52</sup> On the 66 items there was avoidable payment of ₹ 2.40 crore. On the other hand, on 15 items there was savings of ₹ 0.04 crore.

Thus preparation of estimates and inviting tenders without possession of land and finalisation of structural designs led to extra expenditure of ₹ 2.36 crore by way of excess/extra items.

### 3.8 Improper estimates leading to non-recovery of testing charges

**Non-inclusion of certain items of work in the scope of original estimated cost resulted in expenditure on excess and extra works ranging from 16 to 181 per cent of the tendered cost. It also resulted in non-recovery of testing charges of ₹ 1.51 crore.**

The Gujarat Public Works Manual *inter-alia* stipulates that care should be taken while finalizing the detailed drawings and estimates of works so as to avoid frequent changes in the works after award of contract on account of extra/excess items. Further, as per the Model Tender Agreement, one *per cent* of the estimated cost of the contract shall be deducted from the Running Account (RA) bill of the contractor for testing the quality of materials and workmanship. No additional testing charges shall be recovered from the contractor. Consequently, in respect of excess/ extra<sup>53</sup> items not forming part of the estimated cost, the testing charges cannot be recovered from the contractor.

Audit test-checked eight works as discussed in the **Appendix XII** awarded (between April 2012 to June 2014) by the Executive Engineer (EE), District Roads and Buildings Division (the Division), Ahmedabad. These works were scheduled to be completed between May 2013 and March 2016. Of these eight works, seven works were completed between May 2013 and May 2014 and one work was in progress as of September 2017. The Division incurred an expenditure of ₹ 259.94 crore on these eight works upto September 2017. During the execution of these works, the Government approved (between October 2012 and October 2016) excess items of ₹ 109.59 crore in eight works and extra items of ₹ 1.49 crore in four works.

Case-wise Audit analysis of the inconsistencies in the justification for the excess/ extra works and factors which indicate that these could have been included in the original estimate are given in the **Appendix XII**. A summary of these Audit findings is given below:

- Required strengthening of parts of existing road was not proposed while widening the said road though it was required to avoid undulation in the full road stretch. The same was proposed as an excess/ extra item (Sl. No. 1 of **Appendix XII**).
- Gujarat Engineering Research Institute (GERI) specifications were not fully considered in original estimate. These were later proposed as an excess/ extra item to meet out the requirements. (Sl. No. 2 and 5 of **Appendix XII**).
- Damages in existing roads, which were in existence at the time of preparation of the original estimate, were not considered while proposing

<sup>53</sup> Excess items are items, which increase beyond tender quantity given in tender document; Extra items are items, which are completely new and in addition to the items in contract.

the works for widening of the said road. These were later proposed as an excess/ extra item (Sl. No. 3 and 4 of **Appendix XII**).

- Works for filling joints between existing road surface and widened surface to prevent water seepage to the sub-base of the existing road, were taken up later as an excess item. However, this is a necessity in any road widening work to prevent undulation and should have been considered as part the original work. (Sl. No. 6 and 8 of **Appendix XII**).
- Works not included in the original Administrative Approval were taken up as an excess/ extra item in the Bagodara-Dhandhuka-Barvala road by obtaining separate approval though they were additional works requiring separate tender procedure. The costs of the excess/ extra works were 181 *per cent* of the original tendered cost. (Sl. No.7 of **Appendix XII**).

Audit observed (January 2016) that the excess/ extra items were given for execution to the same contractors at their quoted tender rates. The cost of these excess/ extra works ranged from 16 to 181 *per cent* of the original tendered cost. Audit is of the view that lack of funds cannot justify undertaking works with lower than required specifications and later on including the same as excess/ extra works in the original works awarded. It implies that either the works of sub-optimal specifications have been executed which could result in requirement of earlier maintenance or the work was intentionally not included in the original tender to give undue benefit to the contractor(s).

Audit further observed that testing charges which are recovered at the rate of one *per cent* of the estimated cost of the contract could not be recovered for the excess/ extra works since estimates for these works were not included in the original estimates. Audit calculated the costs for the excess/ extra items<sup>54</sup> not considered in the original estimates at ₹ 151.07 crore implying non-recovery of testing charges of ₹ 1.51 crore from the contractor. The actual, testing charges in respect of the excess/ extra works would therefore, have to be borne by the Department.

The Government stated (September 2017) that the estimates are prepared on the basis of site investigation, design to the extent possible or by adopting quantities as per defined rules and then bids are invited. It was further stated that in some cases during actual construction as per site condition and actual requirement, some extra work in terms of widening and strengthening is required. As per tender clause, these extra works were executed based on site condition and actual requirement.

The reply of the Government is not convincing as the additional work in respect of work at Sl. No. 7 of **Appendix XII** was not part of the approved AA and was not supported with survey and investigation report. Further, in respect of other six works (**Appendix XII**) items were not included in the original estimates due to lack of funds though they were technically required. Subsequently these were included as extra/ excess items for utilization of the

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<sup>54</sup> Estimated cost of excess items was calculated by multiplying the quantity of excess items by item wise rate mentioned in the tender document. Further, for calculation of estimated cost of extra items, the amount was first considered equal to the below percentage of tender and then by increasing it upto 100 *per cent*.

savings in the tender which is not justifiable. Audit is of the opinion that all required items of work as per technical specifications should be executed at one go and the decision whether or not to take up such items cannot be based on the tender rates quoted or availability of savings/ funds at a later stage as it can result in execution of work with sub-optimal specifications.

Thus non-inclusion of certain technically required items of work in the original estimate, resulted in expenditure on extra/excess items and non-recovery of testing charges of ₹ 1.51 crore due to non-inclusion of these items in the estimate.

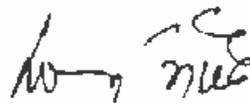


**(GURVEEN SIDHU)**  
**Accountant General**

**Ahmedabad**  
**The 13 March 2018**

**(Economic & Revenue Sector Audit) Gujarat**

**Countersigned**



**New Delhi**  
**The 15 March 2018**

**(RAJIV MEHRISHI)**  
**Comptroller and Auditor General of India**



# **APPENDICES**



## APPENDIX I

(Reference: Paragraph No. 1.7.1)

## Year-wise breakup of outstanding Inspection Reports as on 30 September 2017

Sl. No.	Department	Upto 2012-13		2013-14		2014-15		2015-16		2016-17		Total	
		No. of IRs	No. of Paras	No. of IRs	No. of Paras	No. of IRs	No. of Paras	No. of IRs	No. of Paras	No. of IRs	No. of Paras	No. of IRs	No. of Paras
1.	Agriculture & Co-operation	26	68	18	89	20	83	16	86	14	63	94	389
2.	Energy & Petrochemicals	1	1	1	2	1	6	2	10	1	7	6	26
3.	Finance	1	3	0	0	1	2	2	7	2	9	6	21
4.	Forests & Environment	4	5	14	47	12	40	6	24	11	55	47	171
5.	Industries & Mines	15	66	10	33	5	12	9	44	13	56	52	211
6.	Narmada, Water Resources, Water Supply & Kalpsar (except Water Supply)	47	126	31	76	45	107	19	68	10	49	152	426
7.	Ports & Transport	0	0	1	4	0	0	2	6	4	9	7	19
8.	Roads & Buildings	27	67	35	103	27	75	16	44	19	123	124	412
9.	Science & Technology	0	0	1	5	2	9	0	0	1	11	4	25
10.	Climate Change	0	0	0	0	0	0	1	9	1	4	2	13
<b>Total</b>		<b>121</b>	<b>330</b>	<b>111</b>	<b>359</b>	<b>113</b>	<b>334</b>	<b>73</b>	<b>298</b>	<b>76</b>	<b>386</b>	<b>494</b>	<b>1,713</b>

**APPENDIX II**

(Reference: Paragraph No. 2.5)

Details showing the Schemes/ Sub-Schemes Selected

(₹ in crore)

Sl. No.	Scheme/Sub-Schemes	Total Expenditure 2012-17
<b>Plan Schemes</b>		
1	<b>FSH-2 (Normal)</b>	
	(i) Aerator Assistance	0.05
	(ii) Boat and Net	0.77
	(iii) Farm renovation	6.1
	(iv) Fish seed rearing	6.83
	(v) Insulated box	0.33
	(vi) Storage of fish/prawn seed	1.43
2	<b>FSH-2(SCSP)</b>	
	(i) Boat and Net	0.15
	(ii) Fish seed rearing	0.55
	(iii) Fisherman Housing	0
	(iv) Storage of fish seed	0.47
	(v) Storage of prawn seed	2.68
3	<b>FSH-2(Tribal)</b>	
	(i) Boat and Net	0.53
	(ii) Farm renovation	5.65
	(iii) Fish seed rearing	3.08
	(iv) Fisherman Housing	2.39
	(v) Housing Facilities	0.29
	(vi) Road, Street Light <i>etc.</i>	0.11
	(vii) Spawn Production	3.98
	(viii) Spawn Rearing	2.02
	(ix) Storage of fish seed	2.92
	(x) Storage of prawn seed	10.46
4	<b>FSH-5</b>	
	(i) Aerator Assistance	1.31
	(ii) Infra Development Road	21.09
5	<b>FSH-7</b>	
	(i) 4 inch Gill net	4.36
	(ii) Assistance to women SHG	0.14
	(iii) Electrical Appliances	9.86
	(iv) GPS	4.93
	(v) Insulated box	5.01
	(vi) Life-saving equipments	34.87
	(vii) Mechanised Lorry to women SHG	0.15
6	<b>FSH-8</b>	
	(i) Machines	5.13
7	<b>FSH-9</b>	
	(i) Processing plant, cold storage <i>etc.</i>	6.1
8	<b>FSH-13(Normal)</b>	
	(i) Fisherman Housing	2.25
9	<b>FSH-13(TASP)</b>	
	(i) Fisherman Housing	0
	(ii) Road, Street Light <i>etc.</i>	0
	<b>Total</b>	<b>145.99</b>
<b>Non Plan Schemes</b>		
1	(i) Diesel VAT Subsidy	421.23
	<b>Grand Total</b>	<b>567.22</b>

**APPENDIX III**  
**(Reference: Paragraph No. 2.12.2)**  
**Details of Physical Target and Achievement in Inland Fisheries Schemes**

Sl. No.	Name of Scheme	Unit	2012-13		2013-14		2014-15		2015-16		2016-17		Total	
			Target	Achievement	Target	Achievement								
<b>1</b>	<b>Fish Seed Production and Development of Inland Fisheries (FSH-2) Normal</b>													
	Fish Seed Production	Beneficiary	625	466	600	549	600	647	600	690	600	595	3,025	2,947
	Farm renovation	No.	8	7	8	8	9	9	9	9	9	7	42	40
	Auditorium maintenance	No.	1	1	40,001	21,131	40,001	29,501	40,001	31,107	40,001	25,501	1,60,005	1,07,241
	Aquarium fish breeding	No.	40,000	27,850									40,000	27,850
	Storage of Fish seed	in lakh	504	526.28	408	902.13	408	360.06	472	703.85	439	456.92	2,231	2,949.24
	Storage of Prawn seed	in lakh	0	0	0	0	0	0	0	0	0	0	0	0
	Boat and Net	No.	80	245	47	289	60	189	93	293	93	319	373	1,335
	Fish sales assistance	Women	320	454	280	198	280	274	280	310	320	272	1,480	1,508
	Plastic crate	No.	2,000	1,924	2,330	1,330	2,330	1,605	3,000	855	2,440	275	12,100	5,989
	Boat for village lake	FRP (No.)	0	0	0	0	0	0	0	0	0	0	0	0
		Tin (No.)	0	0	0	0	0	0	0	0	0	0	0	0
	Grub hatchery for colourful fish	No.	20	6	22	9	22	0	13	12	14	5	91	32
	Rearing space development- Reservoir	Hectare	22	21	20	15	20	10	17	9	9	1	88	56
	Fish seed hatchery	No.	1	0	1	0	1	0	1	0	1	0	5	0
	Aerator Assistance	No.	20	7	12	6	12	8	12	1	12	5	68	27
	Patrolling cum fish collection boat	No.	2	3	2	1	2	44	4	6	4	5	14	59
	Assistance for purchase of insulated box	No.	106	63	106	61	133	115	133	56	107	52	585	347
	Fish Culture Cage	No.	0	0	0	0	36	36	67	20	120	62	254	118
	Foot fishermen assistance	No.	0	0	0	0	0	0	695	774	593	1,288	1,363	
<b>2</b>	<b>Fish Seed Production and Development of Inland Fisheries (FSH-2) S C S Plan</b>													
	Fish seed rearing	beneficiary	200	123	200	163	180	165	220	163	220	185	1,020	799
	Fish sales assistance	beneficiary	100	66	70	18	60	17	100	82	100	41	430	224
	Boat and Net	No.	20	9	20	11	10	29	20	8	20	59	90	116
	Training	Trainees	4,000	4,129	3,800	3,841	3,800	3,837	4,000	4,038	3,660	3,714	19,260	19,559
	Fishermen Housing	No. of houses	30	0	30	0	12	0	26	0	2	0	100	0
	Housing facilities	No.	0	0	1	0	1	0	2	0	1	0	5	0
	Storage of Fish seed	in lakh	55	38.25	51	163.08	54	26.78	60	32.93	49.5	187	269.5	448.04

Sl. No.	Name of Scheme	Unit	2012-13		2013-14		2014-15		2015-16		2016-17		Total	
			Target	Achievement	Target	Achievement								
	Storage of prawn seed	in lakh	25	42.73	30	8.68	40	6	64	159.28	60	49.63	219	266.32
	Patrolling cum fish collection boat and vehicle for transportation of fish	Boat (No.)	0	0	1	0	1	1	6	2	4	0	12	3
		Vehicle (No.)	1	0	0	0	0	0	0	0			1	0
	Road, street light and solar light in SC housing colony	No. of colony	1	0	0	0	0	0	0	0	0	0	1	0
<b>3</b>	<b>Fish Seed Production and Development of Inland Fisheries (FSH-2) Tribal</b>													
	Administration	No.	32	29	31	23	31	4	30	4	28	0	152	60
	Farm renovation	No.	9	9	9	11	9	13	9	10	9	6	45	49
	Spawn production	in crore	55	47.87	55	53	55	55	55	64.45	55	64.71	275	285.03
	Spawn rearing	Women	500	514	500	512	500	566	550	567	550	496	2,600	2,655
	Fish seed rearing	Beneficiary	600	726	600	761	600	751	550	693	550	796	2,900	3,727
	Reservoir patrolling	Trip	0	0	0	0	0	0	0	0	0	0	0	0
	Boat net	No.	100	160	60	152	60	125	61	190	66	126	347	753
	Storage of fish seed	in lakh	150	473.67	150	280	200	371	200	393.66	200	129.44	900	1,647.77
	Storage of prawn seed	in lakh	150	179.71	150	100	180	39	180	198.82	180	206.87	840	724.4
	Training	Trainees	600	610	600	606	600	614	600	598	600	627	3,000	3,055
	Kit for Tribal trainees	No.	600	575	600	607	600	574	500	568	600	592	2,900	2,916
	Villages lakes FRP/Tin boat	FRP (No.)	0	0	0	0	0	0	0	0	0	0	0	0
		Tin (No.)	0	0	0	0	0	0	0	0	0	0	0	0
	Rearing space development-Reservoir	Hectare	11	6	3	2	4	2	1	1	1	1	20	12
	Fishermen Housing	No.	140	142	130	120	100	155	110	53	100	8	580	478
	Housing facilities	No.	0	0	2	4	2	1	1	1	1	2	6	8
	Road, street light and solar light facilities	No. of colony	2	2	0	0	0	0	0	0	0	0	2	2
<b>4</b>	<b>Statistics on development of Inland Fisheries (FSH-3) Normal CSS</b>													
	Administration	No.	0	0	0	0	4	4	4	0	4	0	12	4
<b>5</b>	<b>Production of Fish seeds through Fish Farmer Development Agency (FSH-4) Normal</b>													
	Fish seed rearing	Hectare	2,100	192	2,100	0	2,100	85	901	0	300	0	7,501	277
	Lake upgradation	Hectare	2,100	100	2,100	0	2,100	0	105	0	105	0	6,510	100
	Administration		0	0	0	0	0	0	0	0	0	0	0	0
	Other Administration Exp		0	0	0	0	0	0	0	0	0	0	0	0
<b>6</b>	<b>Development of fisheries in brackish water (FSH-5) Normal</b>													
	Master mapping	Hectare	875	587	875	0	875	0	875	0	0	0	3,500	587

Sl. No.	Name of Scheme	Unit	2012-13		2013-14		2014-15		2015-16		2016-17		Total	
			Target	Achieve ment	Target	Achieve ment								
	Training	Trainees	500	633	500	507	500	600	500	611	800	670	2,800	3,021
	Shrimp farming-construction	Hectare	25	0	25	0	32	3	58	0	45	3	185	6
	Infra development-Road	Km	20	13	25	12	30	22	30	21	27	14	132	82
	Development of fishing in Alia Bet in Bharuch	Company	1	0	1	0	1	0	0	0	0	0	3	0
	Aerator assistance	No.	25	64	25	60	50	67	100	81	100	45	300	317
	Shrimp farming renovation	Hectare	75	87	75	80	100	124.32	175	151.35	155	37	580	479.67
	Sea weed culture-Assistance	No.	250	55	1,000	1,000	1,000	0	0	0	1,000	0	3,250	1055
	Polythene liner, bird/dog fencing	Hectare	0	0	100	0	100	22	200	93.68	100	67	500	182.68

\*Targets were not fixed for 3 Sub Schemes under FSH -2 (Normal), 3 Sub Schemes under FSH-2 (TASP) & 2 Sub Schemes under FSH-4.

APPENDIX IV

(Reference: Paragraph No. 2.15 and 2.15.2)

Details of Physical Target and Achievement in Marine Fisheries Schemes

Sl. No.	Name of Scheme	Unit	2012-13		2013-14		2014-15		2015-16		2016-17		Total	
			Target	Achievement	Target	Achievement								
1	<b>Development of fisheries ports (FSH-6) MH 5051 Normal</b>													
	Berthing and landing facility	Port	4	0	2	0	2	0	1	0	8	0	17	0
	Maintenance and renovation of fishing ports	Port	0	0	0	0	0	0	0	0	0	0	0	0
	New development works of fishing ports and prefabricated cabins	Ports/cabin	0	0	0	0	0	0	0	0	0	0	0	0
	Dredging at fishing ports	Ports	0	0	6	0	4	0	0	0	2	0	12	0
	Setting up of technical cell	Cell	0	0	0	0	0	0	0	0	0	0	0	0
2	<b>Development of fisheries ports (FSH-19) MH 5050 Normal</b>													
	Fishing ports maintenance * (2016-17)		0	0	0	0	0	0	0	0	0	0	0	0
	Fishing ports-Maintenance and upgradation	Ports	6	7	7	5	7	1	24	19	67	6	111	38
	Setting up of technical cell	Cell	1	3	0	0	0	0	0	0	1	0	2	3
	RIDF – development of Jakhau and other ports		10	10	0	0	0	0	0	0	0	0	10	10
	ASIDE project		2	1	0	0	0	0	0	0	0	0	2	1
	Water supply, electricity and high mast tower	Port	0	0	0	0	0	0	0	0	0	0	0	0
	Prefabricated cabin	Cabin	0	0	0	0	102	0	102	1	78	27	282	28
	Wapcos consultancy		0	0	5	0	5	0	3	3	1	0	14	3
	Water supply - RIDF		0	0	3	0	19	0	8	8	0	0	30	8
	Development of Jafrabad port – ASIDE		0	0	1	0	1	0	0	0	2	0	4	0
	Water supply- Jafrabad		0	0	0	0	1	0	0	0	2	0	3	0
	Electricity facility at fish landing center		0	0	0	0	0	0	0	0	36	27	36	27
	Floating jetty		0	0	0	0	0	0	0	0	1	0	1	0
	R O Plant* (2016-17)		0	0	0	0	0	0	0	0	4	0	4	0
	Drazing work* (2016-17)		0	0	0	0	0	0	0	0	2	0	2	0

Sl. No.	Name of Scheme	Unit	2012-13		2013-14		2014-15		2015-16		2016-17		Total	
			Target	Achieve ment	Target	Achieve ment								
<b>3</b>	<b>Providing pre-requisite facilities at various fishing centres (FSH-7) Normal</b>													
	Life saving equipments	No.	500	2,240	1,060	5,202	2,250	4,758	2,250	2,557	2,205	3,837	8,265	18,594
	LPG gas kit	No.	0	0	0	0	0	0	0	0	0	0	0	0
	Dress code	No.												
	Assistant Fisheries officer/ Assistant Statistician		49	18	49	0	49	0	49	0	0	0	196	18
	Foot fishermen assistance	Assistant	38	9	38	0	38	0	38	0	0	0	152	9
	Pakistan custody fishermen assistance	No.	694	1,392	1,138	1,241	2,083	1,292	2,083	1,956	2,080	1,608	8,078	7,489
	Electrical appliances	No.	300	422	300	327	462	305	462	523	462	462	1,986	2,039
	Movement of boats of fishermen	No.	1,366	1,472	1,723	552	1,621	985	1,621	1,420	905	2,778	7,236	7,207
	4 inch Grill net assistance	Security Guard	257	227	0	0	0	0	0	0	0	0	257	227
	Toilets in boats	No.	160	59	160	131	400	185	400	517	400	1,026	1,520	1,918
	Assistance to Women Self Help Group	No.	200	0	200	543	500	1,168	500	606	580	1,950	1,980	4,267
	Mechanised lorry to women self help group	Sales centre	20	3	0	0	0	0	270	60	0	0	290	63
	Fisheries guard	No.	0	0	257	226	257	212	257	224	257	265	1,028	927
	Women self help group	Consultancy fee	0	0	0	0	26	0	0	0	0	0	26	0
	Solar light	No.	0	0	500	348	500	3,079	500	4,186	500	697	2,000	8,310
	Insulated box	No.	0	0	0	0	1,000	752	1,000	1,016	2,330	4,293	4,330	6,061
	Flex/Slurry Ice	Boat	0	0	0	0	10	0	10	0	43	0	63	0
	Generator set, Flash light	No.	0	0	0	0	290	37	290	637	300	1,077	880	1,751
	GPS	Boat	0	0	0	0	0	0	2,000	508	2,000	1,685	4,000	2,193
	Insulated box to boat owners	FRP (No.)	0	0	0	0	0	0	2,000	971	2,025	5,648	4,025	6,619
	Computerisation		0	0	0	0	0	0	5	0	0	0	5	0
	Sea cage culture* (2016-17)		0	0	0	0	0	0	0	0	178	89	178	89
<b>4</b>	<b>Mechanisation of fishing boats (FSH-8) Normal CSS</b>													
	Machines - two stroke	No.	418	418	100	0	400	400	278	400	400	27	1,718	1,123
	Machines - four stroke	No.	141	0	333	21	333	55	66	333	333	90	1,473	232
<b>5</b>	<b>Development rebate on High Speed Diesel (FSH 103(12)) Normal CSS</b>													
			0	0	0	0	0	0	0	0	0	0	0	0

Sl. No.	Name of Scheme	Unit	2012-13		2013-14		2014-15		2015-16		2016-17		Total	
			Target	Achievement	Target	Achievement								
6	Central assistance for National Security (FSH 103(13)) Normal CSS		0	0	0	0	0	0	0	0	0	0	0	0
7	Assistance for Distress Alert Transmitter (FSH-20) Normal CSS	No.	1,000	500	1,000	0	1,000	0	1,619	0	3,000	0	7,619	500
8	Purchase sales Assistance scheme (FSH-9) Normal	No.	32	8	42	2	34	0	6	3	3	2	117	15
	Processing plant, cold storage, ice plant, value added machine	No.												
	Solar Dryer 10 Kilo capacity	No.	0	0	0	0	13	0	13	0	31	0	57	0
	Establishment of processing Plant* (2016-17)										1	0	1	0
	Solar Dryer 250 Kilo capacity	No.	0	0	0	0	2	0	2	0	3	0	7	0

\* Targets were not fixed for 3 subschemes under FSH -6, 2 subschemes under FSH-19, 2 subschemes under FSH-7 and for 2 schemes FSH 103 (12) & FSH 103 (13).

## APPENDIX V

(Reference: Paragraph No. 3.1.2)

## Details of Wildlife (WL) Sanctuaries and National Parks in Gujarat

Sl. No.	Sanctuary/ National Park	Year of Notification	Area (Sq Km)	Controlling Division office
1	<b>Gir National Park</b>	<b>1975</b>	258.71	DCF, WL Division, Sasan Gir and DCF, (Gir) West Division, Junagadh
2	Gir WL Sanctuary	1965	1,153.42	
3	Paniya WL Sanctuary	1989	39.64	DCF, Gir (East), Division, Dhari
4	Mitiyala WL Sanctuary	2004	18.22	
5	Barda WL Sanctuary	1979	192.31	DCF, Porbandar Division, Porbandar
6	Porbandar Bird Sanctuary	1988	0.09	
7	Velavadar Black Buck National Park	1976	34.53	ACF, BBNP, Bhavnagar
8	Girnar WL Sanctuary	2008	178.87	DCF, Junagadh Division, Junagadh
9	Rampara WL Sanctuary	1988	15.01	DCF, Rajkot Division, Rajkot
10	Kachchh Desert Sanctuary	1986	7506.22	DCF, Kachchh (East) Division, Bhuj
11	Kachchh Bustard Sanctuary	1992	2.03	DCF, Kachchh (West) Division, Bhuj
12	Narayan Sarovar Sanctuary	1995	444.23	
13	Wild Ass Sanctuary	1973	4,953.70	DCF, WAS, Dhrangadhra
14	Thol WL Sanctuary	1988	6.99	DCF, Nalsarovar Bird Sanctuary, Sanand
15	Nalsarovar Bird Sanctuary	1969	120.82	
16	Jessore Sloth Bear Sanctuary	1978	180.66	DCF, Banaskantha Division, Palanpur
17	Balaram Ambaji WL Sanctuary	1989	542.08	
18	Shoolpaneshwar WL Sanctuary	1982	607.70	DCF, Narmada Division, Rajpipala
19	Ratanmahal WL Sanctuary	1982	55.65	DCF, WL Division, Vadodara
20	Jambughoda WL Sanctuary	1990	130.38	
21	Purna WL Sanctuary	1990	160.84	DCF, Dangs (South), Ahwa
22	Vansda National Park	1979	23.99	DCF, Dangs (North), Ahwa
23	Marine National Park	1982	162.89	DCF, MNP Jamnagar
24	Khijadiya WL Sanctuary	1981	6.05	
25	Gaga WL Sanctuary	1988	3.33	
26	Marine Sactuary	1980	295.03	
27	Hingolghadh Nature Education Sanctuary	1980	6.54	Director, GEER Foundation, Gandhinagar
28	Chhari Dhandh Conservation Reserve	2008	227.00	DCF, Kachchh (West) Division, Bhuj

**APPENDIX VI**

**(Reference: Paragraph No. 3.1.6)**

**Details of Status of Eco-Sensitive Zone notification as on 31 July 2017**

<b>Sl. No.</b>	<b>Name of Sanctuaries and National Parks</b>	<b>Area (Sq Km)</b>	<b>ESZ Notification status</b>
1	Kachchh Desert Sanctuary	7,506.22	Proposal pending.
2	Wild Ass Sanctuary	4,953.70	Proposal pending.
3	Gir WL Sanctuary	1,153.42	Draft notification issued on 25.10.2016
4	Shoolpaneshwar WL Sanctuary	607.70	Final Notification issued on 05.05.2016
5	Balaram Ambaji WL Sanctuary	542.08	Proposal pending.
6	Narayan Sarovar Sanctuary	444.23	Final Notification issued on 31.05.2012
7	Marine Sanctuary	295.03	Final Notification issued on 22.08.2013
8	<b>Gir National Park</b>	258.71	Draft notification issued on 25.10.2016
9	Barda WL Sanctuary	192.31	Final Notification issued on 28.04.2017
10	Jessore Sloth Bear Sanctuary	180.66	Draft notification issued on 06.02.2017
11	Girnar WL Sanctuary	178.87	Final Notification issued on 31.05.2012
12	<b>Marine National Park</b>	162.89	Final Notification issued on 22.08.2013
13	Purna WL Sanctuary	160.84	Final Notification issued on 31.05.2012
14	Jambughoda WL Sanctuary	130.38	Proposal pending.
15	Nalsarovar Bird Sanctuary	120.82	Final Notification issued on 07.06.2017
16	Ratanmahal WL Sanctuary	55.65	Proposal pending.
17	Paniya WL Sanctuary	39.64	Draft notification issued on 25.10.2016
18	<b>Velavadar Black Buck National Park</b>	34.53	Final Notification issued on 06.07.2017
19	<b>Vansda National Park</b>	23.99	Final Notification issued on 31.05.2012
20	Mitiyala WL Sanctuary	18.22	Draft notification issued on 25.10.2016
21	Rampara WL Sanctuary	15.01	Draft notification issued on 10.01.2017
22	Thol WL Sanctuary	6.99	Final Notification issued on 09.02.2015
23	Hingolagadh Nature Education Sanctuary	6.54	Final notification issued on 20.06.2017
24	Khijadiya WL Sanctuary	6.05	Draft notification issued on 27.11.2015
25	Gaga WL Sanctuary	3.33	Final notification issued on 07.06.2017
26	Kachchh Bustard Sanctuary	2.03	Proposal pending.
27	Porbandar Bird Sanctuary	0.09	Draft notification issued on 20.11.2015
<b>Total</b>		<b>17,099.90</b>	

## Appendix VII

(Reference: Paragraph No. 3.1.9.3)

Details showing non-recovery of Net Present Value and five *per cent* of the project cost as on July 2017

Sl. No.	User Agency	NPV recoverable (₹ in lakh)	Project cost recoverable (₹ in lakh)	Description
1	Gujarat Energy Transmission Company Limited	51.45	Recovered	NPV in respect of 11.747 ha non-forest land diverted remained to be recovered as the demand notice was not issued.
2	ONGC Ltd	664.27	Recovered	Demand notice was issued but the user agency protested recovery on the plea that the SCI did not direct to pay NPV.
3	Dedicated Freight Rail Corporation of India, Ajmer	Recovered	60.00	Sanction order did not include condition for recovery of five <i>per cent</i> of the project cost but included a special condition of recovery of ₹ five lakh <i>per annum</i> ; however its recovery was outstanding for three years (2014-17).
			15.00	
4	Rail Development Corporation India Limited	Recovered	26.45	Sanction order did not include condition for recovery of five <i>per cent</i> of the project cost.
5	Power Grid Corporation India Limited	1,534.51	268.00	Sanction order did not include condition for recovery of NPV and five <i>per cent</i> of the project cost but included a specific condition under which user agency has to incur five percent of the project cost/ placing the fund at the disposal of the F&ED on habitat improvement and wildlife conservation in the Sanctuary area.
6	Sardar Sarovar Narmada Nigam Limited (SSNNL)	1,007.03	Could not be worked out as total project cost was not available in the proposal submitted to NBWL.	Sanction order did not include condition for recovery of NPV and five <i>per cent</i> of the project cost.
7	Vodafone Essar	22.57		Sanction order did not include condition for recovery of NPV and five <i>per cent</i> of the project cost.
8	Gujarat Energy Transmission Corporation Limited (diversion approved in 2016)	212.29		Sanction order did not include condition for recovery of NPV and five <i>per cent</i> of the project cost.
9	Vestas Wind Technology India Private Limited	81.47		The sanction order did not contain conditions for recovery of NPV, five per cent of project cost and lease rent of ₹ 30,000 <i>per MW</i> for the period of lease <sup>1</sup> . <b>(Refer to Para 3.1.9.1)</b>
10	Adani Power Limited (APL)	324.90	Recovered	The DFO did not issue demand notice for recovery of NPV for diversion of 40.768 ha non-forest land of the sanctuary. It was also noticed that for remaining 18.20 ha land, NPV was demanded at the rate of ₹ seven lakh <i>per ha</i> which was less than the approved rates of ₹ 7.30 lakh <i>per ha</i> . The short recovery of NPV on diversion of forest land and non-recovery of NPV for diversion of non-forests land led to total non-recovery of NPV of ₹ 3.24 crore <sup>2</sup> from APL. <b>(Refer to Para 3.1.9.2)</b>

(Source: - Information compiled from records of the Department)

<sup>1</sup> In case of windmills, it is an additional recovery as per MoEF&CC guidelines of May 2004.

<sup>2</sup> (18.2 ha X 5 X ₹ 30,000 plus 40.768 ha x ₹ 7.30 lakh).

## Appendix VIII

(Reference: Paragraph No. 3.2.5.1)

## Status of measures recommended and completed as on March 2017

(in numbers unless otherwise mentioned)

Structures	HLC-I		HLC-II				Total no. of structure recommended by HLCs	Total no. of structures completed	per cent of completion		
	Madhavpur		Bhavnagar- Una	Maliya		Maliya- Lakhpat					
	Recomm ended	completed		Recomm ended	completed						
Tidal regulator and Bandhara (TR)	17	18	37	14	71	14	55	54	180	100	55.56
Cheek dams (CD)	75	181	300	214	460	279	740	684	1,575	1,358	86.22
Recharge Tanks (RT)	7	5	30	21	60	6	25	9	122	41	33.61
Recharge Wells (RW)	200	198	450	135	680	64	150	847	1,480	1,244	84.05
Recharge Reservoir (RR)	0	2	22	10	21	6	0	0	43	18	41.86
Gully/ Nalla Plugging	0	4,487	20,000	0	45,400	0	20,000	0	85,400	4,487	5.25
TCD Farms	3	0	6	0	0	0	70	0	79	0	0.00
Afforestation (Hectare)	50,000	5,867	15,750	0	25,000	0	14,000	0	1,04,750	5,867	5.60
Coastal Land Reclamation (Hectare)	0	0	13,000	0	16,500	0	10,000	0	39,500	0	0.00
Raising of shelter belt improvement and afforestation of mangrove forest	0	0	0	0	0	0	4,900	0	4,900	0	0.00
	0	0	0	0	0	0	1,050	0	1,050	0	0.00
Coastal Bund (Kms)	0	0	0	0	0	0	60	0	60	0	0.00
Spreading Channel and connecting Channel (Kms)	60	74.29	140	6.29	540	139.48	166	71	906	291	32.12

**Appendix IX**  
**(Reference: Paragraph No. 3.2.5.1)**  
**Status of measures recommended and completed as on March 2017 in the priority areas**

**(in numbers)**

Particulars	HLC-II														
	HLC-I		Madhavpur-Malia						Malia-Lakhpur						
	Una- Madhavpur	Bhavnagar- Una	Kalipat River Basin		Ruparel River Basin		Machchhu River Basin		Bhukhi river basin		Kharod-Rajda river basin		Kankavati river basin		
recommened	Completed	recommened	completed	recommened	completed	recommened	completed	recommened	completed	recommened	completed	recommened	completed	recommened	completed
Tidal regulator / <i>Bandhara</i>	1	1	2	1	1	1	0	1	0	2	0	1	2	1	1
Check dams	14	37	14	24	2	2	4	3	4	4	4	4	4	0	16
Recharge Tanks	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0
Recharge Wells	0	33	20	11	30	0	10	30	0	10	10	10	10	10	60
Recharge Reservoir	0	1	2	1	1	0	0	1	4	0	0	4	0	0	0

**Appendix X**

(Reference: Paragraph No. 3.2.6.5)

**Details of Tidal Regulator/ *Bandharas* constructed away from the mouth of the rivers**

Sl. No.	Name of the Tidal Regulator/ <i>Bandhara</i>	Name of River on which constructed	Year of Completion	Distance of TR/ <i>Bandhara</i> from mouth of the river (in km.)	Distance upto which the tides were running in to the river (in km.)	Distance prevented from sea water ingress (in km.)
1	Chhadwada Bandhara	Gupt	2010-11	2.50	2.00	0
2	Vira Bandhara (Under Const.)	Lehrakh	In progress	2.00	0.40	0
3	Gundala (Luni) Bandhara	Luni	2013-14	1.00	0.50	0
4	Layja-2 Bandhara	Kharod	2012-13	3.50	0.60	0
5	Kosa Vadsar T.R.	Mitti	2010-11	5.90	1.10	0
6	Suthari (Akri) Bandhara	Rakhadi	2014-15	1.30	1.00	0

## Appendix XI

(Reference: Paragraph No. 3.2.7.2 (a))

Reach-wise number of wells in different salinity zones on the basis of  
Total Dissolved Solids

Reaches		Fresh water zone TDS < 2000 ppm	Low salinity zone TDS 2000 to 4000 ppm	Medium salinity zone TDS 4000 to 6000 ppm	High salinity zone TDS > 6000 ppm	Total
<b>Una- Madhavpur</b>	May-2012	125	76	43	11	<b>255</b>
	May-2013	110	47	58	25	<b>240</b>
	May-2014	111	60	46	33	<b>250</b>
	May-2015	125	60	49	23	<b>257</b>
	May-2016	116	54	51	30	<b>251</b>
	October 2016	147	53	46	15	<b>261</b>
<b>Bhavnagar Una</b>	May-2012	98	52	12	16	<b>178</b>
	May-2013	70	53	18	21	<b>162</b>
	May-2014	58	39	13	14	<b>124</b>
	May-2015	71	30	15	12	<b>128</b>
	May-2016	54	40	12	16	<b>122</b>
<b>Madhavpur Maliya</b>	May-2012	271	98	36	15	<b>420</b>
	May-2013	152	171	72	54	<b>449</b>
	May-2014	135	142	60	49	<b>386</b>
	May-2015	195	135	55	27	<b>412</b>
	May-2016	144	139	65	42	<b>390</b>
<b>Maliya- Lakhpat</b>	May-2012	66	64	10	9	<b>149</b>
	May-2013	41	70	25	11	<b>147</b>
	May-2014	15	33	23	22	<b>93</b>
	May-2015	28	33	21	09	<b>91</b>
	May-2016	33	35	12	14	<b>94</b>
<b>Total</b>	May-2012	<b>560</b>	<b>290</b>	<b>101</b>	<b>51</b>	<b>1,002</b>
	May-2013	<b>373</b>	<b>341</b>	<b>173</b>	<b>111</b>	<b>998</b>
	May-2014	<b>319</b>	<b>274</b>	<b>142</b>	<b>118</b>	<b>853</b>
	May-2015	<b>419</b>	<b>258</b>	<b>140</b>	<b>71</b>	<b>888</b>
	May-2016	<b>347</b>	<b>268</b>	<b>140</b>	<b>102</b>	<b>857</b>

(Source: Information furnished by the Department)

APPENDIX XII

(Reference: Paragraph No. 3.8)

Statement showing the additional/ excess works awarded as excess/ extra items to the contractor leading to loss of testing charges

Sl. No.	Name of work		Estimated cost Tendered cost Work done (₹ in crore)	Cost of excess/ extra items (₹ in crore) & percentage	Estimated cost of excess and extra items (₹ in crore) & percentage	Scope of work Scope of excess/ extra items	Reasons for excess/ extra items stated in files/correspondence	Audit rebuttal to excess/ extra items proposal
	Date of work order	Stipulated date of completion Actual date of completion						
1		Strengthening of Dhandhuka-Dholera Road 0/0 to 27/0 km	9.35 7.58 10.01	1.86 0 (25)	2.37 (25)	Original estimate 75 mm Built Up Spray Grout (BUSG) in 10/0 to 22/0 km stretch and 37.50 mm Bituminous Macadam (BM) and 25 mm Semi Dense Bituminous Carpet (SDBC) in 0/0 to 27/0 km stretch. <b>Excess items</b> 75mm BUSG in 0/0 to 10 km and 22/0 to 27/0 km stretch not covered above.	<ul style="list-style-type: none"> <li>The excess proposal submitted (December 2012) was sanctioned by the Department (December 2012) for ₹ 1.85 crore.</li> <li>Due to fund constraint, estimate for 0/0 to 10/0 km and 22/0 to 27/0 km (total 15 km) with BUSG was not included in the sanctioned estimate.</li> </ul>	<ul style="list-style-type: none"> <li>The reasons for excess is not justified as division knew that to maintain 137.50 mm crust thickness as provided in 10/0 to 22/0 km stretch (75 mm + 37.5 mm + 25 mm) it was almost necessary to provide 75 mm BUSG in the length of 0/0 to 10 km and 22/0 to 27/0 also.</li> <li>This was also required to avoid undulation in initial and end length of the road.</li> <li>Thus, division prepared faulty estimates due to not considering above requirements and final cost was more than estimated cost</li> </ul>
		12.09.2012 11.05.2013 01.05.2013						
2		Widening and Strengthening of Sanand- Nalsarovar Road (1/200 to 32/800km), Mankol-Makhiyav Road (3/0 to 6/30km) and Makhiyav-Zolapur road(0/0 to 6/70km)	45.56 38.25 48.01	5.56 1.17 (18)	6.91 (15)	Original estimate 50 mm BM and 25 mm SDBC for widening portion <b>Excess items</b> 75 mm BM on widening portion and 25 mm SDBC on existing surface and <b>Extra items</b>	<ul style="list-style-type: none"> <li>The excess/extra proposal was submitted (October 2012) and sanctioned by Department (October 2012) for ₹ 5.43 crore for excess items and ₹ 1.23 crore for extra items.</li> <li>The excess and extra items found necessary due to providing lesser thickness of 50 mm BM and 25</li> </ul>	<ul style="list-style-type: none"> <li>The reasons for excess and extra items are not justified as GERI suggestion based on CBR and BBD tests were not considered while preparing the estimates.</li> </ul>

Sl. No.	Name of work		Estimated cost Tendered Work done (₹ in crore)	Cost of excess/ extra items (₹ in crore) & percentage	Estimated cost of excess and extra items (₹ in crore) & percentage	Scope of work Scope of excess/ extra items	Reasons for excess/ extra items stated in files/correspondence	Audit rebuttal to excess/ extra items proposal
	Date of work order	Stipulated date of completion						
3	19.06.2012	Improvement and Widening of Strengthening Bavla-Rupal-Begva Road Km 0/00 to 22/8 and Simej Koth Gangad Kalyangadh Lagdana Baldana Road 12/7 to 22/7 km and 22/7 to 29/2 km.	21.08 15.81 19.70	4.63 0 (29)	4.76 (23)	Asphalt painting	mm SDBC due to fund constraint as against the treatments of 40 mm BM and 120 mm Dense Bituminous Macadam (DBM) suggested by the Gujarat Engineering Research Institute (GERI) in widening based on CBR and BBD tests.	
	22.09.2012							
4	Widening and strengthening of Nal Sarovar Viramgam Road 26/200 to 52/750 km			2.98 0 (16)	3.23 (14)	Original estimate 150 mm sand layer, 250 mm metalling layer, 50 mm BM and 25 mm SDBC in the widened 7 m width.	<ul style="list-style-type: none"> <li>The proposal for excess items submitted (May 2012) was approved by department (March 2013) for ₹ 2.98 crore.</li> <li>Road was damaged during</li> </ul>	<ul style="list-style-type: none"> <li>The original estimate was prepared in December 2011 i.e., after monsoon period and as such damaged road should have been considered at the time of preparation of the estimates by</li> </ul>

Sl. No.	Name of work		Estimated cost Tendered cost Work done (₹ in crore)	Cost of excess/ extra items (₹ in crore) & percentage	Estimated cost of excess and extra items (₹ in crore) & percentage	Scope of work Scope of excess/ extra items	Reasons for excess/ extra items stated in files/correspondence	Audit rebuttal to excess/ extra items proposal
	Date of work order	Stipulated date of completion						
		09.04.2012 08.10.2013 19.09.2013				<p><b>Excess items</b> 50 mm BM on existing 3.66 m width and widening of additional 500 m road length</p>	<p>monsoon; and To have continuous widening of road, additional 500 m (from 52/020 to 52/520 km) was proposed as this was not included in the estimate due to fund constraint.</p>	<p>the EE and The division proposed the entire length of 26.520 km in the estimate but subsequently road length of 500 m was omitted from the estimate necessitating the second portion of the excess item..</p>
5	Widening and strengthening of Bagodara Nalsarovar Road 0/0 to 26/2 km	20.09.2012 19.03.2014 18.03.2014	31.00 24.02 31.74	6.60 0 (27)	8.07 (26)	<p><b>Original estimate</b> 150 mm sand layer, 225 mm WBM, 225 mm WMM, 75 mm BUSG, 50 mm BM and 25 mm SDBC in widening portion from .3.66 m to 7 m. on 0 to 14 km Strengthening of 7 m width by BUSG, BM and SDBC in 14/0 to 26/200</p> <p><b>Excess Items</b> 50 mm BM and 25 mm SDBC in 3.66 m central existing road width and 75 mm BUSG in widening portion in 0/0 to 14/0 km. 225 mm thick WBM in 7300 m in 14/0 to 26/2 km and improvement of junction up to 500 m by four-laning the road.</p>	<p>The EE submitted excess items proposal (December 2012) to the Department and approved (December 2012) proposal by the Department. The reasons for excess items were: Due to funds constraint, crust thickness was provided less than suggested by GERI. Consultant suggested additional thickness on existing central portion. Due to lesser crust thickness damage occurred, and WBM had to be provided in 7,300 m length.</p>	<p>EE did not adopt suggestion of GERI to provide crust thickness of 190 mm of asphaltic treatment resulting in the excess item. The EE knew that portion of the road was passing from black cotton soil and this disturbed the road and made road surface uneven causing difficulties to the traffic. However instead of providing WBM for 12,200 m length only 4,900 m length was considered while preparing the estimate leaving 7300 metres to be covered as an excess item.</p>

Sl. No.	Name of work		Estimated cost Tendered Work done (₹ in crore)	Cost of excess/ extra items (₹ in crore) & percentage	Estimated cost of excess and extra items (₹ in crore) & percentage	Scope of work Scope of excess/ extra items	Reasons for excess/ extra items stated in files/correspondence	Audit rebuttal to excess/ extra items proposal
	Date of work order	Stipulated date of completion						
6	Widening and strengthening of Virangam Bechraji Road 1/80 to 43/60 km (7 m to 10 m)		22.52 16.66 17.97	3.18 0.14 (20)	3.60 (16)	<b>Original estimate</b> WBM, WMM, 50 mm BM and 25 mm SDBC in the 3 meter widening portion in 4/900 to 28/500 km stretch and 50 mm BM and 25 mm SDBC in 10 m (including 3 m widening) in 1/800 to 4/900 km stretch. <b>Excess items</b> 25 mm SDBC in entire 10 m width of the road in 1/8 to 28/500 stretch.	<ul style="list-style-type: none"> <li>The EE submitted (January 2013) excess item proposal which was approved by the Department in January 2013.</li> <li>The excess item of 25 mm SDBC was necessitated to fill joints between existing road surface and widened surface, to avoid seepage of water in sub base.</li> </ul>	<ul style="list-style-type: none"> <li>The fact that the joints between existing road surface and widened road surface needs to filled up to avoid seepage of water is not something that would not have been known at the time of estimate.</li> </ul>
	28.05.2012							
	27.11.2013							
7	Widening up to 10 m road for Bagodara-Dhandhuka - Barvala Road 61/4 to 131/5 km (working length 61/4 to 105/0 km) under District to District Scheme		71.93 45.11 96.38	81.55 0.10 (181)	118.28 (164)	<b>Original estimate</b> Widening from 7 m to 10 m work in 61/4 to 105/0 km stretch (four lane in 104/30 to 105/0 km). <b>Excess items</b> Additional work of widening of 10 m road from 105/0 to 131/5 stretch and four lane of Bagodara to Fedra Road km 61/4 to 82/3 km	<ul style="list-style-type: none"> <li>The Department accorded in-principle approval (January 2015) to execute additional works within cost of AA. The proposal for additional work as an excess item (₹ 73.79 crore) and extra items (₹ 1.54 crore) and revised AA was submitted by the EE (December 2015) to the Department. The Department accorded (February 2016 and October 2016) approval to proposal and also instructed to award work to same contractor at his quoted tendered rates.</li> </ul>	<ul style="list-style-type: none"> <li>The widening of 10 m work in 105/0 to 131/5 km and four laning work in 61/4 to 82/3 of Bagodara- Fedra Road were not part of approved AA and was not supported with survey and investigation report.</li> <li>Further, the additional works were not kept within the approved cost of AA as required in the in-principle approval and required a fresh AA.</li> <li>Therefore, the division, considering the excess works proposed, should have invited tenders separately for these additional lengths so as to get more competitive rates as the excess items</li> </ul>
	17.06.2014							
	31.03.2016							
	In progress							

Sl. No.	Name of work		Estimated cost Tendered cost Work done (₹ in crore)	Cost of excess/ extra items (₹ in crore) & percentage	Estimated cost of excess and extra items (₹ in crore) & percentage	Scope of work Scope of excess/ extra items	Reasons for excess/ extra items stated in files/correspondence	Audit rebuttal to excess/ extra items proposal
	Date of work order	Stipulated date of completion						
8	Widening and strengthening of Virangam Bechraji Road km 28/500 to 43/600 km	03.04.2013 02.07.2014 15.05.2014	16.32 11.87 15.31	3.23 0.08 (28)	3.85 (24)	<p><b>Original estimate</b> Widening from 7 m to 10 m in 28/5 to 40/60 km stretch and strengthening of surface in 7 m from 40/6 to 43/6 km stretch with 50 mm BM, 25 mm SDBC and asphalt painting.</p> <p><b>Excess item</b> Providing SDBC in 10 m width of entire road length and widening of cross drainage.</p> <p><b>Extra item</b> Providing asphalt tack coat</p>	<p>The EE submitted (June 2013) excess and extra items proposal for SDBC and asphalt painting over 10 m road width. The Government approved (June 2013) the excess items.</p> <p>The excess and extra items were provided to prevent settlement of sub base from seepage of water between existing surface and widening road surface.</p>	<p>were 181 per cent of the tendered cost.</p> <p>The division should have factored in the problem regarding seepage of water between the existing surface and widened surface at the time of original estimate as this is a known fact in road construction.</p>
	<b>Total</b>		<u>241.48</u> <u>177.63</u> <u>259.94</u>	<u>109.59</u> <u>1.49</u>	<b>151.07</b>			

Note: (i) In column No. 4 percentage worked out with reference to total excess as per tendered rate and with the tendered cost of the work.  
(ii) In column No. 5 percentage worked out with reference to total estimated cost of the excess and extra items and with estimated cost of the work.

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