CHAPTER-III
PERFORMANCE AUDITS

WOMEN AND CHILD DEVELOPMENT DEPARTMENT

3.1 Implementation of National programme of nutritional support to primary education (mid-day meal scheme)

Highlights

Review of implementation of National Programme of Nutritional Support to Primary Education i.e., Mid-Day Meal Scheme (MDM) during the period 2003-08 in the State revealed accumulation of unspent balance with implementing agencies, disinterest of school children in MDM due to single menu, absence of community participation and suffered from non prioritisation of health related programmes and inadequate infrastructure. Instances of theft of food grains, pilferage and misappropriation were noticed in audit. Flawed payments of transportation and supervision charges were also detected. Absence of appropriate internal controls at various stages including monitoring and supervision affected the implementation of the programme. Required impact evaluation was not done.

- **During 2003-08, actual expenditure of Rs 448.97 crore was less than the assistance of Rs 660.01 crore received from Government of India. In the districts and blocks test checked, of Rs 237.60 crore provided under the programme during the period Rs 49.18 crore remained unspent.**

(Paragraph 3.1 2.2)

- **Cases of short accountal of rice worth Rs 1.81 crore, excess payment of transportation of Rs 1.02 crore, misappropriation of 33506 quintals of rice worth Rs. 3.68 crore and delayed delivery of 2.09 lakh quintals of rice were noticed.**

(Paragraph 3.1.3)

- **Kitchen facilities were not available in 35330 schools, constructions of kitchen wherever taken up did not confirm to the GOI prescribed norms.**

(Paragraph 3.1.4 and 3.1.4.1)

- **The implementation of scheme was marred by delayed implementation, disruption, non-provision in drought affected districts, non-provision of required quantity of dal and eggs, loss of teaching hours, absence of community participation.**

(Paragraph 3.1.5.1, 3.1.5.2, 3.1.5.3, 3.1.5.5, 3.1.5.7 and 3.1.5.8)

- **The MDM could not increase and sustain the enrolment and attendance, check up of health status and hygienic conditions of cooking and serving were not observed.**

(Paragraph 3.1.6.1, 3.1.6.2, 3.1.6.3 and 3.1.6.4)

[*] Abbreviations used in this performance review have been expanded in Glossary of abbreviations at pages 234 to 238

❖ **External evaluation of implementation was not carried out. No action was taken on deficiencies on implementation of the scheme observed through internal assessment. Supervision and inspections at various levels were short of targets due to lack of man power. State, district and Block level monitoring committees were not effective in absence of regular meetings. Progress reports on implementation were not received regularly and analysed.**

(Paragraph 3.1.7.1 to 3.1.7.5)

3.1.1.1 Introduction

The National Programme of Nutritional Support to Primary Education known as Mid-day Meal (MDM) scheme, a centrally sponsored scheme, was under implementation in the State since August 1995 to provide cooked noon meal to primary school students of class I to V of all Government and Government aided schools all over the State for at least 210 days in a year. The scheme intended at increasing (a) enrolment, (b) retention and (c) attendance while improving the nutritional status of the children with special attention to be given to children belonging to disadvantaged sections. The coverage of the scheme in the State for various types of schools over a period of time is as detailed in the table below:

Period of implementation	Coverage of schools	Mode of distribution of rice/quantum of rice used in cooked food
August 1995 to August 2004	Government and Government Aided Primary Schools	Three kilograms of rice per child per month to be distributed. Cooked food was served from July 2001 onwards in schools of all 80 blocks of the eight KBK[1] districts and 74 ITDA[2] blocks of Non-KBK districts at the rate of 100 grams of rice per child per school day for which the State Government provided cooking cost of 58 paise per child / day. Extended (April 2002) this facility to schools in three blocks of Boudh district.
September 2004 onwards	Extended to all Government and Government Aided Primary Schools and EGS Centres of the State	Serving of cooked food at the rate of 100 grams of rice per child per school day with provision of cooking cost of Rs 1.58 per child / day (GOI : Rupee one and State Government : 58 paise increased to 64 paise from (October 2005) which increased (September 2006) to Rs 2.14 (GOI : Rs 1.50 and State Government : Rs 0.64 paise).
October 2007 onwards	Extended to Upper primary schools of 172 Educationally backward Blocks in 22 districts	Serving cooked food at the rate of 150 grams of rice per child per school day with provision of cooking cost of Rs 2.64 (GOI : Rs 2.00, State Government 64 paise).

3.1.1.2 Organisational set up

In the State, the scheme was implemented by the Women and Child Development (WCD) Department headed by a Director, Social Welfare under overall supervision of the Commissioner-cum-Secretary of the Department. At the district level the scheme was implemented by the District Social Welfare Officers (DSWOs), Additional District Social Welfare Officers (ADSWOs), at

[1] Kalahandi, Nuapada, Bolangir, Sonepur, Gajapati, Nawarangpur, Rayagada and Koraput

[2] ITDA :Integrated Tribal Development Agency

the sub-division level by the Sub-divisional Social Welfare Officers (SSWOs) and at the Block level by the Block Development Officers (BDOs) respectively assisted by the Social Education Organisers (SEOs) of the Department.

The responsibility for cooking in 50 *per cent* of the primary schools is assigned to women self help groups (WSHGs) as of March 2008.

3.1.1.3 Audit Objectives

The objectives of the performance audit were to verify that:

- the financial management was efficient and effective;
- requisition, allocation, receipt and utilisation of food grains were made timely and efficiently;
- infrastructure facilities such as kitchen-cum-stores and kitchen devices were adequate;
- the programme management was effective to ensure serving of cooked meals of quality and of the prescribed calorific value;
- impact of the scheme on improving enrolment, attendance and retention of the students in primary schools / EGS centres besides improving the nutritional and health status and
- the system of management, monitoring and evaluation (MME) was effective

3.1.1.4 Audit Criteria

Following were the audit criteria used for the performance audit:

- Annual work plans, Budget release orders of State Government, sanction orders of GOI;
- Norms prescribed for utilisation of rice and guidelines issued by GOI;
- Norms prescribed by GOI to get the reimbursement of the cost of transportation of food grains;
- Norms prescribed for infrastructural development of the scheme;
- Quality assurance norms of food for serving mid-day meal;
- Statistics maintained by the Orissa Primary Education Programme Authority (OPEPA) on enrolment, retention and attendance in schools and performance indicators/programme parameters for assurance of nutritional status; and
- Prescribed monitoring mechanism.

3.1.1.5 Scope of audit and methodology

The performance audit on implementation of the Scheme covering the period 2003-08 was conducted during January to May 2008 through test check of records of the WCD department and seven out of the 30 DSWOs of the State

selected by adopting circular systematic sampling and 140[3] schools in the seven selected districts. Besides, four education guarantee scheme (EGS) centres and ten primary schools in rural areas and two EGS centres and four primary schools in urban areas from each selected district were selected with random sampling without replacement. Thus, in all 20 primary schools/EGS centres were selected in each district. In addition, records of three DSWOs[4] were also test checked.

Interviews to elicit information at school level were also conducted by interviewing 652[5] beneficiaries and 543 parents in 132 schools to ascertain the impact of the programme implementation.

The audit objectives were discussed (8 April 2008) in an entry conference and results of audit in exit conference (24 September 2008) with Commissioner-cum-Secretary, WCD department. The outcome of the discussion has been suitably incorporated.

Audit Findings

The components of the scheme are cooking cost, food grains like rice and dal, infrastructure viz. kitchen-cum-stores and kitchen devices for cooking, preparation and distribution of cooked meal and management, monitoring and evaluation. The cooking cost included cost of dal and its transportation cost, vegetables, eggs, oil, condiments, fuel and supervision charges of the WSHGs. The results of the Performance Audit on the above components are presented in the succeeding paragraphs.

3.1.2 Funds management

3.1.2.1 Funding pattern

Government of India (GOI) support was provided by way of supply of free food grains through Food Corporation of India (FCI). The GOI provided transportation charges for transportation of rice from the FCI depot to the school point up to Rs 50 per quintal till September, 2004 and Rs 75 per quintal thereafter and assistance of Rs 60000 per school for construction of kitchen-cum-stores. The GOI also provided one time assistance of Rs 5000 to each school during 2006-08 for purchase of utensils and cooking devices. While the cooking cost was shared by both the GOI and the State Governments, expenses on infrastructure and MME were met by the GOI.

3.1.2.2 Budget provision and expenditure

Budget provision made by the State Government for the GOI assistance as well as the State funds meant for cooking cost, construction of kitchen sheds, kitchen devices and provision for MME etc. were allotted to the DSWOs who in turn, transferred the funds to the BDOs concerned for utilisation by the

[3] Out of 140 schools selected in audit, 132 schools were actually audited since eight EGS Centres were closed by orders of the Government from May 2007.
[4] Mayurbhanj, Balasore and Sambalpur
[5] Boys-345; Girls-307

schools / WSHGs as per their requirement for implementation of the programme in the schools.

During 2003-08, the State Government received GOI assistance of Rs 660.01 crore towards cooking cost (Rs 378.06 crore), kitchen sheds (Rs 248.46 crore), kitchen devices (Rs 26.36 crore) and MME (Rs 7.13 crore). The release and utilisation of funds under the programme during 2003-08 were as below:

(*Rupees in crore*)

Year	GOI assistance received	Budget Provision			Funds released			Expenditure			Savings
		Central Plan	State Plan	Total	Central Plan	State Plan	Total	Central Plan	State Plan	Total	Total (Percentage)
2003-04	Nil	Nil	16.00	16.00	Nil	9.49	9.49	Nil	9.34	9.34	6.66(42)
2004-05	73.56	33.41*	19.30	52.71	13.01*	19.87	32.88	12.23*	19.25	31.48	21.23(40)
2005-06	20.12	121.30*	80.90	202.20	66.51	80.90	147.41	67.63	67.04	134.67	67.53(33)
2006-07	226.52	137.67	67.19	204.86	137.67	52.71	190.38	126.17	47.79	173.96	30.90(15)
2007-08	339.81	246.36	67.19	313.55	246.36	54.05	300.41	242.94	52.16	295.55	18.00(6)
Total	**660.01**	**538.74**	**250.58**	**789.32**	**463.55**	**217.02**	**680.57**	**448.97**	**195.58**	**645.00**	**144.32(18)**

*Includes Additional Central Assistance and Prime Minister's Gramodaya Yojana funds

The total expenditure incurred on the scheme under Central and State plan was less than the GOI assistance received

It would thus be seen that against the GOI assistance of Rs 660.01 crore received during 2003-08, the budget provisions under Central Plan during the period were only Rs 538.74 crore and the amount released by the State Government was still less at Rs 463.55 crore. However, the total expenditure incurred on the scheme under Central and State Plans amounted to Rs 645 crore, which was even less than the GOI assistance received during the period indicating that the State virtually did not contribute anything of its own in real monetary terms. Following deficiencies and irregularities were noticed in utilisation of funds in audit:

Nature of irregularity	Audit findings
Huge unspent funds lying in bank accounts	In the ten districts and nineteen Block level offices[6] test checked, out of Rs 237.60 crore drawn during 2003-08, Rs 49.18 crore remained unspent with them at the end of February/March 2008. These amounts were parked in the Current/Savings Bank accounts in contravention to Financial Rules and reported as utilised to GOI.
Unrealistic provision for transportation cost of dal	The State Government earmarked 10 paise per beneficiary from the cooking cost for transportation charges of dal for delivery at school point. Accordingly transportation cost for one quintal of dal works out to Rs 500 which was higher by Rs 425 - Rs 450 in comparison to transportation cost of rice being borne by the GOI at the rate of Rs 50 to Rs 75 per quintal. On being pointed out, the State Government reduced allocation for transportation cost of dal in the cooking cost to two paise with effect from September 2007. The higher allocation resulted in accumulation of unspent balances with the implementing agencies. These funds could have been used for other components of the cooking cost for providing better meals to the beneficiaries.

[6] Districts: Khurda, Cuttack, Ganjam, Sundargarh, Baragarh, Bolangir, Sonepur, Mayurbhanj, Balasore and Sambalpur.
Blocks : Agalpur, Bolangir, Belapada, Gudvella, Khaprakhole, Patnagarh, Puintal, Saintala, Titlagarh, Bahanaga, Baliapala, Basta, Bhogarai, Jaleswar, Nilagiri, Oupada, Remuna, Soro and Balasore Sadar.

Excess reimbursement of transportation charges	As per the scheme guidelines, the GOI was to reimburse the actual cost of transportation of food grains from the nearest FCI godown to the primary schools subject to a prescribed ceiling of Rs 75 per quintal. The DSWOs, Ganjam and Mayurbhanj claimed transportation charges at maximum ceiling instead of amount actually required leading to an excess claim of Rs 41.80 lakh and Rs 68.42 lakh respectively during 2003-08 which remained unspent. The WCD Department did not ascertain the unspent balances before allocation of funds and no accountability had been fixed for such wrong claims.
Avoidable liability of Value Added Tax (VAT)	Under the MDM scheme, the FCI provides food grains to the State Government, the cost of which is reimbursed by the GOI to FCI at subsidised BPL rate of Rs 565 per quintal. The State Government had exempted the food grains supplied by the FCI under the MDM scheme from levy of sales tax. However, with the introduction (2004-05) of value added tax (VAT) in the State, the Government had not exempted MDM rice from levy of VAT at four *per cent.* As a result, the FCI had also been charging VAT on differential price, i.e. purchase price of Rs 1100 per quintal reduced by subsidised central issue price of Rs 565 per quintal from the DSWOs since January 2007. This had attracted liability of Rs 2.37 crore towards VAT on differential cost of rice at the rate of Rs 535 per quintal on 11.07 lakh quintals of rice lifted during January 2007 to March 2008. The State Government stated that the decision to exempt levy of VAT was pending with the Finance Department (May 2008).
Excess payment of supervision charges to WSHGs	The State Government handed over the cooking activities to Women Self Help Groups (WSHGs) in primary schools with a view to easing the burden on teachers. The WSHGs were to be paid 30 to 40 paise per beneficiary per school day for cooking and serving. Thereafter, the Government issued revised orders (December 2005) for making monthly payment at the rate of Rs 500 per month to WSHGs in schools having enrolment up to 50 students and up to a ceiling of Rs 1100 for schools having enrolment of more than 50 students. The above rates included remuneration of Rs 200 to a cook and Rs 100 payable to a helper engaged for cooking. It was however, noticed that the BDOs under the jurisdiction of DSWOs, Bolangir and Sonepur paid honorarium of Rs 300 per month to cooks and helpers over and above the supervision charges to the WSHGs in the schools having enrolment of more than 50 students resulting in excess payment of Rs 36.52 lakh during October 2005 to March 2008. The DSWO, Baragarh also made payment at the flat rate of Rs 1100 to WSHGs running schools with enrolment of more than 50 students resulting in excess payment of Rs 62.14 lakh.

3.1.3 Management of food grains

The WCD department indented their requirement of food grains to GOI for the next session as per actual enrolment of students as of 30th September of the academic year by 31 January each year. The GOI conveyed the district wise allocation to the WCD department and the Food Corporation of India (FCI) by 28th February of the year. In turn, the WCD department released district-wise allocation in favour of DSWOs for onward distribution to schools through respective blocks month-wise with intimation to Food Corporation of India (FCI). Allocated food grains lifted by the transport agencies engaged by the

DSWOs from FCI godowns were delivered to Block godowns from where the food grains were transported to school points.

Audit observed the following irregularities in management of foodgrains:

Nature of irregularity	Audit findings
Discrepancy in the quantity of rice lifted from the FCI godowns	Scrutiny of records of the WCD Department and information furnished by FCI revealed that the lifting of rice as per department records was 21.80 lakh quintals as against the FCI booking of 21.96 lakh quintals during 2003-05 leading to short accountal of 0.16 lakh quintals of rice worth Rs 1.81 crore. Discrepancy was not reconciled (May 2008).
Excess payment to transport agents	The DSWOs engaged Transport Agents (TAs) for lifting rice from FCI and delivery at Block points for schemes of Supplementary Nutritional Programme (SNP) under the Integrated Child Development Scheme and MDM. It was seen that in Khurda[7], Balasore[8], Mayurbhanj[9] and Sambalpur[10] districts, the contracts were awarded at higher rates for transportation of MDM rice as against the lower rate at which SNP rice was transported from FCI depots and delivery at Block points despite goods to be lifted and distance to be covered were same. This led to excess payment of Rs 1.02 crore in respect of MDM rice transported in these districts during 2003-08 as detailed in ***Appendix-3.1***.
Misappropriation of rice by the storage and transport agents	❖ The Storage and Transport Agents (STAs) appointed by the Collectors lifted the allocated rice from the FCI and transported the same to different blocks and to school points. When rice was lifted from the FCI, the total quantity delivered was weighed in a lot irrespective of the number of bags and recorded in the release order of rice (ROR). But during delivery at the school point, rice was delivered not under weighment system, but treating each bag as containing 50 kg of rice. In the process, the STAs during 2004-08 lifted 34.84 lakh quintals in 70.32 lakh bags but actually delivered 69.69 lakh bags containing 34.53 lakh quintals. Acknowledgment were, however, obtained from the school points for 34.84 lakh quintals resulting in misappropriation of 31,397 quintals worth Rs 3.45 crore vide ***Appendix - 3.2***. MDM in-charge of two schools[11] admitted (July 2007) that they received less quantity of food grains as compared to standardised weight of the bags. The Government stated that steps were being taken to have weighing machine by the transport agents while distributing rice. ❖ The DSWO, Bargargh issued way bills (in triplicate) against the rice to be lifted by a transport agent from FCI depots for delivery at different blocks. However, the agent delivered less rice at the blocks than the quantity actually lifted from the FCI. This became possible by following a method of recording less quantity of rice in the copies of way bill available in the Block office than the actual quantity recorded in the same copy of way bills available in the DSWO's Office. This facilitated misappropriation of 1952 quintals of rice worth Rs. 21.47 lakh as detailed at ***Appendix - 3.3.***

The Transport agents misappropriated rice worth Rs.23.20 lakh

[7] During the period from June 2002 to March 2006 (Rs 17.65 lakh)
[8] During the period from September 2003 to March 2008 (Rs 49.58 lakh).
[9] During the period from October 2003 to September 2006 (Rs 27.40 lakh).
[10] During the period from October 2003 to September 2006 (Rs 7.64 lakh).
[11] Nidhipur PS and Kantabada UGUP School of Khurda.

	❖ In Bolangir district the STA had lifted 157 quintals of rice worth Rs 1.73 lakh from FCI during 2003-08 on different occasions but did not deliver the same at block point. The DSWOs stated that matter would be investigated.
Delayed delivery of rice by the STAs	As per instructions (October 2001) of WCD department, the STAs were to deliver rice lifted from the FCI depots to all the Blocks on the same day of lifting. Review of stock registers along with way bills of DSWOs of Balasore and Bolangir and gate passes issued by the FCI depot showed that the STAs engaged for lifting rice from FCI to block points delivered 2.09 lakh quintals of rice worth Rs 22.96 crore at different blocks with delays up to 220 days[12] during 2003-08. The gate passes issued by FCI during delivery of rice to the transport agent were not obtained by DSWO, Balasore for record and reconciled with way bills issued and the DSWOs failed to monitor timely delivery of rice in Blocks.

3.1.3.1 Quality assurance

The programme guidelines provided that the district collectors will ensure issue of foodgrains of fair average quality (FAQ) by FCI after joint inspection by a team consisting of FCI and a nominee of the Collector. The State Government issued instructions from time to time in this regard. The quality of rice supplied by the FCI and delivered at school points was ascertained by collection of samples thereof on joint surprise visit by audit and a state level departmental officer of 12 schools of seven test checked districts and sent to the Public Analyst, State Public Health laboratory for certification of quality who reported that seven[13] out of 12 samples were found to be adulterated by way of high moisture content, presence of foreign particles and damaged grains beyond allowable limit. This became possible as proper system of inspection for quality test was not functioning in the district. The Government stated that quality of materials supplied could not be ensured as the daily ration cost in the rising trend of market price was very low.

3.1.4 Infrastructure facilities

Provision of essential infrastructure is one of the components of MDM programme. It includes kitchen-cum-store, kitchen devices and adequate water supply for cooking / drinking etc. for qualitative and hygienic preparation of MDM. During 2003-08 GOI provided assistance of Rs 248.46 crore for construction of kitchen-cum-stores at the cost of Rs 60000 per school and Rs 26.36 crore for procurement of kitchen devices at Rs 5000 per school. According to the statistics prepared by the OPEPA, of the 45773 primary schools in the State kitchen sheds were available only in 10443 schools (23 *per cent*), while drinking water facilities were available in 39463 schools (86 *per cent*).

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[12] **(i) Balasore:** 22179.03 quintals of rice delivered with delays ranging from 1 to 10 days, 3869.92 quintals delivered with delays ranging from 11 to 20 days, 857.86 quintals delivered with delays ranging from 21 to 30 days, 2273.78 quintals delivered with delays ranging from 31 to 60 days, 9221.05 quintals delivered with delays of more than 60 days.
(ii) Bolangir: 89711.19 quintals of rice delivered with delays of one to 10 days, 51725.71 quintals with delays of 10 to 20 days, 10127.79 quintals with delays of 21 to 30 days, 4597.10 quintals with delays of 31 to 60 days and 10581.06 quintals with delays of more than 60 days.

[13] Majhimunda PS and Manhari PS of Sonepur, Rugudipada GUPS of Bolangir, Tangarpali Project PS and Bhoipali PS of Baragarh, Ujjalpur PS of Sundargarh and Jhanjirmangala PS of Cuttack.

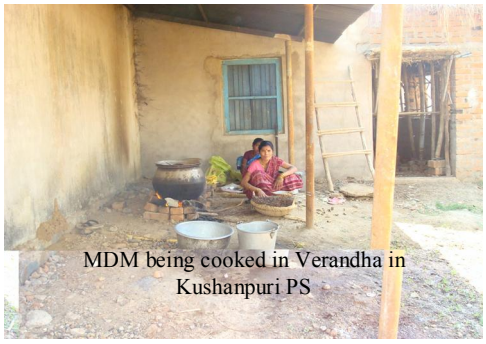
3.1.4.1 Construction of kitchen-cum-store room

Construction of kitchen cum store in 3380 schools was left incomplete.

The GOI provided (November 2006) Rs 52.58 crore for construction of kitchen-cum-store rooms of 269 square feet plinth area per school at unit cost of Rs 60,000 in 8764 schools with the stipulation that additional expenditure, if required, may be sourced from programmes like Sampoorna Grameen Rozgar Yojna (SGRY) and Sarva Shiksha Abhiyan (SSA) programmes. The State Government, however, made a provision of only Rs 20.28 crore in its budget (2006-07) for construction of 3380 kitchen-cum-stores and released the same to DSWOs in March 2007, which was transferred to the respective District Project Coordinators (DPCs) / Village Education Committees (VECs) for construction during October 2007 to March 2008.

As against the GOI's stipulation of 269 sft plinth area for construction of kitchen cum store at Rs 60000, the State Government limited the plinth area to 165 sft at the Works Department schedule of rates (2001) of Rs 364 to keep the cost within the ceiling of Rs 60000. Neither GOI's concurrence for limiting of the plinth area was sought nor was convergence of other scheme funds to keep the plinth area intact considered. Thus, construction of such kitchen cum store was not in conformity with the instructions of the GOI. However, the costs of construction had gone up from Rs 364 to Rs 550 per sft according to the schedule of rates (February 2007), which required additional fund of Rs 10.37 crore at the rate of Rs 30690 per unit. Construction of kitchen sheds in the test checked schools wherever taken up revealed that they were left half way. Thus, unrealistic provision affected the construction programme.

Scrutiny of records of the test checked schools showed that 92 *per cen*t of the schools did not have kitchen sheds. In 44 *per cent* schools food was cooked either in the verandah or in class rooms and 48 *per cent* of schools used open space as kitchen for cooking food. As reported by the WCD department, 84 *per cent* of the schools (including EGS centres) had no kitchen sheds.



MDM being cooked in Verandha in Kushanpuri PS

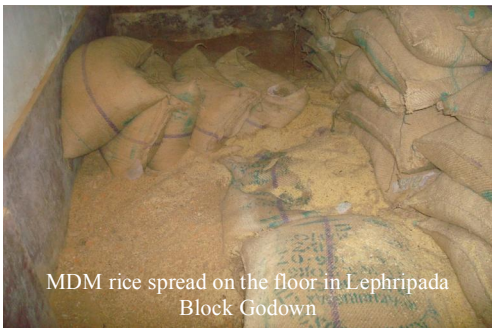
3.1.4.2 Absence of infrastructure facilities

Audit also observed deficiencies / shortcomings with regard to provision of infrastructure facilities to implement the scheme in the test checked schools as detailed below:

- The block level godowns for storing MDM rice lacked suitable facilities in Tangarpali and Lephripada blocks of Sundargarh district. In Tangarpali block rice bags were soaked with water due to leaking roof and also were rodent infested.

- In Lephripada block there were many rat holes in the godown and seventy to eighty *per cent* rice bags were found to be torn and damaged by rats.

Four to five quintals of rice spread on the ground was not fit for human consumption since this was mixed up with rat droppings. The BDO stated that steps were being taken to transfer the stock to other godowns and repair the godown.


MDM rice spread on the floor in Lephripada Block Godown

- In Balasore district there was no godown in test checked blocks[14]. As a result, the block level STAs were keeping the rice for months together under their control contrary to Government instructions (October 2001) for delivery of rice within three days of lifting.
- In the test checked schools it was seen that there was no specific place for storing of food stuff. These were stored in kitchen, office room, class room and WSHGs residence.
- In one school[15] there was an instance of theft of two quintals of rice due to unsecured storage. Similar instance of theft of 2.54 quintals of rice and 20 kilograms of dal in October 2003 was noticed in Kureivana primary school, Bolangir.

3.1.4.3 Non provision of smokeless chullahs

Despite receipt of GOI assistance LPG facilities were not available.

As per the guidelines smokeless chullahs were to be used to the extent possible in the interest of environmental protection. As per information furnished by the State Government all the schools in the State were using firewood for cooking MDM despite receipt of GOI grants of Rs 26.36 crore of which only Rs 17.20 crore was released to DSWOs at the rate of Rs 5000 per school for procurement of cooking utensils and LPG facilities for 34400 schools during 2006-08. However, in the Attabira block, 25 gas chullas supplied (July 2007) to the block by the DSWO, Baragarh were lying idle as no provision of gas cylinders was made (April 2008).


Health hazardous smoke causing fuel being used for cooking MDM in Kusampuri PS

3.1.5 Implementation of the scheme

On introduction (1 September 2004) of cooked meal under the scheme, the State Government decided each beneficiary was to be served a cooked meal comprising 300 calories and 8-12 grams protein which was enhanced (July 2006) to 450 calories and 12 grams protein prepared out of 100 grams of rice, dal (25 grams), vegetables and condiments, egg (s) and a varied menu was to

[14] Balasore Sadar, Bhogarai, Bahanaga and Oupada
[15] Badanuagaon UGUP School in Khurdha district.

be decided by a district level committee based on the children's preferences and local availability of vegetables.

The following deficiencies were noticed in implementation of the scheme.

3.1.5.1 Disruption in implementation of MDM programme

During 2004-08, targeted feeding days fell short by five to 16 *per cent* in the State

As against the required 840 days for providing MDM during 2003-07, the State Government extended the programme for 789 days[16] and the students were deprived of MDM at an average of 13 school days in a year during 2003-07. However, during 2007-08 the students were deprived of MDM for 37 school days against required provision of 230 days.

The State Government stated that in the years 2005-06 and 2006-07 there were severe floods in Orissa which disrupted MDM services. However, the reply was silent on the shortfall in achievement for the remaining period.

3.1.5.2 Non provision of MDM in drought affected districts

Belated/non-issue of notifications by Government affected implementation of MDM in schools of drought affected areas during summer vacations

The Supreme Court had directed (April 2004) that MDM was to be provided to the students during summer vacations as well in drought affected areas based on which the Government of India provided assistance at the prevailing parameters in areas declared as drought affected by the State Government. During 2004-08, 1615 villages in 2004-05, 1706 villages in 2005-06 and 1212 villages in 2007-08 having crop loss of 50 *per cent* and above were declared drought affected by Government. The WCD department however issued instructions only on 18 June 2005 to the DSWOs to provide cooked meal during the summer vacations of 2005 failing which they were to supply dry ration at the rate of three kilogram per child per month by which time the summer vacation for the year was over. No such instructions were issued for the summers of 2006 and 2008. Thus, due to belated/non-issue of instructions by the department, the students in the drought affected villages could not be served MDM during summer vacation of 2005, 2006 and 2008.

3.1.5.3 Delay in implementation of cooked meal

GOI extended (1 September 2004) the coverage of MDM programme to all the primary school students with a provision for cooking cost at the rate of rupee one per day per beneficiary in addition to supply of rice free of cost, but the State Government failed to provide cooked meals to 51 lakh primary school students during September 2004 to January 2005 and provided the same at the rate of 50 paise per day per beneficiary thereafter up to March 2005.

Further, GOI decided (October 2007) to extend the mid-day meal scheme to upper primary classes (VI to VIII) in Educationally Backward Blocks (EBBs) commencing from 1 October 2007 with provision of cooking cost at the rate of Rs 2.64 (GOI share: Rs 2.00 and State share: Re 0.64) per day and 150 grams of rice per day per beneficiary free of cost. However, due to delay in issue of notification (January 2008), the scheme was implemented from February 2008

[16] 197 days in 2003-04, 201 days in 2004-05, 190 days in 2005-06 and 201 days in 2006-07.

covering 5.26 lakh students in 8401 upper primary schools of 172 EBBs in 22 districts of the State.

Thus, delay in implementation of the cooked meal under the scheme in both above cases denied the extended benefits of the scheme to over 56 lakh students leading to non availment of GOI assistance of Rs 58.26 crore during the above periods.

3.1.5.4 Provision for condiment, vegetable and fuel

Expenditure of Rs 14.37 crore incurred for procurement and utilisation of condiments at the school points was not verifiable in absence of records

In all the test checked schools it was seen that the school heads incurred initial expenditure towards provision of condiments, vegetables and fuel from their own sources and got reimbursed from the respective blocks after submission of monthly progress reports with delay ranging from two to 46 months in Bolangir district and 11 Blocks in Bargargh, Mayurbhanj, Sonepur and Sundargarh districts. In absence of required imprest money, 52 test checked schools did not provide MDM on an average of seven days in a year. None of the 132 schools test checked in audit maintained cash book, supporting vouchers and other related records in proof of purchase of condiment, vegetables etc. to provide wholesome meals to the beneficiaries, in absence of which actual utilisation of Rs 14.37 crore paid during 2003-08 was not verifiable.

Interview of 652 students in the audited schools revealed that weekly two eggs were given to only 36 *per cent* students and 45 *per cent* of students complained about the poor taste and single menu; 16 p*er cent* of students stated that the quantity of MDM was insufficient. Children in urban schools of Ganjam district belonging to affluent parents expressed their unwillingness in writing to take MDM. Joint surprise visit by audit and departmental officers to two schools in Baragarh district showed that only 93 students out of 321 present on that day took the meal. The Heads of the schools stated that most of the students were reluctant to take food due to the same monotonous menu being served on all days. Eighty two *per cent* of the parents interviewed, stated that quality of the MDM should be improved with varied menu to attract students. Surprise visit to eight schools[17] in three districts showed that the students were taking only rice and dal. No vegetable were served to them.

3.1.5.5 Provision of eggs in the menu

Under the scheme, cooking cost per beneficiary per school day was fixed at Rs 1.58 (July 2005), Rs 1.64 (October 2005) and Rs 2.14 (September 2006) for meeting expenses on dal, vegetables, oil, condiments, fuel and supervision charges etc. For maintaining uniformity in expenditure on different items with in the cooking cost across the State, the State Government fixed sums to be spent on these items per day / beneficiary from time to time.

It was observed that cooked meal was served daily with same items like rice and a preparation of dal often mixed with vegetables. From October 2005, one

[17] Baragarh district - 1. Khajuritikira UPS, 2.Kushanpuri GPS, 3.Nuapali GPS 4.Hindi Boys school Sundargarh district - 1. Telendihi MPS, 2. Giringkela UPS Bolangir district: 1. Project Schools, College Chhak and 2. Bijakhamand PS, Bolangir

egg was added to weekly menu by allocating 35 paise per day / beneficiary for procurement of one egg at rupees two. This was enhanced to two eggs from November 2006 with allocation of 76 paise per day / beneficiary by which time the cooking cost was raised by only 56 paise. As the suppliers in many places were not willing to supply eggs at the above cost, the same was revised (December 2007) to Rs 2.28 per egg. To accommodate the cost of egg within the cooking cost, allocation on other items like vegetables, condiments and dal were curtailed by 10 to 50 *per cent* per beneficiary / day. However, the State Government did not consider providing any additional financial input to keep allocations against other essential items intact.

Huge savings on egg component denied the desired nutritional value to the beneficiaries

It was seen that in 16 districts, out of the total provision of Rs 65.60 crore made for supply of eggs during 2005-08, only Rs 20.03 crore was spent (31 *per cent*) and Rs 45.57 crore remained unspent with the DSWOs concerned as of March 2008. In the eight[18] schools visited by audit during MDM hours, it was seen that children were taking only cooked rice as adequate dal was not made available.

Students taking MDM without dal in Telendihi Misson School

Thus, the unrealistic fixation of procurement price of eggs hindered the supply of eggs between October 2005 and December 2007 and the Government failed to ensure provision of intended calories and protein in MDM during the period.

In Kalahandi district, the suppliers did not come forward even after increase in the cost of egg to Rs 2.28 due to non-availability of required quantity in the district and hike in cost price of egg. Consequently, the Government ordered (March 2008) to utilise the unspent balance of the egg component by supplying soya chunk to students to overcome the nutritional deficiencies. This order was yet to be implemented (April 2008).

The DSWOs of 10 districts stated that due to low price of eggs fixed by Government and unwillingness of suppliers to supply at such rate, eggs could not be provided as per the above norm. The department stated (June 2008) that the sources of egg supply in the State were insufficient to cater to the total requirement.

No primary school student in the State was given micro nutrient and de-worming tablets

3.1.5.6 Micronutrient supplementation and de-worming administration

The MDM programme also envisaged for appropriate health interventions such as administration of micronutrients of iron and folic acid supplementation

[18] Baragarh district - 1. Khajuritikira UPS, 2. Kushanpuri GPS, 3. Nuapali GPS and 4. Hindi Boys school Sundargarh district – 1. Telendihi MPS, and 2. Giringkela UPS, Bolangir district: 1. Project Schools, College Chhak and 2.Bijakhamand PS, Bolangir.

weekly and six monthly doses of medicines for de-worming. However, nowhere in the State had the micronutrients and de-worming medicines been given to school children during the period covered in audit.

3.1.5.7 Loss of teaching hours

Teachers in the test checked schools were spending 40 *per cent* of teaching hours in a week in MDM activities

The scheme stipulated that the MDM activities should not adversely affect either the duration or quality of teaching and learning schedule in schools and should be so organised that the entire process of serving and consumption of the meal would not take more than the scheduled lunch break of 30 minutes. It was seen in the test checked schools with one or two teachers that out of 29 hours of teaching hours prescribed for a week, the teachers were engaged in MDM activities on an average of 12 hours (40 *per cent*) i.e. (i) six hours for receipt, weighing and maintenance of records, (ii) three hours for procurement of vegetables and condiments etc. and (iii) three hours for supervision of cooking and serving of meals. The State Government stated that the MDM activities in 32553 schools (50 *per cent*) out of total 65528 schools had been handed over to women self help groups (WSHGs) by the end of 2007-08.

3.1.5.8 Community participation

Mother teacher associations were not actively participating in MDM activities in schools

It was obligatory for the parents to know about the MDM which was being served to their children. At the school level, mother teacher association (MTA) was to be assigned responsibility for implementation and supervision of the programme. Interview in audit revealed that only 12 *per cent* of mothers had visited the school during MDM hour and tasted the food. This showed poor efforts of the school administration to associate mothers in MTA.

3.1.5.9 Non-adherence to Right to Information Act

In compliance with the Right to Information Act, the WCD department directed (October 2006) all the DSWOs to ensure that the schools and EGS centres were to display information on monthly basis on quantity of food grains received with date of receipt, quantity of food grains utilised, other ingredients purchased, utilised; number of children given MDM, daily menu, member of MTA, names of the president and secretary of WSHGs etc. The DSWOs in turn directed all BDOs to ensure compliance. But in none of the audited schools such display was noticed.

3.1.6 Impact of the scheme

One of the primary objectives of the scheme was to improve enrolment, attendance of children as well as reducing the drop-out rate in school besides improving the nutritional and health status of students. The State Government did not evolve any mechanism to assess and evaluate the overall impact of the scheme on the above objectives. Analysis of the enrolment and attendance figures for the five year period ending March 2008 indicated the following:

3.1.6.1 Enrolment

It was seen in the audited schools in the test checked districts of Baragarh, Cuttack, Khurda and Sonepur that the enrolment of students gradually decreased over the period covered in audit in contrast to the remaining three districts, namely Bolangir, Ganjam and Sundargarh where it varied all along vide ***Appendix - 3.4.*** Considering increase in reporting of enrolment by the State to GOI (2004-07), the declining trend of enrolment in test checked districts showed that the scheme did not contribute to increase in enrolment of children.

3.1.6.2 Attendance

Considering the utilisation of cooking cost provided by the GOI at the rate of 50 paise per student per day from January to June 2005, rupee one from July 2005 and Rs 1.50 from July 2006 onwards, on a daily average 37.34 lakh beneficiaries availed of MDM during January 2005 to March 2008. The attendance rate of students thus worked out to an average of 77 *per cent* of the enrolment during 2005-08, while the average attendance rates of students reported to GOI for the year 2005-06 and 2006-07 were 87.81 and 79.91 *per cent* respectively.

3.1.6.3 Health status of students

In none of the schools periodical health check up including measurement of the height and weight of students was taken up to assess their health status. It was noticed in the test checked districts that the schools were not even supplied with weighing machines except Mayurbhanj district. No mechanism was in place to measure improvement in health status of the children after introduction of MDM.

3.1.6.4 Observance of hygiene during cooking and serving

Children falling sick after consuming MDM

Instances of children taken ill after consuming MDM were reported. As per records, 85 children[19] in three instances became sick after consuming MDM during January 2005 and February 2006. The DSWO, Mayurbhanj stated that 14 students complained of abdominal discomfort and were hospitalised after consuming rotten eggs in Batapandugandi primary school under Jashipur Block (August 2007). Eight *per cent* of the beneficiaries interviewed by audit, stated that they developed

Children in Telendihi Misson PS taking MDM on road under unhygienic condition

[19] (i) 39 students of Laxmannath Primary School, Jaleswar in Balsore distict on 27 January 2005 as the cook added ammonia sulphate to the dal with the impression that it was salt, (ii) 27 students of Kendupalli Rout Bhuin Primary School of Narasinghpur Block in Cuttack district on 11 January 2005 due to food poisoning and (iii) 19 students of Madhupur UGME School, Baranga, Cuttack on 14 February 2006 as they were served staled soaked rice (pakhala) that caused food poisoning.

complaints like nausea and vomiting, loose motion etc. after consuming MDM. The WCD department in their circular (March 2008) advised Collectors to take remedial measures to avoid serving of stale / contaminated food and soaked rice. These instances were indicative of the fact that hygienic aspect of MDM was not being given proper attention.

3.1.7 Management, Monitoring and Evaluation

3.1.7.1 Poor spending under management, monitoring and evaluation

The scheme provided for grant of central assistance at a rate of 0.9 *per cent* of the total assistance under food grains, transportation cost and cooking cost towards expenditure on Management, Monitoring and Evaluation (MME) for the year 2004-05. This was increased to 1.8 *per cent* of such assistance from 2005-06. The assistance was to be utilised for (a) school level expenses, (b) Management, supervision, training and internal monitoring and evaluation and (c) external monitoring and evaluation. GOI assistance of Rs 7.13 crore was received during 2004-08 under MME including Rs 93.06 lakh for external evaluation, of which only Rs 16.52 lakh was given (March 2006) to the State Council for Educational Research and Training (SCERT) for an internal assessment of the scheme. However, no funds were utilised towards independent external evaluation of the scheme (May 2008) to assess the outcome of the programme.

3.1.7.2 Evaluation study not followed up

SCERT conducted (2006-07) an evaluation study of the scheme. The interim report revealed the following deficiencies / shortcomings:

- Dal and eggs were made available to students in about half of the schools,
- Children expressed dissatisfaction with quality and poor taste of MDM,
- Student strength in schools reduce noticeably after the MDM is over,
- Monthly supervision by doctors / health workers is weak,
- Lack of participation of community members for preparation and distribution of MDM,
- Lack of Block / District level monitoring and supervision in about 40 *per cent* of the schools.

The above findings of the SCERT were yet to be addressed by Government (July 2008).

3.1.7.3 Shortfall in supervision and inspections

The GOI also required the State to draw up inspection programme which would cover 25 *per cent* of the primary schools on an average in a quarter. As

Monitoring of programme implementation through supervision and inspection were ignored at different levels

per State Government instructions (July 2005), two, five and 10 *per cent* of the schools were to be supervised by the District level, Sub-division level and Block level officials respectively in each month and all the blocks covered within a period of two months and all the schools in each quarter. Besides, the BDOs were to arrange inspection of at least two schools every month and all ICDS supervisors and statistical assistants were to inspect at least five schools every month by drawing a calendar of inspection ensuring even coverage of inspection. However, no such supervision and inspection were conducted by concerned officials in all the test checked districts. While the DSWOs, Sonepur, Bolangir, Khurda and Sundargarh stated that due to lack of man power and vehicle, the percentage of inspection could not be achieved, the DSWOs, Bargarh, Cuttack and Ganjam stated that action was being taken in the annual action plans for providing supervision of MDM Schools.

3.1.7.4 Non formation of steering committee

Steering cum monitoring committees were either not formed or were not holding meetings wherever these were formed

The programme provided (September 2004) formation of Steering-cum-Monitoring Committee (SMC) at State, District and Block levels for effective monitoring of the scheme. The WCD Department stated that only two meetings of the State Monitoring Committee (SMC) were held during 2004-08 against prescribed two half yearly meetings. In the seven test checked districts, it was seen that district level steering-cum-monitoring committees were formed in six districts except Sonepur district. However, in two districts (Sundergarh and Bolangir), the committee had not even sat for its debut meeting. Block level steering-cum-monitoring committees were formed only in Ganjam district. Four quarterly meetings of the steering cum monitoring committee at the district and Block levels were to be held in a year. The nodal department did not have any information on any such meeting being held during 2004-08. The DSWOs of other districts stated to be initiating action in this regard.

3.1.7.5 Non preparation of progress reports

Lower functionaries like DSWOs and BDOs were not furnishing monthly and quarterly progress reports regularly to the department. These reports, wherever received, were never analysed at the State level for assurance and remedial measures, if required. Thus, absence of monitoring had led to many failures in implementation of the programme as commented in this report.

3.1.7.6 Vacancies in field formations

It was seen that there were vacancies of programme implementing staff ranged from 37 to 62 *per cent* of sanctioned strength of SEOs, SSWOs and ADSWOs in the block, sub-division and district levels in the State as below affecting monitoring and supervision of the implementation of the scheme.

	2006-07				2007-08			
Category of post	Sanctioned strength	In position	Vacancy position	Percentage of vacancy	Sanctioned strength	In position	Vacancy position	Percentage of vacancy
SEO/LSEO	346	218	128	37	346	211	135	39
SSWO	57	36	21	37	57	36	21	37
ADSWO	13	5	8	62	13	5	8	62

3.1.7.7 Management Information system

MIS was not in existence in the test checked districts

The scheme provided for development of a computerised management information system (MIS) for proper monitoring of the performance by the department implementing the scheme in consultation with the National Informatics Centre (NIC). It was noticed that the system was not in operation/existence in any of the test checked districts. Thus, adequate attention has not been given by the State Government to effectively monitor the programme through the MIS.

3.1.8 Conclusion

Performance audit of implementation of the MDM programme in the State revealed several deficiencies. Absence of mechanism to cross verify enrolment data received from schools led to over-reporting of data during 2004-07 and excess indenting of food grains and funds. The transportation and delivery of food grains at school points was not monitored by the various functionaries at district and block levels leading to delayed, short delivery and misappropriation of rice besides admitting excess claims of transportation charges. The construction of kitchen-cum-stores remained incomplete for over two years due to less provision of funds and implementation of smokeless chullahs was absent affecting the appropriate storage and safety of food grains and maintenance of hygienic condition of cooking and serving of MDM. In spite of availability of material and monetary resources MDM served could not reach the targeted school days. Provision of monotonous menu dissuaded the students on taking MDM. Involvement of teachers executing the programme reduced teaching hours and the implementation lacked the intended community participation. The important objectives of periodical health checkups, nutritional supplementation and supply of tablets for de-worming were neglected. The internal control mechanism was slack as required supervision through inspections by the officials at the State, district and block levels was not done which resulted in excess and avoidable extra expenditure in number of cases. Evaluation of the scheme as a whole was not done and as such the impact of the scheme remained unassessed.

3.1.9 Recommendations

- Loopholes in the transportation contracts may be plugged.
- Steps for strengthening of infrastructure with adequate provision of kitchen-cum-store, supply of LPG for cooking and placement of inspection staff in coordination with the officials of School and Mass Education Department may be considered.
- The provision of periodical de-worming, micronutrient supplementation like iron and folic acid tablets, health services and nutritional education may be converged with school health programme under the National Rural Health Mission.
- The implementation of MDM may be fully off loaded from the teachers so that the teachers would get full time for teaching activities.

- Imprest may be provided to implementing agencies for advance planning of procurement of condiments, vegetables and diversified menu etc.
- A moderate amount of additional input may be considered to enhance the quality of MDM.
- Functioning of monitoring system may be made effective. Convening of the SMCs be made regular and decisions taken in the SMCs be implemented at the field level.

WATER RESOURCES DEPARTMENT

3.2 Rengali Irrigation Project

Highlights

The Rengali Irrigation Project was taken up for execution in 1980-81 at an estimated cost of Rs.233.64 crore for providing irrigation to 2.36 lakh ha of cultivable command area (CCA) by March 1991 through the Left Bank Canal (LBC–141 km) and Right Bank Canal (RBC–112 km). As of May 2008, excavation of the LBC and RBC was restricted to 71 km and 79 km respectively with irrigation potential of only 0.58 lakh ha. The project remained incomplete in haphazard shape despite investment of Rs 1695.61 crore as of March 2008. There were significant lapses in planning and execution of the project rendering techno economic viability of the project doubtful.

- **The project scheduled for completion by March 1991 at Rs 233.64 crore remained incomplete (March 2008) despite investment of Rs 1695.61 crore. Trial irrigation was provided to only 0.09 lakh ha of CCA against the designed ayacut of 2.36 lakh ha (four *per cent*). Techno-economic viability of the project was not reassessed.**

(Paragraph 3.2.6 and 3.2.11)

- **Excavated canals were severely damaged due to non-provision of protective measures suggested by GSI rendering the expenditure of Rs 103.46 crore on canal excavation unfruitful apart from extra liability of Rs 79.93 crore due to poor planning.**

(Paragraph 3.2.7.2 and 3.2.7.3)

- **Time over-run due to delay in acquisition of land, approval of drawings/designs and poor contract management resulted in cost over run of Rs 31.78 crore.**

(Paragraph 3.2.9.1 and 3.2.9.2)

- **RBC from 58.68 to 60.08 km constructed between 1998 and 2006 at a cost of Rs 17.11 crore was severely damaged. TAC expressed apprehension regarding stability of the canal due to critical configuration of the alignment.**

(Paragraph 3.2.9.3)

- **Excess payment of Rs 0.87 crore was made to two contractors by recording inflated measurements.**

(Paragraph 3.2.9.9)

3.2.1 Introduction

The Planning Commission (PC) conveyed (March 1978) acceptance to the proposal for construction of Rengali Irrigation Project (RIP) at Samal on river Brahmani at an estimated cost of Rs 233.64 crore to provide irrigation to 2.36 lakh ha CCA in the drought-prone areas of Dhenkanal and Keonjhar districts.

* Abbreviations used in this performance review have been expanded in Glossary of abbreviations at pages 234 to 238

The project envisaged construction of head works (Barrage), LBC for 141 km and RBC for 112 km and was stipulated for completion by 1991. The map of the project is given in the ***Appendix - 3.5***.

3.2.2 Organisational set up

The project was being implemented by three Chief Engineers (CEs) separately for the Head Works/LBC, RBC and Designs who were responsible to the Engineer-in-Chief (EIC) and the Government. The CEs were assisted by 20 Executive Engineers (EEs) under the supervision of four Superintending Engineers (SEs).

3.2.3 Audit objectives

A performance audit of the project was conducted with the following objectives whether:

- Project planning and policy formulation was effectively and efficiently done;
- Financial controls were in place and effective;
- Project implementation (component-wise) was efficient to avoid cost and time over-run;
- Contract management was effective and quality control measures ensured at all stages of execution;
- Monitoring and evaluation system was in place and adequate.

3.2.4 Audit criteria

The audit criteria considered for the performance audit were as follows:

- Acceptance/clearance accorded by the Central Water Commission and Planning Commission.
- Project report, sanctioned estimates/revised estimates.
- Project Appraisal Reports submitted to Government / funding agencies,
- Inspection Reports of higher authorities/consultants, proceedings of review meetings, proceedings of tender committees, quality control reports and GSI inspection reports.

3.2.5 Audit coverage and methodology

Mention was made in para 4.1 of the Comptroller and Auditor General of India's Report for the year ended 31 March 2000 regarding non-completion of the Rengali Irrigation Project, non-accrual of intended benefits and widespread mismanagement in payment to contractors particularly with reference to construction of the project up to the head works (barrage). The Report had not been discussed in the Public Accounts Committee (PAC) as of August 2008.

As the project remained incomplete for 28 years a performance audit on its implementation was carried out between December 2007 and May 2008 covering the construction activities of the LBC and RBC during the period from 2003-08 through test check of records in the Department of Water Resources, Offices of the EIC, CEs, Financial Advisor and Chief Accounts Officer (FA&CAO) and 10[1] out of 20 EEs selected on the basis of volume of works executed vis-à-vis expenditure incurred. Records relating to earlier periods were also checked wherever considered necessary. Joint physical inspection of some work sites by audit along with departmental officers was done. The entry conference was held with the Principal Secretary, Department of Water Resources in April 2008 and the exit conference was held in September 2008.

Audit findings

3.2.6 Project planning

Revised estimate of the project was not prepared and the techno-economic viability of the project was not assessed

The Department was required to conduct comprehensive pre-construction survey and investigation and plan the execution of the project systematically so that basic requirements such as land acquisition, forest and environmental clearance, ayacut planning etc. were fulfilled and coordination with other agencies achieved to ensure smooth and timely completion of the project. This was however not done as discussed in Para 3.2.7.

The PC, while conveying acceptance (March 1978) to the original project report, observed that the cost of the project for Rs 233.64 crore was very high and suggested constitution of a committee under the chairmanship of the Member (Planning & Projects) of Central Water Commission (CWC) to examine the various aspects of the project. This was not done. The CE submitted a revised estimate (July 1986) for Rs 707.39 crore to the Government after detailed investigation, which was not also sanctioned (May 2008).

There was time over-run of 18 years in completion of the project which contributed to cost over-run of Rs 1461.97 crore (626 *per cent*)

The original project report (1979) had projected the Benefit Cost Ratio (BCR) as 3.58 which declined to 1.51 (against the minimum norm of 1.50) as per the revised estimate of July 1986. The revised estimate for the project as a whole was not prepared as a result of which the techno-economic viability of the project could not be assessed despite instructions from the CWC way back in October 1996. The works were thus executed in a piecemeal manner without analysing and assessing their impact on the whole project. In the process, there was time over run of over 17 years and the cost over-run (Rs 1461.97 crore) was as high as 6.26 times of the original estimate.

Government stated (September 2008) that in the past estimates were prepared for the sections taken up in stages. The revised estimate for the RBC had been approved (February 2008) by the Technical Advisory Committee (TAC) of CWC and that of the LBC was under preparation.

[1] OECF Division No. I, II, III, IV, Head Works Division, Rengali Right Canal Divisions No. I, II, III, IV and Sapua Badjore Irrigation Division.

3.2.7 Project implementation

3.2.7.1 Physical targets and achievements

The targets and achievements in execution of different components of the project as of March 2008 were as under:

Component	Original target/date of completion	Revised target date for completion	Date of comple-tion	Expendi ture (Rs. in crore)	Designed potential (in lakh hectares)	Physical progress (in *per cent)*	Potential created as of March 2008 (in lakh hectares)	Irrigation provided as of March 2008
Head works	March 1991	-	1995	474.10	-	100	-	-
LBC-I (00 to 29.17 km)	March 1991	-	2004		0.08	100	0.08	Only trial irrigation provided. Joint ayacut verification with revenue authorities not done.
LBC-II Phase-I (29.17 to 71 km)	March 1991	March 2001	Incompl ete	752.24	0.29	77	Nil	Nil
LBC-II (Phase-II) (71.00 to 141 km)	March 1991	March 2005	Not taken up	Nil	0.78	0	Nil	Nil
RBC-Phase-I (00 to 79 km)	March 1991	March 2001	Incompl ete	467.32	0.21	37	0.01	Only trial irrigation provided in 2007.
RBC-II Phase-II (79 to 112 km)	March 1991	March 2005	Not taken up	Nil	1.00	0	Nil	Nil

Source: Progress Report of LBC/RBC and records of CE

The Government administratively approved (1979/1981) construction of head works (barrage) and the LBC for 141 km at a cost of Rs 164 crore and the RBC for 112 km at a cost of Rs 69.64 crore. The construction activities were, however, restricted to 71 km of the LBC and 79 km of the RBC with a total designed ayacut of 0.58 lakh ha.

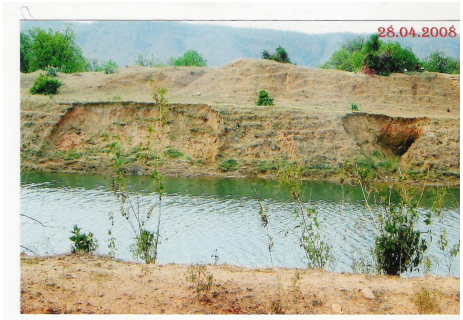
Left Bank Canal - The barrage and the LBC-I for 29 km were completed in March 2005 with expenditure of Rs 474.10 crore under State Plan (Rs 223.14 crore) and loan from World Bank Water Resources Consolidation Project (WRCP-Rs 250.96 crore) with creation of irrigation potential of 0.08 lakh ha. PC conveyed acceptance (July 1997) to the revised estimate of the LBC-II (29 to 141 km) for Rs 705.15 crore stipulating completion by March 2005. Work from 29 to 71 km was taken up (December 1997) with loan assistance (Tranche-I) of Rs 227 crore from Japan Bank of International Cooperation (JBIC) for completion by March 2001 to provide irrigation to CCA of 0.29 lakh ha. This portion, however, remained incomplete despite expenditure of Rs 752.24 crore as of March 2008.

Right Bank Canal - No tangible work had been executed for the RBC till 1995-96. With a view to providing irrigation to 0.21 lakh ha of CCA within four years, Government of India (GOI) approved (February 1997) execution of RBC for 79 km under Accelerated Irrigation Benefit Programme (AIBP) with loan assistance of Rs 208.16 crore stipulating completion by February 2001. Excavation of the main canal of RBC in this reach was nearing completion

except for the gaps for railway/road crossings at three sections. (23.01 km, 28.51 km and 34.61 km). Excavation of the branch canals, minors and sub-minors was only 23 *per cent* as of March 2008.

3.2.7.2 Excavation work on Left Bank Canal (LBC)

Out of 56 packages costing Rs 951.18 crore approved for execution in LBC upto 71 km, 14 packages costing Rs 146.26 crore were completed, 34 packages were under progress while eight packages had not been taken up as of March 2008.



(Damaged canal embankment at RD 8.00 km to 8.04 km due to absence of CC lining)

In the original project proposal the LBC was proposed to be a fully lined canal to avoid damage and slope failure. The barrage and excavation of the head reach of LBC for 29 km which commenced in 1980-81 was reported as completed in 2005 at a cost of Rs 474.10 crore. The canal was, however, neither excavated to the designed section nor were the slopes protected with CC lining leading to severe damages in several reaches.

Excavated canals were severely damaged due to non-provision of protective measures suggested by GSI rendering expenditure of Rs 103.46 crore on canal excavation unfruitful

The CC lining along with construction of service roads on the canal embankments from 00 to 23 km was awarded (July 2001) to a contractor by the CE under two agreements at a cost of Rs 13.06 crore for completion by January 2003. The service roads were executed for Rs 1.72 crore but the CC lining works could not be executed due to non-execution of the canal to the designed section. As a result, the contracts were closed in January 2005. In none of the packages, the CC lining was provided and the canal excavated in haphazard manner was exposed to weather conditions. Geological Survey of India (GSI) suggested (March 2003/June 2004) immediate slope protection measures for arresting further deterioration of the canal slopes.


(Bank sliding at RD 34.10 to 34.20 km of LBC)


(Bank sliding at RD 33.57 to 33.67km)

The CE submitted (December 2007) an estimate amounting to Rs 101.15 crore for lining of the LBC from 00 to 29 km, which was not sanctioned as of April 2008. Computed at the estimated cost (December 2007), non-execution of CC lining as per agreement resulted in an extra

liability of Rs 79.93 crore.

Audit observed during visit (January 2008 to March 2008) to the sites along with the Engineers in charge that no slope protection measures were undertaken and the slopes and berms of the canal embankments from 33 to 35.50 km and 55.50 to 71.31 km were badly damaged. There was land sliding with depressions upto seven metres which was not reported to the higher authorities.

Due to non-rectification of the damages and non-completion of the work, the expenditure of Rs 86.91 crore incurred on the LBC in these stretches remained unfruitful. Government stated (September 2008) that the canals could not be excavated to the designed section as per agreement due to public hindrances and suitable measures to protect the canal would be taken in consultation with TAC. It was further stated that the expenditure was not unfruitful since the project had successfully supplied water to 0.12 lakh ha of CCA. The reply was not factually correct as no water had been supplied in the LBC beyond 29 km.

3.2.7.3 Excavation work on Right Bank Canal (RBC)

Excavation of the RBC from 30.36 to 39.71 km in truncated section was awarded (December 1997) to a contractor for Rs 12.07 crore. The contractor completed the work in November 2003 with payment of Rs 11.93 crore. The balance work in full designed section was allotted (December 2003) to Orissa Construction Corporation (OCC) for Rs 5 crore (including overhead charges) for completion by October 2004 which was extended up to June 2006. The work remained incomplete as of May 2008 with payment of Rs 4.62 crore to OCC. The canal slopes and banks, however, slipped and failed at various locations. The problem was discussed in the TAC meeting (April 2007) wherein it was recommended that lining should be provided in patches wherever required from 26 to 34 km. It was however, suggested that one or two patches should be taken up on a trial basis before the rainy season and if these functioned properly the balance of the reaches should be done. No such trial patch had been executed as of May 2008.

(Failure of slope and slippage of embankments at RD 31.55 to 34.24 km of RBC)

Thus, the RBC from 30.36 to 39.71 km taken up in December 1997 remained incomplete and in damaged condition with slope failures rendering the

expenditure of Rs 16.55 crore unfruitful. The Government while accepting the factual position stated (September 2008) that an agreement had been drawn up for doing gabion lining on trial basis.

3.2.7.4 Delay in acquisition of land

Despite posting of two Special Land Acquisition and Rehabilitation Officers with supporting staff for the project, acquisition of land was considerably delayed which resulted in time and cost over run. Against 2928.67 ha of private land required for Phase-I of LBC and RBC of the project, 128.23 ha was not acquired as of March 2008. Out of 2107 ha of forest land involved in execution of work for Phase-I of LBC, stage-II forest clearance was obtained for only 812 ha as of March 2008. As a result of delay in obtaining forest land clearance, works in LBC in six packages[2] involving 68 ha of forest land were delayed for periods ranging upto eight years.

3.2.8 Financial Management

The budget provisions vis-à-vis actual expenditure on the project were as follows:

(Rupees in crore)

Year	Budget provision			Expenditure			Savings (percentage)
	Headworks & LBC	RBC	Total	Headworks & LBC	RBC	Total	
Upto 2002-03	1114.25	307.98	1422.23	802.04	290.38	1092.42	329.81 (23.18)
2003-04	64.65	31.73	96.38	59.71	26.59	86.30	10.08 (9.72)
2004-05	72.99	39.18	112.17	61.82	34.33	96.15	16.02 (17.97)
2005-06	64.42	36.00	100.42	60.55	33.37	93.92	6.50 (6.53)
2006-07	70.69	38.80	109.49	65.75	27.07	92.82	16.67 (18.25)
2007-08	187.57	58.68	246.25	178.42	55.58	234.00	12.25 (30.17)
Total 2003-08	460.32	204.39	664.71	426.25	176.94	603.19	61.52 (9.26)
Grand total	**1574.57**	**512.37**	**2086.94**	**1228.29**	**467.32**	**1695.61**	**391.33 (18.75)**

3.2.8.1 Surrender of funds

Funds for Rs 28.67 crore were surrendered due to non-utilisation

It was noticed that due to non-finalisation/delay in finalisation of tenders and land acquisition cases, out of the total provision of Rs 242.55 crore during 2003-08 for the major works and land acquisition of the LBC, an amount of Rs 28.67 crore could not be utilised and was surrendered.

3.2.8.2 Payment of unauthorised advance to LAO

Without sanction of estimate, LAO was paid advance of Rs 2.07 crore at the fag end of financial year to avoid lapse of allotment.
CC vouchers for Rs 15.18 crore were not furnished by the LAOs

As per Rule 3.6.4 of Orissa Public Works Department Code, payment of advance to the Special Land Acquisition Officer (LAO) for disbursement of compensation to the land owners was to be made only after sanction of the estimate by the Government. It was however noticed that an amount of Rs 2.07 crore was advanced (March 2008) to the LAO, Talcher without sanction of any estimate to avoid lapse of allotment and letter of credit. The CE instructed (May 2008) the LAO to regularise the payment by obtaining

2 Package No. 17- 4 ha for the reach of RD 55.18-55.48 km, Package No. 18-6 ha for the reach of RD 55.50-56.54 km, Package No. 11(A)- 21 ha for the reach of RD 0-0.75 and 2.49-5.91 km, Package No. 11(B)- 24 ha for the reach of RD 11.83-18.00 km , Package No. 11(C) -6 ha for the reach of RD 18.80-19.79 km, Package No. 11(D)- 7 ha for the reach of RD 30.73-31.96 km

sanction to the estimate from the Government. This was not regularised as of May 2008.

Out of the total advance of Rs 61.19 crore paid to the LAOs, Dhenkanal and Talcher between 1998 and 2008 for payment of land acquisition charges and rehabilitation assistance, the LAOs did not furnish accounts for Rs 15.18 crore as of March 2008. Government stated (September 2008) that necessary steps were being taken to render the accounts during 2008-09.

3.2.8.3 Excess establishment expenditure

Of the total expenditure of Rs 603.19 crore incurred during 2003-08, the expenditure on establishment was Rs 77.13 crore which worked out to 14.66 *per cent* of the works expenditure (Rs 526.06 crore) as against 10.5 *per cent* admissible. This resulted in excess expenditure of Rs 21.89 crore on establishment beyond the norms. For survey and investigation of the RBC from 79 to 95 km, two divisions[3] were functioning since August 2001. The establishment expenditure of these two divisions was Rs 5.41 crore against works expenditure of Rs 0.65 crore. Thus, continuance of these divisions without workload resulted in nugatory expenditure of Rs 5.41 crore.

3.2.9 Execution of works

Test check of records relating to execution of the project works disclosed several instances of undue benefit to contractors and extra avoidable expenditure as discussed in the succeeding paragraphs.

3.2.9.1 Extra cost due to delay in acquisition of land

Failure to provide obstruction free land and approved drawings/designs to the contractors in time led to cost over-run of Rs 18.83 crore

Excavation of distributaries/branch canals in four reaches[4] was awarded (October 1998-February 2000) to four contractors at a total cost of Rs 19.58 crore for completion between August 1999 and July 2001. The contractors after executing works for Rs 8.11 crore stopped further execution (March/June 2004) due to non-handing over of obstruction free land/non-receipt of forest land clearance/non-supply of drawings/designs. The contracts were closed (March 2003-May 2007) by Government. The balance of the works for Rs 11.47 crore with additional items of works were awarded (March 2003-January 2008) on retender to other contractors/OCC at a total cost of Rs 26.87 crore which involved extra cost of Rs 9.53 crore relating to items of works as per original agreements. The works were under execution (May 2008). Government stated (September 2008) that in most of the cases although possession of land was given, the dues of the land owners had been retained under revenue deposit. Due to non-payment of their dues the land owners created hindrances during execution.

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3 RRC Division No V & VI

4 (i) Distributaries, minors and subminors including head regulator and structures from RD 00 to 22.10 km of RBC, (ii) Bhairpur branch canal with all structures from RD 00 to 9 km of LBC, (iii) Kharprasad branch canal of RBC and (iv) Padiabanga, Balipadpur and Lingarkata distributaries of RBC.

Similarly, there was avoidable payment of escalation charges of Rs 9.30 crore for the extension of time granted for the construction of RBC from 63.15 to 66.25 km and LBC from 47.50 to 50.50 km. The extension of time was granted due to delay in acquisition of land and finalisation of designs. Government accepted (September 2008) the factual position.

3.2.9.2 Non-recovery of penalty from defaulting contractor

Extra cost of Rs 12.95 crore involved on execution of the balance works not recovered from the defaulting contractor

A contractor of two works viz: LBC from 33 to 35.5 km and 35.5 to 38.5 km with aggregate contract value of Rs 33.27 crore (increased to Rs 38.60 crore as per actual work involved) defaulted in execution and stopped (May 2007) the works after receiving payment for Rs 33.75 crore. Government closed (September 2007) the contracts with levy of penalty. The balance of the works for Rs 4.85 crore were allotted (January 2008) to OCC at a total cost of Rs 17.80 crore involving extra cost of Rs 12.95 crore with stipulation for completion by November 2008/September 2009. The works were under execution with payment of Rs 11 crore to OCC as of May 2008. The extra cost was not realised from the defaulting contractor as of May 2008. During the suspended period of the work of the reach from 35.50 to 38.50 km, the excavated area was filled in with water, slush and muck, the removal of which was entrusted to OCC involving an extra liability of Rs 0.21 crore. Government stated (September 2008) that action would be taken to recover the penalty from the contractor.

3.2.9.3 Sub-standard execution of works

Substandard execution of works in canal siphon resulted in unfruitful expenditure of Rs 17.11 crore

The work of RBC from 58.68 to 60.08 km with structures was awarded (October 1998) to a contractor for Rs 10.82 crore for completion by October 1999. The value of the work was increased (January 2002) to Rs 14.01 crore and the contractor after executing the work valuing Rs 10.54 crore stopped the work. To ensure completion of the work and provide irrigation by June 2003, Government closed (April 2002) the agreement and allotted (March 2003) the balance of the work to OCC for Rs 5.86 crore for completion by January 2004. The work remained incomplete with payment of Rs 6.57 crore to OCC as of May 2008.

(Damaged canal embankments at RD 59.79 to 59.81 km of RBC)

The canal siphon located at 59.73 km, the design/drawing of which was approved (May 1999) by the EIC (Civil), was constructed between 1998 and 2006. The canal crosses National Highway No. 42 (NH) in this reach. Although water supply was not commenced in the canal, rain water accumulated (September 2007)

in the canal siphon and was spurting out at two locations. The CE inspecting (September 2007) the site observed that water under pressure in the siphon barrel had found a route through holes in the slab and could endanger the slab structure during supply of canal water at full supply level. Though the problem was discussed thrice (May 2003, April 2007 and November 2007) in the TAC, no remedial action was taken as of May 2008.

Thus, non-completion of the canal in the above reach and substandard execution of the siphon not only resulted in huge damages but also rendered the expenditure of Rs 17.11 crore unfruitful posing uncertainty in supply of water beyond the 58th km of the RBC. Government stated (September 2008) that remedial measures were under consideration by a Technical Committee formed in July 2008.

3.2.9.4 Non-levy of liquidated damages on OCC and blockage of fund

18 works awarded to OCC during 2003-2008 for completion between January 2004 and March 2008 remained incomplete and work advance of Rs 40.76 crore remained unadjusted

Government allotted 18 works of the project between March 2003 and March 2008 to OCC at a cost of Rs 87.37 crore stipulating completion between January 2004 and March 2008. All these works remained incomplete as of May 2008 due to default in execution by OCC and no further extension was granted to them. Despite that liquidated damage of Rs 8.74 crore was not levied on the Corporation. Further, four more works were allotted during 2007-08 at a cost of Rs 27.67 crore. Out of the total interest free advance of Rs 70.14 crore paid to the Corporation between 2003 and 2008, Rs 29.38 crore was adjusted in the on account bills leaving Rs 40.76 crore unrecovered as of May 2008.

3.2.9.5 Non-completion of excavation despite full execution

Joint physical inspection of site disclosed that a substantial portion of the rock strata from 12.28 to 15.96 km of LBC remained unexcavated

Excavation of LBC from 10.00 to 17.60 km (balance of work) was awarded (June 1997) to a contractor for Rs 4.10 crore for completion by December 1999, which was subsequently extended upto March 2003. The contractor left the work incomplete (June 2003) and was paid Rs 5.22 crore. The balance of the work was executed between September 2004 through another contractor at a cost of Rs 0.90 crore. Against 8.08 lakh cum of excavation provided in the sanctioned estimate and the original agreement, the work was not completed as per the design level, but the two contractors together were paid for 8.36 lakh cum and the CE sanctioned (December 2004) the excess deviation indicating that the excavation of the canal in the reach was completed.

The CE proposed (December 2007) for further excavation of 1.15 lakh cum of MHR in the same reach involving Rs 2.54 crore. Government stated (September 2008) that in order to limit the expenditure to the package value, the canal on the reach was not excavated to the design level. The reply was not acceptable in view of the fact that against the total volume of 8.08 lakh cum of excavation provided in the original agreement to achieve the design section, excavation was made for an additional 0.28 lakh cum. Thus, there was no justification for further excavation of 1.15 lakh cum involving additional cost of Rs 2.54 crore.

3.2.9.6 Wasteful expenditure on lift irrigation points and blockage of fund

Lift irrigation projects could not be made functional due to non-supply of water in the canal resulting in blockage of Rs 5.92 crore

The approved design statement of LBC of RIP from 29.17 to 71.31 km provided for lift irrigation to 2230 ha of CCA in the high lying areas where flow irrigation was not feasible. Accordingly, as per the estimate received from the Orissa Lift Irrigation Corporation Limited (OLIC), an amount of Rs 5.92 crore was deposited by the EE, OECF Division No-I, Badajhara with the Lift Irrigation (LI) Division, Dhenkanal in March and December 2004 for installation of 11 lift points (LIPs) at sites located by the project authorities for providing lift irrigation to 1440 ha of CCA by August 2005. Civil works were completed for three of these LIPs out of which two were energised in October 2005 with expenditure of Rs 1.06 crore. The third LIP was not energised as there was no supply of water in the canal.

The Development Commissioner expressed (February 2006) doubt about the feasibility of the LIPs since the ayacut earmarked for irrigation was located more than two km away with elevation of three to four metres above the canal bank. This aspect was however not examined as of May 2008. The two LIPs energised in October 2005 also failed to provide irrigation since water supply in the main canal had not reached the installation points. These LI points remained idle and huge quantities of materials were reported (January 2006) stolen from the sites. The loss on this account had not been evaluated as of February 2008.

Thus placement of funds with OLIC for installation of LI Points without ensuring flow of water in the main canal and feasibility of water supply to the ayacut resulted in wasteful expenditure of Rs 1.06 crore and blockage of Rs 4.86 crore. Government stated (September 2008) that all the LI points were expected to be completed by November 2008. However, the views of the Development Commissioner regarding non-feasibility of the LIPs had not been examined.

3.2.9.7 Extra payment due to wrong levels recorded during execution

Incorrect recording of ground levels by the Engineers in-charge resulted in an excess payment of Rs 1.59 crore

Excavation of LBC from 33.00 to 35.50 km was awarded (February 2002) to a contractor for Rs 21.14 crore for completion by February 2005. Based on the sanctioned estimate framed on the basis of data collected during preconstruction survey and investigation, the contract provided for 25.93 lakh cum of excavation. Without any change in the drawing, design and alignment in this reach, the quantity of excavation was increased to 27.78 lakh cum in the deviation statement submitted (December 2007) to the CE. The increase of 1.85 lakh cum in the quantity of excavation was due to incorrect recording of ground levels by the engineers in charge before commencement of the work which resulted in extra payment of Rs. 1.59 crore to the contractor. Besides, the agreement provided for 12.75 lakh cum of excavation in all kinds of soil (AKS) at the rate of Rs 47 per cum and 12.74 lakh cum of excavation in Medium Hard Rock (MHR) at the rate of Rs 85.50 per cum. During execution, however, the quantity of excavation in MHR was increased to 20.53 lakh cum and that of AKS was reduced to 6.81 lakh cum. The unwarranted reclassification of 5.94 lakh cum of AKS as MHR involved excess payment of Rs 2.29 crore to the contractor.

Government stated (September 2008) that the estimate was framed based on levels taken at 30 meters interval whereas during execution the levels were taken at 15 meters interval leading to deviation in total quantity of excavation. The reply was not convincing as the engineers while recording levels for preparing the estimates were required to take into account the site condition and work out the quantities accurately. Regarding reclassification of AKS as MHR, Government stated that compact rock surface was found after excavation of AKS which led to increase in the quantity of MHR. The reply was not acceptable since the estimate was sanctioned after conducting trial bores and ascertaining the underground strata at different locations.

3.2.9.8 Undue benefit to a contractor

Failure to levy liquidated damages and unwarranted award of balance works at higher rates to the same contractor led to undue benefit of Rs 1.43 crore to a contractor

Construction of Bhairpur Branch Canal from 18.00 to 27.00 km with associated structures was awarded (January 2000) to a contractor for Rs 6.22 crore for completion by July 2001. In course of execution, the alignment of the canal was changed (March 2002) to avoid reserve forest area, which necessitated execution of 11 additional structures. The agency did not achieve proportionate progress as per the approved work programme even after handing over of the forest land in February 2004 despite extension of time given upto November 2006. The structures provided in the agreement involved 0.13 lakh cum of concrete work and the additional structures involved 0.03 lakh cum of concrete work. As per conditions of the contract, any increase/decrease in quantities of items would not vitiate the contract and the contractor would be required to execute the same at the agreement rate. The agency after receiving payment of Rs 5.95 crore for the works executed expressed (June 2005) unwillingness to execute the additional structures at the agreement rate. Without closing the contract the balance of the work was awarded (February 2007) to the same contractor on retender at higher rates for Rs 2.55 crore stipulating completion by May 2008. The award of the balance of the work to the same contractor at higher rates involved extra cost of Rs 0.81 crore besides non-levy of liquidated damages of Rs 0.62 crore.

Government stated (September 2008) that since the contractor expressed inability to execute the additional quantity of the work, it was decided to execute the additional structures through fresh tenders. The reply was not tenable since the contractor had applied for extension of time which was granted upto November 2006 and the revised alignment involving the additional structures was finalised in March 2002.

3.2.9.9 Excess payment to contractors by recording inflated measurements

Excess payment of Rs. 0.87 crore made to two contractors by recording inflated measurements remained unrecovered

EE, RRC Division No. IV awarded excavation of the RBC from 48.68 to 58.43 and 48.68 to 53.93 km (balance of work) to two contractors between April 1997 and March 2003 for Rs 7.93 crore stipulating completion by April 1999/January 2004. Extension of time was granted to the agencies up to December 2000/May 2005. After receiving Rs 5.21 crore the agencies stopped (July 2000/December 2004) further execution. Final measurements recorded in June 2003/July 2007 disclosed that the contractors were paid Rs 2.84 crore

against execution of works for Rs 2.28 crore resulting in excess payment of Rs 0.56 crore, which remained unrecovered.

Government stated (September 2008) that since recovery of the excess payment made to one contractor prior to 2003 was not possible due to his demise, disciplinary proceedings had been initiated (May 2008) against the erring officers. The fact of the excess payment was pointed out by audit as far back as in September 2003. Government also stated that the final bill of the other agency was under scrutiny and action would be taken for recovery of the excess payment.

The EE, Sapua Badajore Irrigation Division awarded three works between February 1999 and February 2004 to two agencies for Rs 14.96 crore stipulating completion between February 2000 and December 2004. Extension of time was granted upto July 2005 and June 2006 in two cases. The agencies left the works between June 2006 and March 2007 after receiving payment of Rs 17.45 crore on running account bills. Final measurement of the works recorded in February and June 2007, however, disclosed that the quantities of works executed by the agencies were less than the quantities already paid for. The excess payment of Rs 0.31 crore made to the agencies by recording inflated measurements remained unrecovered as of June 2008.

3.2.9.10 Inadmissible payment to contractors

Five EEs[5] awarded excavation of RBC and its distribution systems to 20 contractors between March 1997 and January 2008 at a cost of Rs 108.57 crore for completion between March 1998 and March 2009. The agreements stipulated excavation of canal in MHR with drilling and blasting operations at rates varying between Rs 70 and Rs 180 per cum. The agreements further stipulated that the explosives to be used in the blasting operation would be approved by the Engineer-in-charge of execution prior to utilisation.

Payment of Rs 2.95 crore was made to contractors towards blasting operation in excavation of MHR, without conducting any blasting

Test check of the records (March to June 2008) disclosed that the Engineer-in-charge did not approve any blasting material for use in the excavation and the contractors excavated the canal manually/mechanically without blasting operations. Since no blasting operation was conducted by the contractors, the cost of such operation inbuilt in the item rates was not admissible to them. The contractors were, however, paid for the excavation work at the agreement rates which resulted in inadmissible payment of Rs 2.95 crore.

3.2.10 Monitoring and evaluation

Monitoring and evaluation of project implementation was poor

For assessment, monitoring, evaluating and coordinating among the field units with the EIC (WR)/Government, two monitoring cells were created under the charge of the Assistants to the CEs with the overall supervision resting with the EIC (WR). While monthly progress reports indicating the financial and physical progress of the works were submitted to the CEs, these did not

[5] Sapua Badajore Irrigation Divisoin, Rengali Right Canal Divisions No.1, Rengali Right Canal Divisions No.2, Rengali Right Canal Divisions No.3 and Rengali Right Canal Divisions No.4

contain information on reasons for non-completion of works, extent of works remaining unexecuted and bottlenecks in execution. No feedback was provided for addressing the bottlenecks leading to slippage/completion of the project. There were no records with the monitoring cell containing the details of supervision and inspection of the works by the EE, SE and CE.

No specific review meetings were held at the level of Government to review the implementation of the project, except for routine discussions on the physical status of the works in the monthly review meetings of the plan expenditure. There was no system of monitoring the complaints received from the public and other agencies on the implementation of the project and execution of various works.

No studies were made to assess the impact of non-completion of the project vis-à-vis investment so far made. Thus, the monitoring and evaluation of the project implementation were poor leading to time and cost overrun in completion of the project and delay in accrual of the irrigation benefits. Government stated (September 2008) that the implementation of the project was monitored frequently at the project level by the CE & SE. The reply was not acceptable as no feedback was provided by the monitoring cell for addressing the bottlenecks leading to slippage/completion of the project.

3.2.11 Impact analysis

Failure to provide irrigation as per targets led to non-accrual of net intended benefit of Rs 3256 crore

Though water was impounded in the barrage since 1996 for providing irrigation to 2.36 lakh ha of CCA on completion of the barrage and gates, trial irrigation was provided for 0.09 lakh ha (LBC 0.08 lakh ha, and RBC 0.01 lakh ha) which worked out to only four *per cent*. Although the LBC for 71 km and RBC for 79 km were executed, no further irrigation could be provided due to execution of works in non-continuous/isolated stretches and the canals remaining in damaged condition. As a result, the impounded water had to be released into the river without any benefit accruing to the farmers even after expenditure of Rs 1695.61 crore on the project. Government stated (September 2008) that trial irrigation had been provided to total 0.16 lakh ha (seven *per cent*). Details of CCA to which additional trial irrigation was provided were, however, not furnished.

The Economic analysis of the revised estimate prepared in 1997-98 for Rs 705.15 crore envisaged an annual benefit of Rs 414.96 crore by providing irrigation to 0.94 lakh ha of CCA. According to this analysis failure to provide irrigation from 2003-04 to 2007-08 resulted in non-accrual of net intended benefit of Rs 638.60 crore. The total non-accrual of benefit was Rs 3256.48 crore.

3.2.12 Conclusion

The project was not planned in a coordinated manner integrating supports from different agencies for smooth and timely completion of the project. The works were executed in a piecemeal fashion without analysing and assessing their impact on the whole project. The BCR projected as 3.58 in the original project report declined to 1.51 as of July 1986. The techno-economic-viability

of the project as a whole was not reassessed despite instructions of the CWC. Of the 56 packages costing Rs 951.18 crore involved for execution of LBC upto 71 km, 34 packages for Rs 501.60 crore were taken up and only 14 packages for Rs 146.26 crore were completed. Out of the 112 km of RBC, works were under execution for 79 km involving Rs 467.32 crore with the loan assistance from AIBP. The excavated canals were severely damaged due to non-provision of protective measures which remained unrectified. Trial irrigation was provided to only 0.09 lakh ha of CCA against the designed ayacut of 2.36 lakh ha (four *per cent*). Overall monitoring of the implementation of the project was poor. Due to delay in acquisition of land/non-acquisition of land, non-receipt of forest land clearance and poor contract management, the project taken up in 1980-81 at an estimated cost of Rs 233.64 crore for completion by 1990-91 remained incomplete at various stages with investment of Rs 1695.61 crore (March 2008) resulting in cost over run by Rs 1461.97 crore (626 *per cent*) and time over run by 17 years. With the delay in implementation of the project the ayacut area was being acquired by the industries posing further threat to the availability of the targeted ayacut for irrigation.

3.2.13 Lessons learnt and sensitivity to error signals

Observations were made in Para 4.1 of the Audit Report (Civil) for the year ended 31 March 2000 regarding (i) time and cost over-run (ii) non- assessment of economic viability of the project (iii) improper planning (iv) execution of works without adequate pre-construction survey and investigation (v) undue benefits to contractors (vi) extra expenditure due to delay in acquisition/non-acquisition of land and (vii) sub-standard execution of works. No corrective action had, however, been taken following the audit observations and the problems were allowed to persist.

3.2.14 Recommendations

- Revised estimate of the project as a whole should be prepared and the techno-economic viability of the project reassessed.
- Protective measures should be finalised considering the geological formations for the severely damaged portions of the canals.
- Contracts with the defaulting contractors should be closed and arrangements made to get the incomplete works executed through other agencies.
- The system of project monitoring should be strengthened to identify the bottlenecks in completion of the project and suggest effective remedial measures.

FOREST AND ENVIRONMENT, HEALTH AND FAMILY WELFARE AND HOUSING AND URBAN DEVELOPMENT DEPARTMENTS

3.3 Management of wastes

Highlights

The status of management of different types of waste generated in the State was reviewed in audit in the light of provisions contained in Environment Protection Act, 1986 and rules framed there under. The findings revealed that the implementation of these provisions was at preliminary stage and even sources, types and quantities of waste generated had not been assessed accurately. Perspective plan for collection, segregation, reuse and recycling was not available with the authorised/unauthorised entities. Types of machineries and equipments and mechanisms for reduction and recycling of waste remained largely undecided. Disposal in open space remained the most favoured solution to the management. Most of the Urban Local Bodies (ULBs) and Government hospitals were running without any waste processing and disposal facilities. Implementation of Plastic Waste Rules was restricted to issue of instructions without follow up action. Despite Apex Court's instructions, none of the industries in the State had set up engineering landfill for disposal of land disposable hazardous waste. Monitoring of implementation remained totally inadequate.

- **Funds provided by the GOI / State Government for management of municipal and bio-medical waste remained unspent due to absence of planning for the same.**

(Paragraph 3.3.2)

- **Assessment of waste generated according to sources/types of waste had not been made by the State Government.**

(Paragraph 3.3.3)

- **Ninety-two out of 103 ULBs were yet to obtain SPCB's authorisation for setting up waste processing and disposal facilities.**

(Paragraph 3.3.4.1)

- **Uniformity and adequacy of waste collection, segregation, storage at safer sites, reduction, reuse and recycling of bio-degradable material was absent in all the entities. Dumping of municipal solid waste at open sites remained the most favoured solution to the management of waste.**

(Paragraph 3.3.4.2, 3.3.4.3 and 3.3.4.4)

- **Enforcement mechanism in plastic waste management was virtually non- existent as the implementation remained restricted to issue of instructions without following them up.**

(Paragraph3.3.6)

- **Even after lapse of deadline date by Apex Court's secured engineering landfills for treatment, storage and disposal of hazardous waste, these**

[*] Abbreviations used in this performance review have been expanded in Glossary of abbreviations at pages 234 to 238

were not constructed by the industrial units. The hazardous waste was not carried and stored in covered vehicles/places.

(Paragraph 3.3.7.3)

- **About 74 per cent of total ash generated (12.382 million tons) by eight major industries remained unutilised despite Government of India's instructions to ensure use of fly ash in brick manufacturing units.**

(Paragraph 3.3.8)

- **Monitoring mechanism for management of different types of waste at the level of Government or SPCB was hardly visible.**

(Paragraph 3.3.9)

3.3.1.1 Introduction

Mention was made in Para 3.1 of the Report of the Comptroller and Auditor General of India (Civil) for the year ended 31 March 2001 regarding implementation of Environment Act and Rules relating to waste management in the State which included municipal solid waste, bio-medical waste and hazardous waste management. Non-existence of waste processing and disposal facilities in the urban local bodies and inadequate handling and disposal facilities in the Government hospitals were highlighted. Besides failure on the part of the State Government for development of common disposal sites for disposal of hazardous waste generated by the industries of the State, was commented upon.

The management and handling of waste is regulated by the Environment (Protection) Act, 1986 and rules made thereunder viz. the Municipal Solid Waste (Management and Handling) Rules (MSW Rules), 2000 and Bio-medical Waste (Management and Handling) Rules (BMW Rules) 1998. MSW rules required every municipal authority within their area be responsible for collection, segregation, transportation, processing and disposal of waste under various provisions of the rules. With an amendment to BMW rules in 2003, the institutions generating bio-medical waste were made responsible for ensuring segregation, transportation, processing and disposal without any adverse effect to human health and the environment.

The Industrial Waste Management is governed by the Air (Prevention and Control of Pollution) Act, 1981, the Water (Prevention and Control of Pollution) Act, 1974 and the Hazardous Waste (Management and Handling) Rules, 1989 as amended (January 2000, May 2003).

3.3.1.2 Organisational set up

Housing and Urban Development Department (HUDD) of the State Government was responsible for overall enforcement of the provisions of laws and rules on the subject. HUDD was assisted by Health & Family Welfare Department (HFWD), Forest & Environment Department (F&ED) and by District Collectors within their territorial jurisdiction. The State Pollution Control Board (SPCB) has been entrusted with the responsibility of monitoring the compliance of standards prescribed under relevant rules and also to submit annual implementation report to Central Pollution Control Board (CPCB). SPCB was also responsible for planning, comprehensive

programme for prevention, control and abatement of pollution and also to monitor the good practices followed by the individual industries/units/bodies. As regards plastic waste, the Recycled Plastic Manufacture Usage Rules (RPMU), 1999 as amended in 2003 provided the District Collectors exclusive responsibility for enforcement of rules relating to use, collection, segregation, transportation and disposal of plastics.

3.3.1.3 Scope of Audit

The Performance Audit on Management of Waste in the State conducted during March to June 2008 covering the period from 2003-04 to 2007-08 included test check of records of F and ED, HUDD and HFWD, SPCB, nine[1] ULBs for municipal solid waste management, 27 Health Care units (HCUs) including Government hospitals in nine districts for bio-medical waste management, nine District Collectorates[2] for plastic waste management and six industries (under six major sectors) for industrial and hazardous waste management.

3.3.1.4 Audit Objectives

The audit objectives were to assess whether:

(i) mechanism existed to assess the quantum of waste being generated and identification of risks to environment and health posed by different wastes.

(ii) policies and strategies for the management of waste gave priority to waste reduction, recycling and reuse as against waste disposal.

(iii) extent of delegation of responsibilities and accountability for waste management in respect of implementing authority was adequate.

(iv) compliance to provisions of Acts and Rules regulating various types of wastes was effective and that the implementing authorities/ units monitored, supervised and non-compliance was effectively dealt with.

(v) funds and infrastructure provided were adequate and were used economically, efficiently and effectively.

3.3.1.5 Audit Criteria

The audit criteria used for conducting the performance audit were:

- Acts and Rules relating to management of municipal solid waste, bio-medical waste, plastic waste, industrial waste (hazardous and non-hazardous)
- Policies, directives and good practices for management of waste.
- Instructions/orders issued by the nodal and administrative departments and SPCB from time to time and compliance reports

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[1] Baripada, Berhampur, Bhubaneswar, Bolangir, Burla, Cuttack, Dhenkanal, Jagatsinghpur and Rourkela

[2] Bolangir, Cuttack, Dhenkanal, Ganjam, Jagatsinghpur, Khurda, Mayurbhanj, Sambalpur and Sundergarh

- Periodical monitoring reports of the administrative departments and SPCB on management of waste.

3.3.1.6 Audit Methodology

An entry conference held on 5 April 2008 with the Commissioner-cum-Secretary to the Government of Orissa in H&UD Department and officials from SPCB, in which audit methodology, scope, objective and criteria were explained. The audit methodology consisted of response to questionnaire, document analysis, examination of various reports and records at different levels, physical verification supported by photographs wherever necessary and testing of air quality, ground water quality etc.

Audit Observations

3.3.2 Funds management

In order to effectively implement law/rules and to support the cost of collection, segregation and transportation of solid waste, Twelfth Finance Commission (TFC) had recommended grants to ULBs for Solid Waste Management through public-private partnership. The concerned ULBs were required to prepare comprehensive scheme of solid waste management including composting and waste to energy programme. During 2005-07 the State Government received TFC grants of Rs 29.64 crore and released the same to 103 ULBs out of which Rs 15.68 crore was utilised by the ULBs and Rs 13.96 crore remained un-utilised (June 2008). Besides Rupees one crore was released to the Government hospitals under State Plan for bio-medical waste management in urban hospitals of the State during the period. Out of this, Rs 95.09 lakh was disbursed to 88 hospitals/ DHH for maintenance of equipments and instruments procured for bio-medical waste management and authorisation fees. Utilisation certificates thereof were awaited for from the concerned hospitals. Out of Rs 13.72 crore TFC grants received by nine test checked ULBs, Rs 4.28 crore was utilised by them as of June 2008 and balance of Rs 9.44[3] crore remained unutilised. Similarly, out of Rs 20.28 lakh received by nine Government hospitals for bio-medical waste management, five hospitals utilised Rs 13.87 lakh and balance of Rs 6.41[4] lakh remained unutilised. Although funds were released during 2005-07, no action was taken by the ULBs/hospitals for want related tender procedure and detail instruction from the administrative department as to the objects for which the funds were to be utilised.

A mention was made in Paragraph 3.2.18 of Audit Report (Civil) for the year ended 31 March 2005 on 'Ineffective Waste Management', wherein it was observed (July 2005) that Rs 1.28 crore was spent towards purchase of 25 each of autoclaves and shredders under Orissa Health Systems Development

[3] Bhubaneswar Rs.3.16 crore, Cuttack Rs.2.04 crore, Berhampur Rs1.56 crore, Baripada Rs.0.07 crore, Burla Rs.0.12 crore, Jagatsinghpur Rs.0.05 crore, Bolangir Rs.0.13 crore, Dhenkanal Rs. 0.10 crore and Rourkela Rs. 2.21crore

[4] City hospital, Cuttack Rs.2.49 lakh, DHH, Dhenkanal Rs. 0.83 lakh, DHH, Sambalpur Rs.0.83 lakh, DHH, Jagatsinghpur Rs. 0.81 lakh and Hirakud hospital Rs.1.45 lakh.

Project and supplied to DHHs which were kept idle by them due to non-availability of required infrastructure. Further, position reviewed in audit indicated that the autoclave and shredders installed had remained idle due to lack of skilled manpower and non-provision of electricity in Capital hospital, Bhubaneswar and DHHs of Sambalpur, Jagatsinghpur, Baripada and Dhenkanal. The unsegregated bio-medical waste was dumped in the premises of hospitals outside the containment area.

3.3.3. Status of waste management in the State

The State Government was required to assess the quantity of different categories of waste generated and ensure their safe disposal including recycling, reuse and reduction, composting, energy recovery and pelletisation. However, audit observed that assessment of the total waste generated according to source / types of waste was not made by the State Government and suitable facilities created for disposal were inadequate as discussed below.

3.3.4. Management of Municipal Solid Wastes (MSW)

According to the MSW Rules, the municipal authority or an operator of a facility shall make an application to the State Pollution Control Board (SPCB) for grant of authorisation for setting up of waste processing and disposal facilities including landfills and the latter shall grant the authorisation stipulating compliance criteria, standards and additional conditions if any, and the ULBs were to set up these facilities by 31 December 2003.

3.3.4.1 Setting up disposal facilities

Of 103 ULBs only 55 applied for obtaining authorisation of which 11 were issued

Out of 103 ULBs, only 55 ULBs applied for authorisation as of March 2008 of which only 11[5] ULBs were granted authorization and remaining applications were pending either for want of alienation order of identified land or the applications were incomplete. Even, out of the 11 ULBs granted authorisation, none except Notified Area Council (NAC), Paradeep and a private operator at Puri had set up any waste processing plant. Scrutiny revealed that 86 out of 103 ULBs did not take any action for setting up waste processing and disposal facilities. In 15 ULBs, proposals were either under formulation stage or awaiting approval of the Government. Thus, even after more than ten years had elapsed since the MSW rules were framed, 101 out of 103 ULBs in the State could not set up waste processing and disposal facilities (June 2008).

As of June 2008, only two waste processing plants were available in the State

As per the implementation schedule, existing landfills were to be improved by December 2001. In none of the test checked units landfills were found available; the waste was being dumped in open dump sites. Further, the ULBs were required to identify landfills for future use and making sites ready for operation by 31 December 2002, only two ULBs (Bhubaneswar and Burla) identified sites for setting up of sanitary landfills.

[5] Soro NAC, Paradeep NAC, Berhampur Municipality, Bhubaneswar Municipal Corporation, Brajarajnagar Municipality, Belpahar NAC, Baripada Municipality, Barbil Municipality, Keonjhargarh Municipality, Kendrapara Municipality and Sonepur Municipal Council

3.3.4.2 Collection

MSW Rules (Schedule II) strictly prohibit littering and prescribed collection methods such as placing of community bins and collection as per schedule timings; to be carried by small hand driven vehicles and devising specific methods of collection in slums, hotels, business places and also for segregating bio-medical and bio-degradable wastes with a view to ensure that uncollected waste would not pose risks to health and contaminate the environment. The wastes were not to be burnt as they emit gaseous pollutants detrimental to environment.

Suitable mechanism and collection schedule of waste did not exist in test checked ULBs.

The details of waste generation and the types of waste collected were not available with the State Government/SPCB/ULBs. It was observed that two of the nine test checked ULBs (Burla and Bhubaneswar) organised house-to-house collection of municipal solid waste. As regards construction debris in three ULBs (Burla, Bhubaneswar and Cuttack), the same was collected by the waste generator or by the municipality on payment by the waste generator, while in six[6] ULBs, there was no such mechanism for collection of construction debris. None of the ULBs except Burla had ensured that municipal solid waste was segregated from bio-medical waste. In Berhampur, though there was a private operator for collection of bio-medical waste from the private hospitals till 2007, but such wastes were found unauthorisedly dumped in the municipal dump yard. None of the ULBs had taken any action to notify waste collection schedule and the likely method to be adopted by public in their respective area.

Garbages being burnt by municipal staff at the dumpsite of Baripada dated 21 July 2008

Six[7] ULBs failed to ensure that municipal wastes (other waste including garbage, dry leaves etc.) were not burnt. Rather, it was noticed in Bhubaneswar and Baripada that these were burnt in presence of municipal staff. The other three ULBs (Burla, Dhenkanal and Cuttack) however, ensured that such waste was not burnt.

3.3.4.3 Segregation of MSW

The Rules (Schedule II) specified activities by the municipality / operator through community participation, awareness campaigns to ensure segregation of municipal solid waste and disposal of non-organic waste in landfills besides use of different coloured bins such as green for bio-degradable, white for recyclable waste and black for other waste.

[6] Berhampur, Rourkela, Baripada, Bolangir, Jagatsinghpur and Dhenkanal

[7] Rourkela, Berhampur, Bhubaneswar, Bolangir, Jagatsinghpur and Baripada

Near total absence of public awareness campaigns was noticed

None of the test checked ULBs had taken any action to segregate waste into different coloured bins. Seven[8] out of nine test checked ULBs did not organise any awareness programme on segregation of waste during 2003-08. The other two ULBs (Bhubaneswar and Cuttack) claim of organising awareness programmes was not supported by any evidence.

3.3.4.4 Storage of waste

Closed storage points were not provided and waste was being dumped in open sites

The Schedule II of the Rules specified that the storage facilities should be so designed that wastes stored were not exposed to open conditions and the facilities should be aesthetically acceptable, user friendly and easy to operate. Manual handling, wherever necessary, should take care of the safety of the workers. No closed storage facilities were available in the test-checked municipalities. In two ULBs (Burla and Baripada) there were uncovered temporary storage points with permanent concrete structures for its final disposal at the dumpsites. In seven out of nine test checked ULBs, the storage points were cleaned daily while in Baripada and Jagatsinghpur municipality due to shortage of manpower and vehicles, the storage points were not attended regularly. In Berhampur Municipality, there were 41 open storage points situated on the road side creating unhygienic and unsanitary conditions all around.

A storage point Berhampur exposed to stray animals and passer bys dated 17 August 2007

In all test checked ULBs, manual handling of waste was in practice but Baripada, Berhampur and Burla ULBs had not taken any precautionary measures for the safety of the manual handlers by providing them gum boots, hand gloves, facemasks etc. The other six municipalities (Cuttack, Bhubaneswar, Rourkela, Bolangir, Jagatsinghpur and Dhenkanal) stated that they were providing gum boots and hand gloves to the manual handlers.

3.3.4.5 Transportation of waste

Waste being transported in uncovered vehicles

Schedule II of the Rules required vehicles for transportation of waste to be necessarily covered with facilities for multiple handling and deployed daily for cleaning to ensure that transportation of municipal solid waste for processing / disposal was carried in a hygienic manner and did not cause littering of waste. In nine test checked ULBs, out of 161 vehicles engaged for transportation of municipal solid waste during 2003-08, only one in Berhampur Municipality was a covered vehicle, 32 vehicles were being covered with tarpaulins, polythene and nets and remaining 128 vehicles were open.

[8] Rourkela , Berhampur , Baripada, Bolangir, Jagatsinghpur, Dhenkanal and Burla NAC

3.3.4.6 Processing of MSW

Schedule II of the Rules required minimising burden on landfills by adopting suitable technology or combination of such technologies for segregating and processing through composting, vermi-composting, anaerobic digestion or any other appropriate biological processing for bio-degradable waste. Incineration with or without energy recovery including pelletisation could also be used for processing waste in specific cases.

Near total absence of processing facilities in ULBs

Test check revealed that eight out of nine ULBs did not have waste processing facilities. In Cuttack, though two composting facilities were available, the first plant of one ton per day (TPD) capacity was defunct and the second plant with five TPD capacity was partially operating for processing garbage collected from vegetable markets. However, the SPCB had not issued authorisation for installation of above processing plants.

3.3.4.7 Disposal of MSW

The Rules specified that land filling should be restricted to non-bio-degradable, inert waste and other waste not suitable either for recycling or biological processing. Land filling of mixed waste was to be avoided unless the same was found unsuitable for waste processing or till alternate facilities were made available. The landfill site should be large enough to last for 25 years and away from habitation, places of cultural, historical and religious interests. The wastes in landfills were to be covered with soil and compacted everyday.

Unsegregated waste being dumped in open sites

None of the ULBs had established such disposal facilities. All the ULBs were dumping unsegregated waste in open and unsanitary dumpsites posing immense health risks and environment hazard. The waste was dumped in heaps and not levelled / compacted anywhere.

Waste sites found close to habitations

Three ULBs (Rourkela, Bhubaneswar and Baripada) out of nine test checked ULBs had open dump sites close to habitations. The Bhubaneswar Municipal Corporation (BMC) had four open sites for dumping of which three were surrounded by residential zones.

Municipal waste dumped in heaps in Rourkela Municipality

Rourkela municipality had an open dumping yard of 9.95 acre at Balughat on the banks of Brahmani River, a place regularly used by local residents. The dumpyard had no approach road and no systematic dumping was in practice. The unsegregated waste consisting bio-medical, industrial, plastic and horticultural waste were found lying

One drain at a storage point in Rourkela Municipality blocked due to plastic waste

scattered in and outside the dump yard emanating foul smell all around. The waste was freely burnt by rag pickers causing air pollution in the environment.

The municipality had no arrangements for door-to-door collection and temporary storage points constructed almost in every lane were surrounded by filth exposed to stray animals.

Baripada municipality possessed authorisation of SPCB for setting up and operation of a disposal facility on a land of 42.03 acres at Raghunathpur. Despite this, an open dump site existed close to a public school and a technical institute. No monitoring had been done by the SPCB to ascertain the reasons for the non-existence of a sanitary landfill for which authorisation was issued in March 2004.

The open dumpsites were to be monitored at regular intervals to make sure that the open dumpsites of waste did not cause contamination of the environment. Test check revealed that no monitoring of open dumpsites had been done by any of the ULBs, the State Government or the SPCB.

3.3.5. Management of bio-medical waste

Bio medical waste (BMW) consist of human anatomical, animal, biotech waste, waste sharps, discarded medicines and cytotoxic drugs, solid, liquid and chemical waste and incineration ash. Its management is governed by the Bio-Medical Waste (Management & Handling) Rule 1998. According to Rule 7(1), the State Government appointed the SPCB as the competent authority to enforce provisions of the rules.

In pursuance to Rule 9, the State Government also constituted (June 1999), an Advisory Committee (reconstituted in July 2005) with the Director, Environment of F&ED as Chairman and Member of SPCB as Member Secretary to advice on matters relating to implementation of BMW rules.

3.3.5.1 Authorisation for BMW treatment facilities

HCUs disposing BMW without authorisation included Government hospitals

According to Rule 8, every institution generating, collecting, receiving, storing, transporting, treating, disposing and / or handling BMW and every operator of a BMW treatment facility should seek authorisation from the prescribed authority of the State for handling and disposal of bio-medical waste. Records of SPCB revealed that out of 774 health care units, 437 had applied for authorisation. Of this 297 were granted authorisation and others were operating without authorisation. Of the 27 test checked units, eight[9] Government run hospitals and five[10] private nursing homes were operating without any authorisation from SPCB. As the authorisation by the prescribed authority specified compliance criteria subject to verification by SPCB,

[9] DHHs of Dhenkanal, Bolangir, Jagatsinghpur, Baripada, Cuttack, Rourkela, Sambalpur and Hirakud Hospital, Hirakud

[10] Samleshwari Nursing Home, Burla; Mayurbhanj Ayurvedic Mahavidyalaya, Baripada; Suraksha Nursing Home, Cuttack; Shakti Nursing Home, Jagatsinghpur and Harihar Diagnostic Centre and Nursing Home, Bolangir

running of waste treatment facilities without authorisation had resulted in violation of provisions of rules.

3.3.5.2 Segregation, storage and transportation of BMW

According to Rule 6, bio-medical waste was not be mixed with other waste but segregated into different containers/bags at the point of generation, labeled and transported in specifically authorised vehicles. No untreated BMW was to be stored beyond 48 hours.

BMW was not being segregated

It was noticed that out of 27 test checked hospitals/nursing homes, in ten hospitals/nursing homes (seven[11] Government hospitals and three[12] private nursing homes), no segregation of waste was done at the point of generation. In five[13] test checked hospitals/nursing homes, untreated BMW was being transported in uncovered vehicles to deep burial pits outside the hospital premises. One nursing home (Sanjeevani Nursing Home, Dhenkanal) had been keeping untreated bio-medical waste beyond 48 hours.

3.3.5.3 Treatment and disposal of BMW

493 HCUs were not equipped with waste treatment facilities

Rule 5(2) required that every hospital and nursing home was to set up requisite bio-medical waste treatment facilities like incinerator, autoclave, microwave system for the treatment of waste, or ensure such treatment of waste at a common waste treatment facility or any other waste treatment facility. Records of the SPCB showed that out of 774 Health Care Units (HCUs), 138 HCUs were utilising common bio-medical waste treatment facilities operated by a private operator and 143 were having their own facilities. The remaining 493 units did not have any facilities. The SPCB stated (March 2008) that show cause notices were issued to the defaulting units and that the Government hospitals were the major defaulters.

Autoclave lying idle at Capital Hospital, Bhubaneswar dated 12 September 2007

Test check revealed that out of 27 units, three units (Samaleswari Nursing Home, Sambalpur; Durga Nursing Home, Baripada and Hirakud Hospital, Hirakud) did not set up any waste treatment facility except deep burial pits. In five Government hospitals[14] although each of them were provided (2004-05) with one autoclave and one shredder, the same were not functional in absence of skilled manpower/non-provision of power supply

[11] DHHs of Baripada, Dhenkanal, Jagatsinghpur, Sambalpur and Cuttack and MKCG Medical College and Hospital and Hirakud Hospital, Hirakud

[12] Kalyani Poly Clinic, Dhenkanal; Suraksha Nursing Home, Cuttack and Mayurbhanj Ayurvedic Mahavidyalaya, Baripada

[13] Harihar Diagnostic Centre and Nursing Home, Bolangir; Sidharth Arogyanidhi Nursing Home, Berhampur; Durga Nursing Home, Baripada; DHH, Baripada and MKCG Medical College and Hospital, Berhampur

[14] Capital Hospital, Bhubaneswar; DHH of Dhenkanal, Sambalpur, Baripada and Jagatsinghpur

or due to damaged condition of the equipments since inception.

In DHH, Dhenkanal and Jagtsinghpur, the untreated bio-medical waste was found dumped outside the earmarked containment area[15] within the hospital premises. In DHHs, Sambalpur and Baripada the bio-medical waste was being dumped both in and outside the containment area instead of disposing the same in the deep burial pits.

Bio-medical waste dumped outside the containment area in DHH, Dhenkanal dated 20July 2007

Records of BMW collected by private operator were not maintained

A private operator, (Sani Clean Private Ltd.) was granted (February 2000) authorisation for setting up common bio-medical waste treatment facility with a capacity of handling waste generated by 10000 beds per day. Checking of records and physical verification of the unit revealed that the unit did not maintain any register / record for the quantity of BMW collected from the HCUs as required (Rule 11). The unit however submitted annual report to SPCB in Form-II (Rule 10) containing the category and quantity wise of BMW handled as stipulated in the Authorisation order. According to the information furnished to audit, the operator had collected 281.28 kg of BMW from 199 HCUs during 2007-08, which worked out to 0.0039 gram per HCU per day which clearly seemed fictitious. Despite such non--compliance, the SPCB did not take any legal action for failure to comply with the provisions under Rule 7 except issuing simple instructions (August 2007) to the private operator to quantify the BMW generated by it.

3.3.6 Management of Plastic Wastes

According to the Recycled Plastics Manufacture and Usage Rules, 1999 as amended in 2003, SPCB was made the prescribed authority for enforcement of the provisions of these rules relating to manufacture and recycling and the District Collector / Deputy Commissioner of the concerned district was the prescribed authority for enforcement of rules relating to use, collection, segregation, transportation and disposal.

Enforcement by Collectors remained limited to paper instructions and follow-up action found missing

In five[16] of the of nine test checked districts, District Collectors issued (2003-04) instructions for enforcement of rules relating to use, collection, segregation, transportation and disposal of plastics by issuing orders/circulars to sub-ordinate offices and the ULBs of the districts. However, there was no evidence of taking any follow up action in the collectorates. The Collector, Cuttack failed to provide any supporting documents in favour of steps taken by him for enforcement of above rules. No instructions were issued by the Collector, Jagatsinghpur to the subordinate staff in this regard. The Collectors, Bolangir and Dhenkanal did not furnish any compliance.

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[15] The containment area is an earmarked place built inside the premises of the hospital where the segregated bio-medical waste are to be dumped in the deep burial pits constructed for the purpose after giving disinfection treatment

[16] Ganjam,Khurda,Mayurabhanja,Sambalpur,Sundergarh

Further, according to Rule 4, no vendor shall use carry bags or containers made of recycled plastic for storing, carrying, dispensing or packaging of foodstuffs. Sambalpur and Ganjam Collectors did not have information as to whether vendors were using carry bags or containers made of recycled plastics for storing, carrying, dispensing or packaging of foodstuff in violation of Rule 4. District Collectors of Sundergarh and Khurda stated that vendors were using carry bags or containers made of recycled plastics and instructions were issued to the ULBs to conduct awareness programmes and to stop use of such material. Information on action taken by the ULB, Khurda was not available with them. As regards Sundergarh district, two ULBs conducted awareness programmes in urban areas. The District Collector, Cuttack stated that no vendor was using carry bags or containers made of recycled plastics. However, the same could not be verified due to lack of supporting documents. No action was taken by the Collector, Jagatsinghpur in this regard. Collectors, Bolangir and Dhenkanal did not furnish any information.

Rule 10 stipulated that no person should manufacture carry bags or containers irrespective of its size or weight unless the occupier of the unit had registered with SPCB and the minimum thickness of carry bags of virgin plastic or recycled plastic should not be less than 20 microns. As authorised (March 2006/September 2006) by the State Government, the SPCB (F&E Department) entrusted the Divisional Forest Officers (DFOs) and Assistant Conservator of Forests (ACFs) with the responsibility of implementation of rules relating to prevention and control of the menace of polythene bags within their respective jurisdiction with the assistance from the concerned district magistrates/ collectors. The Collector, Mayurbhanj stated to have issued instructions to DFOs/ACFs to implement prohibition of plastic carry bags less than 20 microns, but no supporting documents were produced. The SPCB, however, had no information on number of raids, inspections conducted by DFOs and ACFs and action taken by them. There was one reported (September 2006) case of seizure of 130 packets of polythene in Sambalpur district.

3.3.7 Management of Hazardous Waste

Hazardous waste (HW) management is governed under the Hazardous Waste (Management and Handling) Rules, 1989 framed by the GOI. Rule 3 ibid defines hazardous waste means waste which by reason of any of its physical, chemical, reactive, toxic, flammable, explosive and corrosive characteristics causes danger or is likely to cause danger to health or environment, whether alone or when in contact with other waste of substances.

3.3.7.1 Assessment of waste

The SPCB was the implementing agency for industrial waste management in the State under the Hazardous Waste (Management & Handling) Rules 1989, the Water (Prevention & Control of Pollution) Act, 1974 and Air (Prevention & Control of Pollution) Act, 1981.

In the light of the decision of Hon'ble Supreme Court of India in October 2003, the MOEF/CPCB requested (May 2004) all the SPCBs to prepare an inventory of hazardous waste generated in the State and also to provide

information on the identification of dumpsites including rehabilitation plans. The SPCB entrusted (March 2007) the job to Administrative Staff College of India (ASCI), Hyderabad. As per the report submitted (October 2007) to CPCB, out of 2754 industries, 335 industries located in 21 districts (in 29 sectors) generated 96828 tons per annum (TPA) of hazardous waste which were classified into recyclable (18427 TPA), incinerable (4052 TPA) and land disposable (74349 TPA) categories.

As per the report, the industries generated 4052 TPA of incinerable waste of which Collieries sectors generated 2251 TPA of hazardous waste. As there was no incinerator in the State, this waste was being stored with land disposable waste in the dump yards/pits made for the purpose. In respect of recyclable waste, there was little demand for recyclers of waste; as a result, the recyclable waste was also being stored in a similar manner. As regards land disposable waste of 74349 TPA generated, SPCB issued directions to most industries time and again for developing secured landfills for disposal of hazardous waste. Most of the industries made low assessment of waste which distinctly varied from the ASCI Report. SPCB stated (June 2008) that it was monitoring the variations in assessment and disposal of waste every year and instructing the industries to furnish correct figures through annual reports.

3.3.7.2 Treatment, Storage and Disposal facilities (TSDF) for HW

According to Rule 8, the State Government, the occupier or operator of a facility was responsible for identifying sites for establishing the treatment, storage and disposal facilities (TSDF) which included secured landfill, intractable waste stores, incinerator, reuse/recycling facilities, a laboratory capable of comprehensive analysis and arrangement of transportation and handling of waste including supporting infrastructure. The Supreme Court of India directed (October 2003) all the State Governments to construct and operate landfill for disposal of hazardous waste by 31 December 2006.

Check of records of SPCB revealed that Government (Industry Department) declared (October 2003) Orissa Industrial Infrastructure Development Corporation (IDCO) as the nodal agency for development of TSDF near Rourkela. However due to non-availability of sufficient space for landfill, the complex was proposed for shifting to Kalinga Nagar (Jajpur district) as per the decision taken in a meeting chaired by the Chief Secretary (July 2007). As per MOEF, GOI came forward (June 2006) to provide a grant of Rs 2 crore for the purpose provided that a matching grant was made by the State Government. SPCB sanctioned (March 2007) Rs 50 lakh in favour of IDCO towards matching grant from the State Government on the condition that the firm would apply for the matching grant to GOI to avail central assistance through SPCB. However, the construction was yet to take off (August 2008).

3.3.7.3 Non-construction of engineering landfill

Hon'ble Supreme Court of India in their order of October 2003 directed inter alia that units that were operating without authorisation/ or in violation of the conditions of authorisation issued under the Hazardous Waste (Management and Handling) Rules, 1989 were to be closed forthwith and that the

construction of hazardous waste landfill site should be completed and made operational by 31 December 2006.

Landfills for disposal of HW were not constructed by industries inspite of Apex Court's order

Test check of records at SPCB revealed that, 12 large scale industries generating hazardous waste were directed under Section 5 of the EPA, 1986 to strictly comply with HW Rules and Apex Court's directions and submit monthly progress reports on construction of engineering landfills. But it was found that none of the industries could complete the construction of engineering landfills by the deadline December 2006. SPCB stated (June 2008) that four[17] industries had developed engineering landfills as of March 2008 and that the designs were approved for remaining eight[18] industries.

No closure notice issued to any industry for failure to construct engineering landfills

Test check of units revealed that four units viz. RSP, Rourkela (RSP); NALCO, Angul (NALCO); J.K. Paper Mill, Rayagada (J.K) and TRL, Belpahar (TRL) were not issued authorisation by SPCB because they had not constructed engineering landfill. While TRL was operating without an authorization since August 2005, NALCO was operating without an authorisation since November 2005 and RSP and J.K since December 2006. NALCO and RSP replied that the construction of engineering landfills were in the tendering stage whereas in J.K, only land identification and design approval had been made. Thus, SPCB failed to enforce the order of Honourable Apex Court despite a lapse of four and half years.

As per SPCB inventory, RSP generated 23,894.50 MT and NALCO generated 18414 MT of HW per annum contrary to which RSP and NALCO stated to have generated 2646.25 MT and 3268 MT HW per annum, the variation being 89 and 82 *per cent* respectively. No action had been taken by SPCB to reconcile the discrepancies mentioned in the annual reports of these units submitted to SPCB.

TRL had constructed an engineering landfill in March 2008, but it had not been inspected and monitored by SPCB (June 2008). Further, as verified during joint inspection of audit and SPCB officials, the HW dumped in the impervious pits prior to operation of the landfill was not disposed in the newly constructed landfill as directed by SPCB.

Hazardous waste pit 1 partly filled with water at RSP dated 7 May 2008

Three HW pits maintained by **RSP** were in open area and were surrounded by non-hazardous waste dump yards and were not distinctly separated. Two of the pits visited were exhausted and found to be filled with

[17] 1) M/S Jayashree Chemicals, Ganjam, 2) Indian Farmers Fertiliser Corporation (IFFCO), Paradeep, 3) Paradeep Phosphate Ltd. (PPL), Paradeep and 4) Tata Refractories Ltd. Belpahar

[18] 1) Rourkela Steel Plant, 2) HINDALCO, Hirakud, 3) J.K. Paper Mill, Rayagada, 4) Ferro Manganese Plant, Joda, 5) Ferro Alloys Plant, Bamnipal, 6) NALCO Smelter, Angul, 7) OCL India Limited, Rajgangpur and (8) Balarpur Industries, Jeypore

water. The major pit of 1500 MT capacity was suffocating due to dumping of sulphur muck and the Suspended Particulate Matter (SPM) level was 687 micro gram/m^3 against prescribed standard of 500. The test results of samples of waste water/effluents discharged by RSP at two points revealed that the wastewater contained total suspended solids (540 mg/ltr and 658 mg/ltr) against the prescribed of 100 mg/ltr.

Though **NALCO** stated that it had no incinerable waste, yet it had an incinerator with capacity of 75 kg per hour operating since May 2006. NALCO generated 3265 MT of Spent Pot Lining (SPL), one of the high potential HW containing cyanide and fluoride. This was required to be stored in secured conditions till their final disposal in the engineering landfill. Instead, they were stored in three storehouses of concrete structures with tin roof and bounded from three sides. Similarly, used filter bags were found lying dispersed by plant road side and another HW i.e. Alloys Dross were found stacked outside the store house. It was further observed that HW like spent pot lining, butts and green anodes containing cyanide and fluoride were sold by the plant to unauthorised parties.

Used filter bags stacked outside NALCO godowns dated 28 May 2008

Alloys dross dumped outside the godowns at NALCO dated 28 May 2008

J.K was selling its effluent treatment plant sludge (primary and secondary), a hazardous waste to unauthorised parties for use in cardboard manufacturing units and agricultural farms. No survey had been made regarding safe use of such waste as manures and paper boards. No assessment of HW at source was also being made by the unit.

The Adhunik Metaliks, an integrated Iron and Steel industry had not quantified HW. The plant has no covered vehicles for transportation of HW from collection points to the landfill site as required under HW Rules. The Adhunik Metaliks had authorisation for three types of HW mainly used oil, oily sludge and spent resin. While used oil stored in barrels was being sold to SPCB authorised parties; in respect of other two HW the unit could not furnish any reply.

3.3.8 Management of Non-hazardous waste

According to SPCB, about 25 million tons of industrial solid waste was generated in the State annually out of which 24 million tons were non-hazardous solid waste which included nine million ton ash from thermal power plants and six million ton char kiln dust from 103 sponge iron plants. SPCB estimated that every year 100 hectares of land was required for solid

waste disposal. At present, the char kiln dusts and blast furnace (BF) / SMS slags and flue dusts from iron and steel industries were being dumped in open fields and low lands. There was no systematic disposal of other waste in TRL, J.K and RSP. The waste was being dumped in open sites without levelling and soiling. The plants had no sprinkling facility inside the plant area for settling dust. The Adhunik Metaliks, J.K and NALCO Smelter had not maintained records relating to generation and collection of non-hazardous waste.

Utilisation of ash generated from Power Plants in Orissa

As per Government of India (GOI) notification (September 1999 and August 2003) issued under Section 3 of EP Act required that manufacturers of clay bricks / tiles / blocks operating within a radius of 100 km from coal or lignite based Thermal Power Plants (TPP) were required to mix at least 25 *per cent* (the percentage should reach 100 by August 2005) of ash with soil on weight to weight basis. SPCB and the State Government were made the enforcing and monitoring authorities respectively for ensuring compliance. Further, MOEF directed (April 2004) SPCBs not to allow brick kilns operating within 50 km radius from the TPPs without mixing at least 25 *per cent* of fly ash in the manufacturing of clay bricks.

Heavy accumulation of power plant ash for want of sufficient space for disposal

There were eight major TPP and many other small captive power plants generating over 12.382 million tons ash per annum out of which only 3.21 million tons (26 *per cent*) could be utilised. This ash was disposed by the TPPs in ash ponds constructed for the purpose. Most of the ash was utilised on land filling and dyke raising of ash ponds. SPCB records revealed that very little percentage (2.18) of ash was used for brick making. Only 0.3 million tons of ash had been supplied to cement, asbestos and other industries which was 9.48 *per cent* of total ash utilised during 2007-08. Neither the State Government nor the SPCB had taken any effective steps to enforce or monitor the provisions of GOI notifications.

Ash pond of RSP dated 7 May 2008

Two test checked units i.e. NALCO, Captive Power Plant (CPP) (capacity : 960 MW) and CPP of RSP (capacity : 220 MW) generated 24,97,653 MT of ash in 2007-08, out of which 2,58,777 MT was utilised for land reclamation and embankment/dyke raising and 10,109 MT of ash was supplied to eight brick units by CPP, NALCO. The RSP stated that though a good number of cement industries existed within 100 km radius of RSP, the cement manufacturers and brick kilns were not interested in utilisation of ash even at free supply. Thus, non-enforcement and monitoring by SPCB and the State Government led to huge accumulation of ash in the ash ponds of the industries/TPPs defeating the purpose of conservation of topsoil.

3.3.9. Monitoring

The Advisory Committee set up to monitor the implementation of BMW Rules decided (November 2005) to meet every quarter. As of August 2007, only one meeting was held in which a decision was taken to raise the authorisation fees and encourage health care units in private and government sector to avail the services of common waste treatment and disposal facility. No follow-up action, however, was taken.

The SPCB or the Government (HUDD/ HFWD) did not ensure submission of annual reports and returns by the ULBs to the SPCB or obtaining authorisation from SPCB. Further, scheduled inspections of HCUs was also not ensured by the SPCB. The industrial units as well as ULBs did not conduct laboratory tests at periodical intervals and send the reports to the SPCB.

As such, monitoring of the MSW and BMW rules was inadequate.

3.3.10 Conclusion

The waste management under provisions of various rules was found at very nascent stage. No comprehensive plan and resource identification to meet the requirement of individual entities has been done. All the units failed to comply with provisions of relevant rules even after lapse of five to seven years of period after prescribed date(s). The funds under TFC grants for MSW and State grants for BMW remained unutilised in absence of specific plans for creation of infrastructure.

3.3.11 Recommendation

- The State Government / SPCB should assess on priority the quantity of all types of waste generated and the projections for the coming years. The identification of space for organised landfills and alienation of land should be done.
- The State Government should identify the requirement of machinery and infrastructure for processing, recycling, reuse and handling of waste with support of funds.
- Duties of prescribed and implementing authorities should be clearly demarcated and prescribed authorities empowered with penal provisions.
- The usage of huge quantities of fly ash generated by power plants in the State should be explored and concrete steps be taken to fill up mine voids and land reclamation of sea as provided in GOI instructions.
- The monitoring mechanism should be strengthened with introductions of regular reports, returns and schedule of inspections, conducting laboratory tests.

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FOREST AND ENVIRONMENT DEPARTMENT

3.4 Functioning of Chilika Development Authority, Bhubaneswar

3.4.1 *Introduction*

Chilika lagoon situated along the east coast of Orissa is a unique brackish wetland in the country with water-spread area varying between 906 and 1165 square kilometer. It is an assemblage of marine, brackish and fresh water eco-system with amazing biodiversity. The lagoon had been facing multi dimensional ecological and anthropogenic pressure leading to area shrinkage, siltation, choking of the inlet channel, decrease in salinity and normal loss of biodiversity. To overcome the threat of siltation, change of salinity regime and depletion of the bio resources including fish etc, the Government of Orissa set up (November 1991) the Chilika Development Authority (CDA), a registered society. The Chief Executive (CE) is the head of the Authority functioning under the direction and control of the Governing Body (GB) with the Chief Minister of Orissa as the Chairman and the Forest and Environment Department (F&ED) of the State Government is the administrative department of the Authority.

3.4.2 Audit coverage

The functioning of the Authority during the period 2003-2008 was reviewed in audit (January-May 2008) under Section 14 (1) of the C&AGs DPCs Act, 1971 through test-check of records at CDA, Director of Fisheries, Cuttack, Director of Inland Water Transport, Bhubaneswar, Board of Revenue, Cuttack, four[1] other departments, and sixteen [2] units working for Chilika lagoon .

3.4.3 Funds allocation and expenditure

Grants received by the CDA from the Government of India (GOI) based on recommendations of various Finance Commission and other plan grants from GOI as well as from State Government and the expenditure incurred there against during 2003-08 were as below:

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* Abbreviations used in this performance review have been expanded in Glossary of abbreviations at pages 234 to 238

1 Forest and Environment, Fisheries and ARD, Revenue, Tourism

2 DFO, Khurda, DFO (WL) Chilika ,Balugaon, Collectors (Puri ,Khurda, Ganjam), Tahasildars Brhamagiri, Krushnaprasad, Tangi, Banapur, Khallikote), ADF(B&T)Balugaon, ADF(Marine)Puri ,Dist. Fishery Officer, Khurda, Managing Director, FISHFED, Bhubaneswar, Dist. Tousist Office, Puri, Asst. Engineer, IWT, Balugaon,

Table-1 : Fund position

(Rupees in crore)

Year	Opening balance (a)	Receipt						Total funds available (a + d)	Expe-nditure	Unspent balance
		Plan (b)				Non plan (c)	Total (d) = b + c			
		EFC / TFC	MOEF	State Plan	Others	Task force				
2003-04	**3.27**[3]	17.93	0.52	0.10	0.07	0.05	18.67	21.94	19.38	2.56
2004-05	2.56	0	1.30	0.10	0.41	0.05	1.86	4.42	2.98	1.44
2005-06	1.44	0	1.40	0.10	0.57	0.15	2.22	3.66	2.97	0.69
2006-07	0.69	7.50	0.55	0.45	0.25	0.15	8.90	9.59	7.41	2.18
2007-08	2.18	7.50	0.90	0.45	0.24	0.05	9.14	11.32	8.55	2.77
Total		**32.93**	**4.67**	**1.20**	**1.54**	**0.45**	**40.79**		**41.29**	

EFC: Eleventh Finance Commission, TFC: Twelfth Finance Commission, MOEF: Ministry of Environment and Forests, GOI

Thus, out of total available funds of Rs 44.06 crore (Receipts : Rs 40.79 crore and opening balance of Rs 3.27 crore), the expenditure incurred was Rs 41.29 crore during 2003-08 and Rs 2.77 crore remained unspent as of March 2008. However, the CE submitted utilisation certificates to the State Government for Rs 37.32 crore which included unutilised advance of Rs 47 lakh paid during the period to different executing agencies showing the same as final expenditure in the accounts.

3.4.3.1 Delay in release of GOI grants

Receipt of Rs 1.95 crore (March 2005) from the MOEF, GOI under "Conservation and Management of Chilika lagoon" was released by the State Government to CDA between July 2005 to July 2006. The delay in release of funds deprived CDA interest of Rs 11 lakh.

3.4.3.2 Irregular diversion of funds towards establishment expenditure

The CDA by keeping funds, received under Tenth and Eleventh FC grants in saving bank and term deposit accounts earned interest of Rs.1.80 crore during the year 1996-97 to 2005-06 as additional resources to the scheme funds. These funds were not to be used for establishment expenditure. But the CDA used Rs.1.09 crore towards establishment cost like payment of wages, electricity bills, POL etc during 2004-06. Further, out of the funds received from the GOI (MOEF) under conservation, management and development of Chilika lagoon, Rs 6 lakh was irregularly diverted between April and June 2006 for payment of salary and wages of the CDA staff. The CE stated (February 2008) that as no money was available for the said purposes the funds were diverted. The reply was not acceptable as there was budget provision for the purpose during 2002-06 under the state plan.

3.4.3.3 Non utilisation of money collected out of ferry services

As per the Memorandum of Association (MOA) and Rules and Regulation of CDA, income of the authority shall be applied towards the promotion of

[3] EFC: Rs 92.59 lakh, MOEF : Rs 109.06 lakh, State Plan : Rs 47.20 lakh, Others : Rs 77.73 lakh.

objectives and functioning of CDA subject to approval by Government in F&ED. It was noticed that Rs 56 lakh collected on account of ferry service charges during 2003-08 were retained in bank account of CDA and the cost of operation and maintenance was charged to FC grants. No action plan had been chalked out for its utilisation (March 2008).

3.4.4 Programme implementation

Successive Central Finance Commissions as well as Ministry of Forest and Environment provided funds for multidisciplinary and multidimensional activities for preservation and restoration of ecosystem and overall development of lagoon. The CDA, however, carried out various activities like desiltation, catchment area treatment, conservation of biodiversity, fisheries resources development etc as a standalone process as there was no perspective plan and annual action plans were prepared based on fund received from GOI from year to year.

3.4.4.1 Desiltation activities

No perspective plan devised for want of committed financial support

The threat to biodiversity of the lagoon is attributed to siltation, change in salinity regime of the lake water due to closure of the outer channel adversely affecting the exchange of sea water into the lagoon. As per the action plans under the various FC grants, de-siltation activity was to be carried out periodically. In the process, CDA incurred expenditure of Rs 24.04 crore for de-siltation of 51.22 lakh cum through dredging during December 1997 to January 2008. Though there was de-siltation of 14.54 lakh cum at chainage 10000-25000 during 2002-04, the pre and post monsoon survey report of IIT (2004) , Madras revealed subsequent siltation of 8.30 lakh cum at same site of dredging which would cost Rs 5.98 crore at the rate of Rs 72 per cum. This silt deposition after dredging were attributed to modification of river system through intervention such as dams and weirs, structure for agriculture etc which affected seasonality of flow of water and frequency of floods. The DFO, (Wild Life) Chilika also attributed heavy siltation of approximately 13 million MT annually to indiscriminate deforestation in the catchment area of the tributaries of the lake. Neither the CDA nor the State Government prepared any perspective plan to address the problem of silt deposits.

3.4.4.2 Irregular payment of escalation on dredging - Rs 93 lakh

Payment of escalation charges of Rs. 93 lakh against standard condition of contract

As per instructions issued by Government of Orissa, (April 1986) a clause on escalation of rates on labour, material and POL can be incorporated in an agreement if the minimum contractual period is one year or more. It was noticed that CDA entered into an agreement (July 1999) with a Chennai based private firm for dredging of 10 lakh cum within 11 months at the rate of Rs. 35/- per cum with the CDA's dredger Kalijai-II incorporating an escalation clause in the agreement. The contractor dredged only 2.27 lakh cum between August 1999 and September 2000 and was irregularly paid escalation charges of Rs 11 lakh due to provision of such clause in the agreement. The same contractor dredged further quantity of eight lakh cum between April 2002 to March 2003 and was paid escalation charges on the same terms and condition without executing fresh agreement. This led to further irregular payment of

Rs 0.82 crore towards escalation charges due to inclusion of escalation clause in the contract.

3.4.4 .3 No action plan for economical disposal of the dredged material

Commercial exploitation of minor minerals not done

No action plan was formulated to economically exploit the minerals (shell lime, silt, sand, ordinary earth) available in the dredged materials as contemplated in Orissa Minor Mineral Concession Rules 2004 resulting in illegal lifting and trading by the local traders. No charges were levied for use of island space for purpose of storage and stacking of the materials so segregated by the traders.

3.4.4.4 No action plan to address the adverse impact of new mouth

No disaster management plan exist to tackle possible adverse effects of artificial opening of mouth

It was originally envisaged in the action plan under the Tenth Finance Commission grants that the 32 kilometer natural outer channel was to be dredged for de-siltation. The Central Water and Power Research Station, (CWPRS), Pune, recommended to dredge the existing channel and in case this channel remained stable, it would be preferable to concentrate on improving the channel and examine its impact on salinity in the lagoon before opening a new mouth. But, without dredging the original channel, CDA undertook dredging operation over eight kilometres of the channel and opened (September 2000) a "new mouth" at a cost of Rs 98 lakh. However, the observation report of CDA (April 2003) indicated increase of width of the mouth as much as 10 times the original width (Chilika side 640m, middle 480m, seaside 1040m) with a northward shift and sea water inlet stretch of 295 meters as per the latest survey (29 November 2007). The GB expressed (June 2003) concern over the adverse effects in the adjacent villages due to widening of the new mouth. As per press reports (July/August 2008) in the local news papers another natural mouth got opened at a distance of one kilometer from this artificial mouth due to erosion of sea shore attributed mainly to the opening of artificial mouth which might lead to a major disaster in the peripheral villages in case of typhoon, cyclone, high tides etc. After opening of new mouth although fish breeding increased, steep decline in fish landing was noticed from 10286 MT in 2003-04 to 6610 MT in 2007-08 and the prawn and crab production from 3767 MT in 2003-04 to 3441 MT in 2007-08. During the same period the genetic diversity after exchange of saline water also led to gradual disappearance of fresh water species like Murrels and Featherbacks. No action plan was formulated by the CDA (July 2008) to address the adverse impact for such change of biodiversity in and around the lagoon. The Central Inland Fisheries Research Institute (CIFRI),

New mouth of Chilika lagoon

Barrackpore - consultant of CDA attributed the decline in fish landing to existence of gheries[4] in the lagoon.

3.4.5 Treatment of catchment area

Catchment treatment measures assumes significance in bringing down the silt flow into the ecosystem of the lagoon and CDA undertook plantation on its own as also through various DFOs.

3.4.5.1 Plantation without adequate field staff

Wasteful expenditure of Rs 2.17 crore due to failure of plantation

The CDA carried out block plantation during 1999-2003 without approval of DFO, Khurda over 1161 ha in the forest area coming under his jurisdiction at a cost of Rs 2.17[5] crore out of EFC and GOI funds. The work was executed departmentally. No watch and ward was provided thereafter to maintain the plantation. It was decided (May 2006) to hand over these plantations to the DFO, Khurda for future management and protection, which however, is yet to be handed over as of April 2008. Joint physical verification by audit, officials of CDA and F&ED of four sites[6] covering plantation carried out (2002-03) in 106 hectares revealed no survival of all the cashew (8300) and bamboo (10000) plantations and scanty survival of 'babul' (5600) plantation. Execution of such work by the CDA without coordinated action plan involving the jurisdictional forest division relieved the officials of the concerned forest division of their responsibility for the plantation. Thus, the expenditure of Rs.2.17 crore on plantation became largely infructuous.

3.4.5.2 Improper maintenance of Plantation Journal / Muster roll

Complete details of plantation and labour charges not maintained

CDA had taken up departmental execution of plantation work in another 961 ha of land incurring expenditure of Rs 91 lakh during 2005-07. Scrutiny of plantation records revealed that the plantation journal did not indicate survival of the plants, their average height, taking up weeding out operations, materials used for plantation for the second and third year of plantation. Further, Muster rolls in support of payment of Rs 82 lakh to labourers engaged in plantation work were not maintained. Thus, due to improper maintenance of plantation journal and non maintenance of muster roll, the authenticity of expenditure could not be ensured.

3.4.5.3 Extra expenditure on excess provision for plantation

Forest department norm was not followed for plantation which led to extra expenditure of Rs 25 lakh

The CDA carried out plantation activities in catchment areas through the DFO, Khurda. During 2005-06, DFO, Khurda executed the plantation work with the norm of 62.5 mandays per ha during first year of plantation for natural regeneration (NR) plantations and 174 mandays for management intervention (MI) plantations for three years. During 2003-04, the DFO also executed 600 ha of plantation work with 122 mandays per ha for NR and 300 hectare for MI

[4] Large enclosed area by mud dikes and synthetic filament net wall for prawn culture.
[5] 1999-2000-(Rs.5.47 lakh) –40 ha. .2000-01-(Rs.29.14 lakh)-213 ha, 2001-02 –(Rs 35.71 lakh)-178 ha, 2002-03- (Rs. 80.64 lakh)-402 ha, 2003-04-(Rs.65.80 lakh)-328 ha.
[6] (i) Ankula padar : 50 hectare, Halanda : 25 hectare, Deogan : 11 hectare, Kolathadiha : 20 hectare

plantations at 260 mandays per ha. This resulted in extra expenditure of Rs 25 lakh due to excess provision of 59.5 mandays for NR and 86 mandays for MI plantations in 2003-04. The DFO, Khurda stated that plantation norm of Forest Department was adhered to for the work of 2005-06 where as during 2003-04 the work was executed as per norms provided by the CDA. The reply is not acceptable as the standard cost norm of the F&ED should have been adopted to avoid extra expenditure.

3.4.6 Conservation of biodiversity and genetic resources

The restoration programme of the lagoon's ecology broadly covered conservation of biodiversity and genetic resources through removal of un authorised encroachments termed locally as 'gherries' and fisheries resources development etc, control of siltation load through plantation in catchment area, improvement of communication network through ferry service, improvement of water exchange and salinity gradient through dredging etc

3.4.6.1 Eviction of encroachment

Total indifference of district administration to evict gherries in the lagoon.

An extensive area of the lagoon under illegal prawn culture through gherries of synthetic filament net enclosures and mud bunds constructed in shallow water in the lagoon was considered detrimental to its ecosystem. These gherries prevented migration of fish, prawn and crab juveniles during recruitment from sea to inner Chilika so also seaward breeding migration of mullets, sea bass etc. Most of the gherries were along the productive shoreline reducing traditional capture fishery area; the net and barriers also prevented free flow of sediments and its circulation which contained natural feed to the fish species. The earthen gherries in the fringe area lead to water logging in peripheral area. The CDA received Rs 45 lakh (2003-08) from the state government under the task force expenses for demolition of gherries of which Rs 21 lakh was irregularly diverted towards payment of salary and allowances of its staff and the remaining Rs 24 lakh was given to District Collectors (Ganjam, Khurdha and Puri) for the purpose. One excavator procured (February 2002) at a cost of Rs 16 lakh for eviction of gherries went out of order from April 2006.

During 1999-2008 demolition of gherries were undertaken by the above Collectors 24 times averaging twice in a year as detailed below:

Table-2 : Yearwise eviction of gherries by different Collectors

(*Area in acre*)

Year	Collector, Puri		Collector, Ganjam		Collector, Khurda	
	No. of operation	Area evicted	Number of operations	Area evicted	Number of operation	Area evicted
1999-2000	Twice	31132	-	-	-	-
2000-01	Twice	4075	-	-	-	-
2001-02	Once	8865	-	-	once	5.25
2002-03	Twice	9185	-	-	-	-
2003-04	4 times	7113	Once	4800	-	-
2004-05	Twice	34710	Twice	19800.380	Twice	440
2005-06	Once	5490	Once	12484 (12350 earthen dam)	-	-
2006-07	Twice	13421 (2100 earthen dam)	-	-	-	-
2007-08	-	--	-	-	once	1300
Total		**113991**		**37084.380**		**1745.25**

The Government instructed (March 2007) the district administration to ensure that the removal of gherries be consistent and frequent so that the expenditure made by the unscrupulous elements in making the gherries is rendered unfruitful. But it was seen that the Collectors (Khurda and Ganjam) had not demolished gherries even once in a year. Due to continued existence of gherries and absence of frequent and timely demolition of gherries well before harvesting season, the ecosystem suffered. The District administration attributed non removal of gherries to paucity of funds and non availability of excavators with the CDA.

3.4.6.2 Restoration of bird sanctuary

Restoration work was limited to sanctuary area

The Nalabana island covering 15.53 sq km within the lagoon had been notified (December 1987) as a bird sanctuary under the Wild Life Protection Act, 1972, and being managed by the Divisional Forest Officer (Wild Life), Balugaon. As per the information furnished to audit by the DFO, grants amounting Rs 3.68 crore received by him were spent during 2003-08 for undertaking various restoration measures of the sanctuary like providing watch and ward, holding of bird protection camp, providing perching facility, construction of mounds and ponds, renovation of creeks, maintenance of boats, buildings, payment of salary to staff etc. The data on census (April 2003 and March 2008) of the birds furnished revealed increasing trend in hosting the migratory birds in the Nalabana sanctuary. The total bird population within the Chilika lagoon which was 22 lakh in 1998 had declined to 4.54 lakh in 2003. It rose to 8.92 lakh in 2008 but was still 60 *per cent* less than population of 1998. The restoration measures should have been spread over entire lagoon instead of only to sanctuary area to arrest declining trend of bird population.

3.4.6.3 Conservation of dolphins

Illegal fishing and boating action in dolphin habitation area

The lagoon had been a habitat of small endangered riverine Irrawadys dolphins that inhabit coastal and estuarine waters of Asia, Philippines and Australia. The population of dolphins in the lagoon as reported (May 2008) was 138. However, there was threat to their life from illegal plying of tourist and fishing boats and accidental catch in fish and gill nets. As per State Environment Report (SER), 2006, a total 16 dolphin carcasses were recovered, which far exceeded natural mortality rate. The CDA/Government had not made any coordinated effort to curb illegal boating and fishing activities for conservation of dolphin population.

3.4.7 Under utilisation of assets

The assets created out of various Finance Commission grants for infrastructural development were under utilised or kept idle as discussed below:

3.4.7.1 Under utilisation of Ferry craft

A ferry craft was procured (July 2001) at a cost of Rs 1.21 crore to facilitate transport of vehicular traffic as well as passengers between Satapada and Janhikuda and was made operational (June 2002) which also acted as a bridge

to reduce the road length between Berhampur and Puri. The life of the craft was 20 years with a minimum of 300 working days per year. After running for two years up to 2004-05, it remained almost idle during 2005-08 as it ran for 104 days in 2005-07 and only one day in 2007-08. Thus during last three years (April 2005 to March 2008) its utilisation was only 12 *per cent* as it ran 105 days instead of minimum 900 days. An amount of Rs 7 lakh was spent on maintenance of the craft and its crew members during 2005-08 (craft: Rs 1.04 lakh, wages: Rs 5.90 lakh). The CE admitting the fact stated (February 2008) that the ferry service was continued with the two barges purchased out of Eleventh FC grants meant for eviction of unauthorised gheries since fuel and lubricant consumption of the barges was less compared to the ferry craft. Thus, the ferry craft procured at a cost of Rs 1.21 crore was kept idle and rendering the entire expenditure unfruitful.

3.4.7.2 Non utilisation of survey and patrolling boats after construction

The CDA paid (May 1999) Rs 23 lakh to the Director of Fisheries (Director) under the action plan component of fisheries resource development for construction of a FRP boat (Rs 15 lakh) and a Sona boat (Rs.8 lakh) for use in survey, patrolling and task force work in Chilika. The Director got two boats[7] constructed at a cost of Rs 34 lakh, but did not hand over the same to CDA for use in Chilika. While the FRP boat remained idle since construction (June 2001) due to its high running costs, the sona boat was being utilised by the fisheries department outside Chilika lake. The Director asked (March 2002) CDA to take over the FRP boat constructed at a cost of Rs 25 lakh after reimbursing the differential cost of Rs 10 lakh incurred by him on it. However, in absence of budget provision under subsequent Finance Commission grants the payment could not be made and the boat remained inoperative with the Director as of June 2008. Thus, the objective of using the boats for patrolling and survey etc remained unachieved for over seven years even after incurring an expenditure of Rs. 34 lakh.

3.4.8 Regulatory Issues

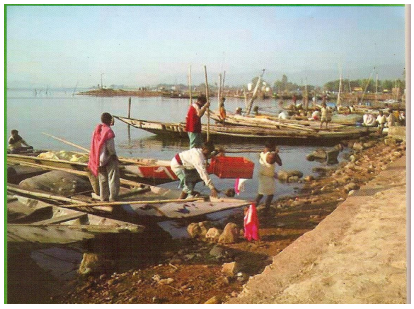
3.4.8.1 Illegal fishing

Illegal fishing remained unabated.

The Orissa Marine Fishing Regulation Act, 1982 envisaged prohibition of fishing using vessels which were not licensed by the Fisheries Department. It was noticed that the enforcement of the fishing activities through vessels vests with the Assistant Director of Fisheries (Marine), Puri for the area covered

[7] One fibre reinforced plastic (FRP) boat of Rs. 24.64 lakh for survey, one Sona boat of Rs 9 lakh.

under outer channel and Assistant Director of Fisheries, Balugaon, Khurda District for the remaining area of the lagoon. As stated by the latter, of 7190 boats (country and mechanised) engaged in fishing activities in the lagoon, only 4664 were licensed and the remaining 2526 were unauthorisedly engaged in fishing activity. However, these were not impounded nor any action taken against such persons violating the provisions of the Act. Besides, as per the notification issued (January 1988) under the Act, fishing in Chilika had been completely prohibited during the months of December and January and catching of prawns during the months of February and March in the outer channel of the lagoon when they remain in juvenile stage. However, the jurisdictional Assistant Director of Fisheries (Marine), Puri stated that the provisions of the Act were not being implemented in the lagoon due to lack of manpower and other infrastructure. Thus, slack enforcement of the provisions of the Act had been affecting the fish production as the recruitment of juvenile fish into the lagoon takes place during the above months.



3.4.8.2 Unauthorised plying of tourist boat

Unregulated traffic of tourist s disturbed ecosystem.

According to the provisions of Orissa Boat Rules 2004, no person can ply a boat to carry goods or passengers whether for hire or otherwise in the lake without registration of the boat with Registration Officer i.e. Assistant Director, Inland WaterTransport of the area. Indiscriminate plying of boats around the outer channel was noticed which posed serious threat to the biodiversity for they churn the lake bottom continuously leading to increasing turbidity. Joint physical verification (April 2008) of mechanical passenger boats by the CDA officials and audit at Satapada and Balugaon revealed that about 890 passenger boats were plying inside the lagoon carrying passengers out of which only 20 boats were registered with the 'Registration Officer'. Further, minimum revenue of about Rs 14 lakh towards registration fee chargeable for plying class II boats was not recovered. No coordinated efforts have been formulated by the CDA with the help of Tourism Department and Commerce & Transport Department to enforce restrictive tourism and also plying of unauthorised boats.

3.4.8.3 Absence of legal framework

CDA was without powers and resources

As envisaged in the Memorandum of Association, the CDA was to protect the lake ecosystem with all its genetic diversity and co-operate and collaborate with other institutions of the State for all round development of the lake. The activities and authorities enforcing the provisions of different Acts and Rules which are applicable to Chilika lagoon were as follows:

Table-3: Departments in charge of enforcement of different Acts

Activity	Acts and rules applicable	Department in charge of enforcement of the provisions Acts and rules
Regulation and registration of boats plying inside the chilika Lagoon for tourism	Orissa boat rules 2004	Inland Water Transport Department
Regulation and Registration of boats plying inside the Chilika lagoon for fishing purposes	Orissa Marine Fishing Regulation Act, 1982	Fisheries and Animal Resources Development (FARD) Department
Ptotecting, propagating and devolping wild life including birds, fish, dolphins and its environment - Nalabana Bird Santuary	Wild Life (Protection) Act, 1972	Forest and Environment Department through the DFO (WL) Division, Balugaon
Eviction of encroachment, leasing of water bodies for fishing activities etc.	Orissa Prevention of Land Enchrochment Act, 1972	Revenue Department through District Collectors
Extraction of minor minerals such as lime shells, silt etc.	Orisa Minor Mineral Concession Rules 2004	Revenue Department

These Acts together with rules framed by the State Government for different activities were being enforced by State Government Departments and the CDA although made responsible for restoration and protection of the lake eco system with all its genetic diversity has not been empowered to exercise any power or functions under any provisions of the above Acts and Rules to enforce the different regulating activities inside the lagoon.

3.4.9 Absence of tourism infrastructure development

The Chilika lagoon offers a plethora of tourist resources such as virgin beaches across sand bars, the immense biodiversity, scenic islands etc. However, it was not fully supported by adequate island and beach tourism facilities such as acquarium, museum, observatory and tourist resorts. During the 2003-08, the Tourism Department and CDA spent Rs 4.29 crore and Rs 98 lakh respectively for development of tourist activities in and around Chilika. These activities mainly included accommodation, conveyance and construction of Interpretation Centre. Government had not yet contemplated (April 2008) any perspective plan to develop the lagoon as a major coastal and eco tourist resort.

3.4.10 Man power management

Vacancy positions more than 50 *per cent*

The State Government in Forest & Environment Department sanctioned 11 posts (February 1992 and May 1996) of different cadres in favour of CDA and provided grants in aid under state plan for establishment expenses. It was however noticed that, the GB of CDA approved (1997-2003) the increase of staff strength to 40 as detailed in the ***Appendix - 3.6.*** Senior level posts like Additional Chief Executive, Executive Engineer, Senior Scientist, DFO was created without the approval of Government. Of the approved 40 posts, only 18 posts were under operation as on 31 March 2008. Thus, vacancy position constituted more than 50 *per cent*. With an area of 1165 sqm and activities like protection of environment ecosystem biodiversity, plantation and weed management, civil works, encroachments, regulation of fishing and tourist activities, survey and patrolling etc the size of the establishment was totally insufficient.

3.4.11 Monitoring

Indifference of various committees to hold meetings

The State Government constituted three committees viz. Chilika Environment Impact Assessment Committee, Executive Planning Body and Permanent Expert Committee to monitor the different activities undertaken in Chilika lagoon and their impact on eco-system, environment and prawn culture. While the first two committees were to meet once a quarter, the third committee was to visit the lake twice in a year. During 2003-08 no meeting / visit was conducted by these committees. Besides, the GB of the CDA, which was to sit once in every quarter to discuss and deliberate upon the activities of the CDA, met only twice during the above period. Thus monitoring mechanism though in place remained non functional.

3.4.12 Conclusion

The State Government established CDA to undertake multi dimensional and developmental activities without formulating a perspective plan and providing resource support and regulatory powers. The artificial mouth connecting sea opened in September 2000 widened ten fold for which no close monitoring and disaster management plan was put in place to address possible threat to villages in and around the lagoon. Action plan implemented with help of Central Finance Commission grants and GOI grants revealed deficient planning, doubtful execution of plantation work, under utilisation of assets created, inadmissible payment of escalation charges. With opening of artificial mouth to the sea, there was decline in fish production and disappearance of some fresh water species of fish. The restoration works for birds remained confined to the sanctuary area. Presence of gherries led to disturbance in eco system due to illegal prawn culture. Unregulated tourism and fishing activity led to pollution of environment. Soil conservation and plantation works; a major source of arresting siltation taken up during the year 2003-08 were implemented in uncoordinated manner warranting heavy recurring spending in future. Monitoring Committees constituted by the Government remained non functional.

3.4.13 Recommendations

- The State Government should devolve financial resources and regulatory powers on CDA and provide a long term perspective plan to restore and protect the eco system as well as develop the lagoon as a major coastal eco tourism resort.
- A legislative frame work should be in place authorising the CDA to regulate and enforce various activities in and around the lagoon and to establish it as a self sufficient autonomous body.
- Museum, observatory and aquarium as well as tourist infrastructure may be developed in and around the lagoon in Public Private Partnership mode if necessary.
- Monitoring Committees should be made functional.
- An Act on Fishing in Chilika should be in place to regulate the fishing activity.

FOREST & ENVIRONMENT DEPARTMENT

3.5 Implementation of project elephant in Orissa

3.5.1 Introduction

The introduction of the Wildlife (Protection) Act, 1972, provided a structure and mechanism for protection of wildlife in India. The elephant was declared as an endangered animal under the Act and a complete ban on ivory trade was imposed in 1991. Concerned at the primary need to restore the elephant habitats and reduce the suffering of both the elephant as well as the human population, the Government of India (GOI) launched a Centrally Sponsored Scheme called "Project Elephant" in February 1992. The scheme commenced in Orissa in September 2001.

Orissa accounts for nearly 74 *per cent* of the elephants in Eastern India, 10 *per cent* of the tuskers in the country and also records a large number of elephant deaths and human deaths due to increased Human-Elephant Conflict (HEC). The scheme aimed primarily at conservation and protection of viable populations of wild elephants in their natural habitat and restoration of natural habitats and traditional corridors used by the elephants thereby reducing the HEC.

"Project Elephant" was also concerned about management of smaller identified groups of wild elephants that became problematic to human life and property besides strengthening the anti-poaching infrastructure, research and monitoring.

The scheme was being implemented in Orissa by the Principal Chief Conservator of Forest-cum-Chief Wildlife Warden (Orissa), Bhubaneswar who was assisted by the Conservators of Forest, Baripada, Angul and Sambalpur as Nodal Officers at the circle level.

3.5.2 Project Area

Three Elephant Reserves (ERs) were notified in Orissa in the years 2001 and 2002 to define the prime elephant habitats and to launch various management interventions for conservation of elephants. The three reserves spread over 8509 sq. km. of geographical area, were Mayurbhanj ER (7043.74 sq. km.), Sambalpur ER (426.91 sq. km.) and Mahanadi ER (1038.30 sq. km.) with a habitat area of 4679 sq. km. The project area covers around 20[1] forest divisions.

According to the 2007 census, there were 1862 elephants in the State as follows:

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[*] Abbreviations used in this performance review have been expanded in Glossary of abbreviations at pages 234 to 238

[1] Angul, Athagarh, Athamallik, Bonai, Bamra (WL), Boudh, Baripada, Balasore (WL), Cuttack, Dhenkanal, Karanjia, Keonjhar (WL), Mahanadi (WL) Nayagarh, Rairakhol, Rairangpur, Sambalpur (N), Sambalpur (S), Satkosia (WL) and Similipal TR.

Sl.No.	*Name of the ER*	*No. of elephants*
i.	Mayurbhanj ER	528
ii.	Sambalpur ER	194
iii.	Mahanadi ER	595
iv.	Outside the ERs	545
	Total	**1862**

3.5.3 Audit coverage

Audit was conducted between February and June 2008, covering the five year period 2003-08 through test check of records in the Forest and Environment Department, Government of Orissa (GOO), Office of the Principal Chief Conservator of Forest (Wildlife)-cum-Chief Wildlife Warden, Orissa, Bhubaneswar, three[2] circles each headed by a Conservator of Forest and nine[3] selected Forest Divisions located within the Elephant Reserves, to assess whether the Elephant Reserves were duly notified and had proper management plans and adequate funds were made available to undertake the conservation and protection of elephants.

Audit findings

3.5.4 Planning

3.5.4.1 Management plan

In order to have proper management intervention for conservation of elephants, a long-term management plan was necessary. In June 2002, GOI requested GOO to finalise a perspective plan for the elephant reserves by March 2003. Although "Project Elephant" was formally launched in Orissa in September 2001, GOO was yet to prepare a perspective plan (March 2008) and the scheme was being implemented through *ad hoc* Annual Plans of Operation.

3.5.4.2 Annual Plan of Operation

The Annual Plans of Operation were being submitted to the Central Government each year without any long-term plan in place as required under the scheme. Absence of a long-term plan adversely affected the intended systematic management based on prioritised and specific items of work in the ERs.

An Elephant Management Plan for Rs 53.60 crore was prepared by the Chief Wildlife Warden and submitted to the State Government in December 2006 but no action was taken on this proposal.

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[2] Angul, Baripada and Sambalpur

[3] Angul, Athagarh, Baripada, Bamra, Dhenkanal, Keonjhar, Sambalpur, Satkosia Wild life Division at Angul and Similipal Tiger Reserve at Baripada

3.5.4.3 Notification of Elephant Reserves

Formal notification for creating an ER was required in order to receive funds from the Central Government for undertaking different measures for conservation and protection of elephants. GOO had notified three ERs[4] in 2001 & 2002 covering 932 elephants. With a view to conserving the remaining elephants and to obtain more central funds, the PCCF (WL) submitted a proposal (March 2004) for creating two new ERs[5] and rationalisation of boundaries of two existing ERs[6]. This was recommended and submitted by the State Government (April 2004) to the Central Government, which approved the proposal (February/November 2005) and requested the GOO to formally notify the boundaries of the proposed ERs. However, the State Government withdrew the proposal (July 2007) without citing any reasons. On being requested by the Central Government (August 2007) to reconsider this, the State Government intimated (May 2008) that if the proposal was accepted 25 *per cent* of the total geographical area of the State would be covered under the ERs, thereby affecting the socio-economic development of the state.

Audit scrutiny revealed that:

- The area proposed for ERs was already covered under existing forest laws and additional curbs over utilisation of land would not have been imposed since the ER was merely a management unit.
- The views of the PCCF (WL), Orissa that poaching of elephants would be controlled on such rationalisation was not considered. Audit observed that 56 elephants were killed due to poaching during the period under review, of which 39 incidents (67.8 *per cent*) had occurred outside the ERs.
- As per the 2007 census, only 1317 (70 *per cent*) of the elephants were within the ERs against the 90 *per cent* envisaged in the "Vision for the Future" document of the F&E Department.
- The South Orissa ER was proposed over an area of 4,216 sq km in Rayagada, Kandhamal and Kalahandi districts, while the Baitarani ER was to be spread over 10,516 sq km. covering four districts viz :- Keonjhar, Dhenkanal, Angul and Sundargarh.

Notification of the ERs would have focussed attention on conservation of elephants and enabled restoration of the habitats and corridors by obtaining more funds from Government of India under "Project Elephant". Besides many of the new mines and industries are either operational or coming up in these areas and the likely increase in HEC need to be controlled.

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4 Mayurbhanj, Sambalpur and Mahanadi

5 South Orissa and Baitarani

6 Mahanadi and Sambalpur

3.5.5 Financial Management

"Project Elephant" is a fully funded Centrally Sponsored Scheme. The funds received from the GOI and expenditure incurred by the implementing units under various components of the project during 2003-08 is detailed below:

(Rupees in lakh)

Year	Demand placed in APO	Funds received from GOI	Components of expenditure				Total Expendi-ture	Unspent balance
			Protection of Elephants	Protection of Habitat & corridors	Eliciting public co-operation	Support services		
2003-04	185.00	116.10	26.02	12.80	37.35	Nil	76.17	39.93
2004-05	250.00	137.96	19.08	19.60	91.15	20.63	150.46	27.43
2005-06	250.00	114.00	20.22	13.24	55.51	9.65	98.62	42.81
2006-07	258.00	153.94	16.00	27.97	114.30	28.45	186.72	10.03
2007-08	291.00	148.50	22.00	29.53	80.95	23.85	156.33	2.20
Total	**1234.00**	**670.50**	**103.32**	**103.14**	**379.26**	**82.58**	**668.30**	**2.20**

Scrutiny of expenditure shows that the State Government could not utilise the funds received in any of the financial years. As such, revalidation of unspent funds in subsequent years was sought as a matter of routine. Release of funds by the GOI at the close of the year was stated to be a major constraint in utilisation of the funds, alongwith acute shortage of field level staff to execute the work. Out of the total expenditure of Rs 6.68 crore, a major portion of Rs 3.12 crore (46 *per cent*) was utilised towards ex-gratia and compassionate payments in cases of loss of life and property owing to HEC.

3.5.5.1 Non achievement of financial targets

As per the project guidelines and conditions stipulated in sanction orders of the allotments made by GOI, the APOs should indicate the targets (physical and financial) for each ER. However, it was observed that the financial targets were projected in excess of the actual requirements in the APOs seeking more funds by projecting unachievable targets.

3.5.5.2 Irregular retention of funds

As per the project guidelines, the items of work in the APO were to be prioritised and executed and funds should not be retained without sufficient reason. Contrary to the instructions, it was observed that an amount of Rs 23.43 lakh was held in Forest Deposit during the year 2002-03, but utilisation certificate was submitted to GOI for the full amount.

Subsequently, an amount of Rs 13.32 lakh was utilised in 2003-04 leaving an amount of Rs 10.11 lakh still held under Forest Deposit.

3.5.5.3 Unfruitful expenditure

An amount of Rs 1.51 lakh was allocated by PCCF (WL) in 2002-03 in favour of DFO, Karanjia to raise plantations of browsable species in over 20 hectares of compact patch to improve the elephant habitat.

An amount of Rs 30,000 was spent in preparation of the nursery bed in 2001-02. The forest ranger of Badampahar forest range however reported planting of 32,000 seedlings of teak, sisoo and amla, which were not the intended plantation. At the end of the first year, only 15,000 (47 *per cent*) seedlings survived. The second year maintenance of Rs 60,000 was withdrawn and an enquiry was ordered to look into the reasons for the failed plantation. The enquiry report (April 2004) revealed that there was no trace of any plantation and the site was also not suitable for plantation.

Thus, due to raising of unspecified species not suitable for elephant grazing the expenditure of Rs 1.81 lakh was rendered wasteful.

3.5.6 Programme management

The large home range requirements of elephants necessitate conservation of vast forest areas and efficient management of the ecology of the habitat and migration routes.

3.5.6.1 Identification of corridors

The elephant is a long range animal and travels vast distances in search of food and water. With rapid industrialisation and population growth, the forested links between reserves and sanctuaries, called corridors, had come under increasing pressure. Elephant habitats in Orissa were being affected due to mining activities, particularly in the Keonjhar and Sundergarh areas and several inter and intra state migration corridors used by elephants had been destroyed. The forced restraint on their movement and the consequent confinement to small groups changed the elephants' behaviour and human-elephant conflict was on the rise.

The Planning Commission had identified acquisition and development of corridors as one of the thrust activities under "Project Elephant" for the 11th Five Year Plan. Audit scrutiny revealed that out of allotment of funds of Rs 1.26 crore made under "Project Elephant" towards protection of elephant habitat and corridors only Rs 1.03 crore was utilised and the expenditure under this component accounted for only 15 *per cent* of the total expenditure.

It was further seen that the Wildlife Trust of India had identified (2007-08) nine critical elephant corridors (six within the State and three inter state) in Orissa having interface in terms of mining, railway lines, roads, expansion of townships and irrigation canals etc. In January 2008, the PCCF (WL), Orissa instructed the Divisional Forest Officers to send proposals for acquisition of corridor. Further developments were awaited (March 2008).

3.5.6.2 Corridor links within Rengali Irrigation Project impact area

Rengali Irrigation Project posed a serious threat to a critical elephant corridor[7] in the State. GOI, while according environmental clearance to the project had stipulated (September 1987) that a wildlife management plan to

[7] Kanhei –Jena –Anantpur

protect the wildlife within the project area should be drawn up and implemented. The scheme was to be funded by the Water Resources Department while the Forest Department would execute it. Accordingly a scheme was formulated in 1996 with a financial outlay of Rs 25.15 crore by the Forest Department. Although the Water Resources Department deposited Rs 4.31 crore during 1998-99 and 2001-02 with PCCF (WL), the same remained unutilised and was kept in Forest Deposit (March 2008). The Forest Department attributed non-utilisation of the funds to the following:-

- A revised plan for Rs 26.85 crore was submitted by the PCCF (WL) in January 2008 on the instruction of the Forest Department which was awaiting approval of the State Government.
- Non-declaration of Kapilas Wildlife Sanctuary by the State Government against a proposal submitted by the department in July 2001.

The Government further informed (May 2008) that the plan was forwarded to the Water Resources Department for release of fund.

Thus, due to non-approval of the management plan and non-declaration of Kapilas sanctuary since July 2001, the intended purpose of restoring the elephant habitat and corridors stood frustrated and funds amounting to Rs.4.31 crore remained unutilised.

3.5.6.3 Non relocation of villagers from Satkosia Gorge sanctuary

Satkosia Gorge Sanctuary, situated in Mahanadi ER, has 99 revenue and three forest villages within its boundaries. A proposal was initiated (September 2004) to rehabilitate the inhabitants of one forest village (Raigada) involving 38 families so that the core area remained free from human interference. A joint verification by the Forest and Revenue department was undertaken in January 2007 for a piece of land measuring 87.44 acres for resettlement of 20 families. Although the land was found suitable, the Tahasildar, Angul subsequently did not agree to spare the land due to non-availability of village map. Thereafter, another piece of land measuring 22 acres was jointly verified in January 2008 and found suitable. However, the land had not been allotted as yet (May 2008) due to incomplete legal formalities.

Thus, due to lack of co-ordination between the departments in finalisation of land suitable for relocation, the villagers inside the sanctuary who were willing to shift could not be relocated since September 2004. The stress on wildlife habitat continued posing problems to animal as well as human life. Two persons were killed (2002-05) and 61.15 acres of crop was damaged (2002-06) resulting in ex-gratia payment of Rs 1.78 lakh (2002-06). Four elephants were also killed (2006-07) by the villagers in retaliation.

3.5.6.4 Disposition of forest staff for wildlife protection

"Project Elephant" did not provide for establishment of any officers and related infrastructure for administering the project in the State and wildlife

protection/conservation activities were required to be managed with the existing staff.

Out of a sanctioned strength of 803 forest guards in 13 wildlife divisions, there was shortage of 442 guards (55 *per cent)*. Test check of 10 forest divisions revealed that nearly 41 *per cent* of the frontline posts for staff like forest guards were lying vacant since October 2003 as detailed in ***Appendix- 3.7***. It would be seen that there was disproportionate age-mix in the existing staff. Of the existing forest guards, 42 *per cent* were above 50 years of age while the average age recommended by the Wildlife Institute of India for frontline forest staff was 18-35 years. Hence, deployment of aged forest guards could undermine conservation and protection efforts. Besides, there was no infrastructure to impart training to frontline staff in wildlife protection.

3.5.6.5 Increase in number of forest offences

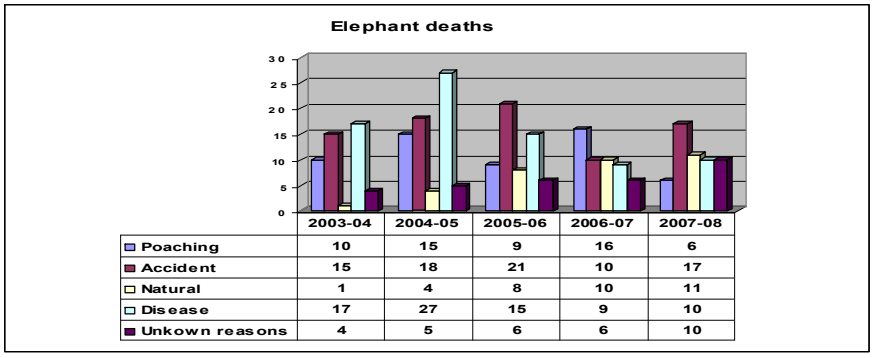
One of the major reasons for increasing HEC was the straying of elephants into human habitations due to loss of habitat caused by illegal felling of trees, coupled with other factors like rampant collection of sal leaves from the forests for leaf-plate making in prime elephant habitats like Dhenkanal, Narsinghpur, Satkosia, Athmalik, Sambalpur and Rairakhol and illegal collection and trade in non-timber forest produce such as Siali leaves, Bel fruits and various creepers which deprived the elephants of food.

In the test checked forest divisions it was observed that as many as 66,963 forest offences were registered between 2003-04 and 2007-08 resulting in seizure of 3.20 lakh cft of timber valuing Rs 9.04 crore. Besides, there were 40 cases of elephant poaching and 155 cases of poaching of other wild animals during the above period.

No special strike force had been created under the scheme on a permanent basis to combat forest offences. Patrolling was carried out occasionally when the situation demanded. Though 784 persons were arrested, none was convicted till date (June 2008).

3.5.6.6 Death of elephants

Elephant population in Orissa increased from 1841 (Census-2002) to 1862 (Census-2007). While this was encouraging, audit scrutiny revealed that there was a decline in elephant population in the Mayurbhanj ER (from 670 in 1979 to 528 in 2007) and in areas outside the ER (from 804 in 1979 to 545 in 2007). The decrease in the elephant population outside the ERs underlined the need for notification of the two proposed ERs and restoring the elephant corridors. During the period under review, 280 elephants died in the State due to various reasons as depicted in the following chart:



	2003-04	2004-05	2005-06	2006-07	2007-08
Poaching	10	15	9	16	6
Accident	15	18	21	10	17
Natural	1	4	8	10	11
Disease	17	27	15	9	10
Unkown reasons	4	5	6	6	10

Audit scrutiny revealed that the number of elephant deaths recorded each year during the period of review was higher than the number of cases recorded annually since 1990-91 (***Appendix-3.8).*** The average death cases increased from 32 per year during 1990-2003 to 56 per year during 2003-08.

Of the total number of 280 elephants' deaths during 2003-08, 56 were due to poaching (17 inside the ER and 39 outside) comprising of 39 tuskers, nine cows and eight calves. 81 elephants were killed in accidents due to factors such as electrocution (22), fall in trenches and ponds (18), infighting (17), wild animal attack (eight), lightning (seven), train accidents (two), flash floods (four), sunstroke (one) while reasons could not be established in two cases. Death of elephants due to disease was as high as 78 while there were 34 natural deaths. Reasons for the death of 31 elephants could not be assigned even after conducting post-mortem.

The main reasons for increasing elephant mortality were failure to combat poaching, destruction of habitat and corridors due to increasing mining activity, construction of roadways/ railways, lack of maintenance of high tension electric lines leading to death by electrocution and other factors like biotic interference and scarcity of food and water.

F&E Department, GOO requested (December 2006) the Director General of Police, Orissa to investigate the poaching cases since it was felt that organised poachers from inside and outside the State were involved. The Department could not furnish (May 2008) any information on the results of such investigation to audit.

3.5.6.7 Depredation of elephants leading to loss of human life / property

During the period under review, it was observed that there was frequent elephant depredation into human habitats in search for food and water. Due to such depredation, human beings were subjected to irreparable loss and misery. As many as 235 people were killed, 46 injured and 25 domesticated cattle killed, besides house and crop damage as detailed in ***Appendix - 3.9.***

It would be seen that the number of human casualties and injuries had increased drastically in 2006-07 and 2007-08 indicating failure in protection and conservation of natural habitats and traditional corridors used by the elephants.

3.5.6.8 Prevention and control of forest fires

Depredation of elephants into nearby human settlements was also caused by frequent forest fires. Loss of vegetation was bound to occur in such fires. To avert such fires and extinguish them on time, a trained team equipped with fire fighting equipment was necessary.

An amount of Rs 16.80 lakh only was spent (2003-08) in clearance of fire-lines and firewatchers. Due to inadequacy of funds, no planning was made to train the staff in fire fighting or for procurement of any fire fighting equipment. Though there were reports of forest fires in the test checked divisions, no assessment was made as to how many trees and animals perished.

3.5.7 Monitoring and evaluation

Proper management intervention was required to ensure achievement of the objectives of the project. The deficiencies and shortcomings were to be identified at different levels through effective monitoring and the outcomes evaluated for successful implementation of the project.

3.5.7.1 State Board for Wildlife

As per Section 7 of the Wildlife (Protection) Act, 1972 the State Board for Wildlife shall meet at least twice a year and advise the State Government in formulation of policy for protection of wildlife and specify the plans and measures to be taken up for harmonising the needs of the tribals and other dwellers of the forest for protection and conservation of wildlife.

Check of records in the office of the PCCF (WL) revealed that the State Board for Wildlife headed by the Chief Minister, Orissa was constituted for a period of two years vide Government resolution of September 2003. It met only once in November 2004 and became inoperative thereafter. A new body was constituted only in October 2007 for a two year term. The new Board has not convened any meeting till date (June 2008).

3.5.7.2 Inter-state Coordination Boards

The elephant requires a much larger home range than any other terrestrial animal and its migration stretches beyond the State boundaries. In order to mitigate any disputes in such migration, inter-state coordination of nodal officers was essential.

It was noticed that while such coordination meetings were frequently held by the Forest Department with their counterparts in Jharkhand and West Bengal, adjacent to the Mayurbhanj ER, these were held with departmental officials in Andhra Pradesh and Chhatisgarh only occasionally.

The migration of 11 elephants of Orissa (July 2007) into Andhra Pradesh (via Rayagada Division) posed a threat to their lives, as attempts were made to forcibly drive them back into Orissa, which was opposed by the Government

of Orissa. Subsequently three elephants died, two returned to Orissa and six elephants were still in Andhra Pradesh. A high-level committee had to be appointed by the Central Government to intervene in the dispute between the two Governments.

Out of 545 elephants lying outside the ERs, 99 were in the bordering districts of Andhra Pradesh and 93 were closer to Chhatisgarh. Therefore, there was a need to have coordination with all neighbouring States on a regular basis.

3.5.8 Conclusion

"Project Elephant" was mooted to conserve and protect viable population of wild elephants in their natural habitat in the country. Elephant Reserves were established for this purpose. The department had not made any long-term management/ perspective plan for the protection and conservation of elephants and thereby failed to receive adequate funds from GOI under the project. The corridors (forest links) were fragmented due to rapid industrialisation and population growth. No efforts were made to restore the corridor disrupted by the Rengali Irrigation Project. No special strike force was created to check poaching and destruction of habitat. Human-Elephant-Conflict could not be checked resulting in loss of lives with incidental and collateral damages.

3.5.9 Recommendations

- A long-term perspective plan should be in place to set out a roadmap for elephant conservation with due importance to protecting elephant habitats and restoring traditional corridors.

- Expansion of the existing Elephants Reserves and creation of new ERs should be considered to enable a focussed and systematic management of elephants and access to more funds under the project.

- Relocation of families from the core areas should be expedited to assure safety of both elephants and human beings.

The matter was reported to the Government of Orissa (August 2008); their reply had not been received (September 2008).

Revenue and Disaster Management Department

3.6 Information Technology Audit on Computerisation of Land Record Project (Bhulekh)

Highlights

The primary objective of Computerisation of Land Record Project to ensure systematic maintenance and retrieval of land records, thereby providing prompt service to the general public was only partially fulfilled. The software "BHULEKH" suffered from deficiencies like inadequate system design and inadequate input, validation and security controls. The presence of duplicate and blank records for tenants and case numbers rendered the data incomplete and unreliable and the inconsistent dates made the audit trail deficient. Deficient system design necessitated manual interventions which in turn created scope for human errors and even manipulations.

Even after 20 years of taking up pilot implementation and 10 years of project implementation, deficiencies still exist in the system. As a result, the intended objectives have not been achieved to the extent envisaged and benefits were not commensurate with the expenditure of Rs 31.60 crore incurred as of July 2008.

- ***The Project BHULEKH, suffered from inordinate delays in the implementation and non-completion of digitisation of cadastral map and up linking project.***

(Paragraph 3.6.6.2)

- ***Deficient system design led to manual interventions leading to presence of incorrect rent and cess, deficient utilisation of the system planned and incorrect and irregular correction of land records.***

(Paragraphs 3.6.8.)

- ***Absence of input and validation controls led to presence of inconsistent and unreliable data like presence of records without tenant names, duplicate plots, inconsistent dates and even negative land area.***

(Paragraphs 3.6.9)

- ***Lack of security controls made BHULEKH unreliable.***

(Paragraph 3.6.10)

- ***To sum up not only the utility of BHULEKH was limited, its reliability to generate authentic ROR or other certificates was also low.***

3.6.1 Introductory

Computerisation of Land Records (CLR), a centrally sponsored project with cent percent assistance from Ministry of Rural Development, Government of India (GOI), was implemented in the State since 1988-89 with the objectives

[*] Abbreviations used in this performance review have been expanded in Glossary of abbreviations at pages 234 to 238

of overcoming the systemic problem of inadequate and weak maintenance of land records, better implementation of rural development programmes, revenue administration by conferring legal status to the land record related documents, implementation of land reform policies, ensuring security to the land holders, redistribution of ceiling/surplus land, consolidation of holdings and updation of land records and issue of different certificates to the public through tehsils. The CLR with the development of a database of land records was intended to provide quicker storing, processing and retrieval of information. The Board of Revenue, Orissa (BOR) was the State implementing authority. As envisaged in the GOI's guidelines a State Level Steering Committee (SLSC) headed by the Member, BOR was formed for monitoring the progress of the project regularly during the period of implementation of the project. The CLR project consists of three major components (i) computerisation of record of rights (RORs), (ii) digitisation of cadastral maps and (iii) up-linking. The GOI released Rs 36.54 crore during 1988-2007 out of which Rs 31.60 crore was spent as of July 2008.

3.6.2 Organisational set up

Revenue and Disaster Management Department has a three tier system with the Department at the State Secretariat level as the hub, the Board of Revenue (BOR) headed by the Member assisted by the Director, Land Records and Survey (DLRS) and three Revenue Divisional Commissioners controlling almost all the matters relating to collection of revenue and disposal of revenue cases. The District Collectors and Tehsildars being the custodians of the record-of-rights (ROR) and cadastral maps were responsible for updation, preservation and maintenance of the same and were vested with the powers to initiate and dispose of mutation proceedings on land related matters.

3.6.3 Scope of audit

The scope of review included test check of records of the BOR, Cuttack, 22[1] out of 30 district collectors and 51[2] out of 171 tehsils from 2007 to May 2008 on implementation of the CLR project in the State (1988-2008).

3.6.4 Audit Methodology

Audit methodology included examination of different modules of Land Record Application Software (BHULEKH) designed by NIC with the help of MS-SQL Query Analyser. Records relating to the implementation of the project were also examined. The audit objectives and methodology adopted were discussed in an entry conference held (October 2007) with the BOR.

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1 Angul, Cuttack, Sambalpur, Jharsuguda, Jajpur, Mayurbhanj, Gajapati, Nuapada, Bolangir, Sundargarh, Keonjhar, Puri, Sonepur, Khurda, Dhenkanal, Ganjam, Nayagarh, Koraput, Kalahandi, Nawarangpur, Rayagada and Boudh

2 Cuttack, Narasinghpur, Salipur, Kishorenagar, Angul, Talcher, Sambalpur, Rairakhol, Jharsuguda, Lakhanpur, Jajpur, Sukinda, Baripada, Betnati, Gajapati, Nuapada, Bolangir, Sundargarh, Keonjhar, Kendrapara, Rajnagar, Daringibadi, Bhanjanagar, Buguda, Puri, Satyabadi, Sonepur, Binika, Khurda, Jatni, Bhubaneswar, Begunia, Bolagarh, Tangi, Dhenkanal, Kamakhyanagar, Chhatrapur, Khallikote, Aska, Nayagarh, Daspalla, Koraput, Kalahandi, Kesinga, Dharmgarh, Jaipatna, Nawarangpur, Rayagada, Boudh, Soro and Simulia.

3.6.5 Audit objectives

Audit objectives were to examine:

(i) planning before taking up the project;

(ii) economic and effective utilisation of funds received from the GOI and conformity of the same with the GOI guidelines and financial rules**;**

(iii) application controls built into the application system;

(iv) completeness, correctness and reliability of the data captured in the system;

(v) security of the application and data;

(vi) system of monitoring and evaluation of the implementation of the project and

(vii) whether benefits predicted from the project have been achieved.

Audit findings

3.6.6 Project Management

3.6.6.1 Project Proposal

As per the GOI's CLR guidelines, a project proposal was to be formulated for approval of GOI before implementation of the project. No such approved proposal was available with the State implementing agency. Only a budget plan for the project was available with the DLRS.

3.6.6.2 Implementation of the project

It was seen that though the pilot on the entire project was started in March 1989 by the DLRS, there was a delay in not only the completion of the pilot project but also the CLR project itself. The pilot project in the district of Mayurbhanj, where the implementing authority was the Orissa Computer Application Center (OCAC), could only be completed in February 2007 (over 17 years of delay) involving an additional expenditure to the tune of Rs 49.67 lakh, negating the possibility of any benefit accruing from the pilot project to the CLR, which itself was rolled out by 2004 in four phases.

Similarly, Computerisation of Record of Rights (RORs) at tehsil level included, procurement of hardware/software for tehsils, site preparation, imparting training to the tehsil staff, development of application software and computerisation/ entry of initial ROR data. The GOI's guidelines stipulated completion of the project within three years of release of first installment by the GOI and the project was to be made operational within one year of release of funds by State Government.

Test check of records of 51 tehsils revealed

(a) delay in release of funds of Rs 12.95 crore ranging from nine to 48 months for site preparation, procurement of software and hardwares,

(b) delay in completion of initial data entry by private firms from 10 to 72 months which was to be completed within 90 days from the date of work orders and

(c) development of 'BHULEKH' application software by the NIC by July 2003 instead of August 2000 resulting in postponing of actual operationalisation of BHULEKH in tehsils to July 2003.

Further, it was seen that the absence/ non-posting and frequent transfer of Assistant Settlement Officer and trained manpower attributed to accumulation of backlog of mutation cases in the tehsils for data entry. Thus, in 25 out of 51 test checked tehsils, ROR record correction and issue of ROR certified copies (CC) through the application were made possible only from 2005-06, even though, an additional sum of Rs 1.79 crore was released by the GOI to clear the backlog of data entry and start work online.

(i) The GOI's guideline required the Land Record Application Software (BHULEKH / e-BHULEKH) system to be developed with process reengineering and to achieve automation of entire process of land record transactions.

Incomplete automation resulting in continued dependency on manual system

In seven Tehsils[3], where the online-BHULEKH version was in operation, the case numbers were generated through computers only for mutation cases. In one tehsil (Dhenkanal) traditional manual procedure was still being followed even after online module was installed. Other cases (ROR and ROR certified copies) were being numbered manually.

In BHULEKH, the role of mutation module is in the form of correction of land records and issue of ROR (Patta) after the case was finalised manually on paper in the traditional manner. The information was fed into the computer when the case records were received by the Additional Settlement Officer/Additional Tehsildar in charge of computer cell along with the final order for record correction. This led to parallel operation of the land management system at tehsil level with the manual system in 39 out of 46 test checked tehsils where the online BHULEKH was not implemented.

(ii) The miscellaneous certificate module had the provisions to generate only caste certificates and residential certificates and did not have provision for generating other certificates like the ones for socially and educationally backward class (SEBC), legal heir, income, insolvency and certificate cases as provided in the Orissa Miscellaneous Certificate Rules, 1984 since Modules for the same were not developed.

(iii) Even though provision of issue of caste and residential certificate existed in BHULEKH, the same were issued manually typed through MS Word application in 39 tehsils because the module did not have link with the land record database.

[3] Angul, Chhatrapur, Cuttack, Dhenkanal, Kamakhyanagar, Keonjhar and Talcher

The DLRS while admitting above deficiencies in the miscellaneous certificate module stated (June 2008) that suitable software was being developed and supplied to the tehsils.

(iv) Uplinking was intended to build an extensive land information network by linking tehsils with Sub-divisions, district and State headquarter for proper monitoring of the CLR project.

Insufficient release of funds prevented completion of uplinking

On a test check of 22 districts, it was noticed that the work remained incomplete in six[4] districts and the same was yet to commence (July 2008) in three other districts (Puri, Jajpur and Nuapada). Further, hardware and software for the purpose was not procured and installed in district/sub-division data centres (July 2008) even though fund to the tune of Rs 4.19 crore released from the GOI were available.

(v) The digitization of cadastral maps involved the processes of digitization of map sheets through specific software developed for the purpose and its integration with the land record data base (BHULEKH data base) to generate digitized sketch maps as and when ROR transaction incorporated in the land record database. GOI sanctioned Rs.1.21 crore (1998-2000) to take up digitization of cadastral map in four tehsils (Koraput, Rayagada, Salepur and Narsinghpur) on pilot basis and as per the GOI guidelines, the work was to be completed by the end of 2000. The project of the computerisation of cadastral map was commenced between August 1999 and March 2002.

It was seen that in all the four tehsils digitization of cadastral maps remained incomplete as of July 2008 due to delay in entrusting the work to the firms by DLRS, non-capturing of updated maps as the maps supplied to firms were not updated at tehsils, failure in establishing link of digitized maps supplied by the firms with the database (BHULEKH database), lack of supervision and monitoring by the departmental officials.

3.6.6.3 Initial data entry

(i) It was noticed that in 7[5]test checked tehsils even initial data entry for 755 villages was not completed (July 2008) due to reasons like non-entrustment of work to the firm, over sight, damaged khatiyans, non-entry of data by the firms even though khatiyans were provided to them and lack of supervision by the concerned Tehsildars. As of now, the RORs relating to the above villages were being issued to the tenants manually.

(ii) On verification of RORs in Bhubaneswar Tehsil, it was noticed that the tenant names in 71 RORs were not readable and the data entry operator had entered junk entries for the tenant names during initial data entry from June 1999 to August 2001. However, no effort was made to correct/validate such data either at the initial stage itself or even over the years.

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4 Sambalpur, Bolangir, Kalahandi, Rayagada, Nawarangpur and Koraput

5 Gajapati(570 villages), Sukinda(40 villages), Buguda(1), Khurda(46), Rayagada(64), Sonepur(31), and Soro (3)

(iii) Test check of records of 51 tehsils showed that initial data entry was made in respect of 539 villages during the time of the settlement/consolidation operation as against the instructions of Government of Orissa. This necessitated re-data entry after final publication of RORs after the settlement resulting in wasteful expenditure of Rs.16.84 lakh.

3.6.6.4 Working environment

The GOI sanctioned Rs.1.50 lakh per tehsil for creation of tehsil computer cell (civil construction: Rs 70,000; air condition: Rs 30,000; electrical fittings: Rs 20,000; furniture and fittings: Rs 30,000). Visits to computer cells of 51 test checked tehsils revealed that 14 tehsil computer cells were functioning in poor working environment such as dilapidated buildings with cracks in the walls, water seepage from the roof, non-supply of three-phased electricity connection, absence of fire extinguisher and inadequate furniture. Due to these reasons, the systems often remained non-functional and in three Tehsils[6] there were accumulation of backlog of 62332 cases as of July 2008. Further, the existing systems in all the tehsils were not equipped with anti-virus software necessary to ensure security of land record data.

3.6.7 Manpower management

Mismatch in deployment of staff

As a measure to maintain continuity of the CLR project without any disruption, the State Government instructed (September 2000) all the district collectors that the trained staff in the tehsils engaged in the CLR project were not to be transferred or if transferred it was to be inter-tehsil. Further, as per the decision (December 2003) of the State Government, one Additional Tehsildar / Assistant Settlement Officer (ASO) was to be posted in each tehsil for holding overall charge of the computer cell and oversee the CLR project in respective tehsils.

In the test checked tehsils, there were instances of the computer trained senior clerks / junior clerks having been transferred to offices other than the tehsils. In 13 out of 51 test checked tehsils, the computer cells were functioning without computer trained staff, in four tehsils no ASO/Additional Tehsildar were posted. As a result, in ten tehsils there was accumulation of backlog and non-achievement of the objective of making CLR database online (July 2008). Further, it was seen that an amount of Rs 14 lakh was diverted from training cost for data entry and construction of training centre which could have been utilised towards imparting training to more tehsil staff so as to avoid the deficiency of trained personnel in computer cell of the tehsils.

3.6.8 System design

The GOI guideline stipulated development of land record application system with four important modules - (i) ROR certified copy module for generating certified copies of ROR, (ii) mutation module for correction of ROR and generation of ROR, (iii) miscellaneous certificate module for generating

[6] Soro (25142), Nayagarh(34875) and Daringibadi (2315)

miscellaneous certificates like residential certificate, caste certificate etc. and (iv) query module for retrieving various information as per requirement.

A test check was carried out in 51 tehsils. In 46 tehsils the database was made available to audit and in the remaining five the data could not be obtained due to power failure or absence of concerned staff at the time of audit. The results of the test check are as follows:

3.6.8.1 Rent and Cess calculations

BHULEKH did not have provision for calculation of rent and cess.

(i) The calculation of rent is dependent on area of land and rate of tax. Analysis of database revealed that there was no master data relating to region-wise rate of tax. So while finalising mutation cases on sale or purchase of a plot, such rent calculation was done manually and then keyed in to the system from the case records prepared by the clerk for mutation.

(a) It was seen that in 28 tehsils that there were mistakes in the total rent due to the incorrect initial data entry for total rent in 28385 number of cases. Further, in the absence of proper validation during data migration from dbase to SQL server the errors still existed in the database.

(b) It was also seen that during subsequent transaction of these lands, when a portion of plot was transferred to a new khatiyan, rent was to be input manually in both old and new khatiyans. Due to inadequate system design for rent distribution between the old khatiyan and new khatiyans(s) 48178 errors crept in to the database as the DEO did not rectify the rent of the old khatiyan by oversight.

(c) In respect of cess calculation, the system calculated it at the rate of 50 *per cent* instead of 75 *per cent*.

The above led to non reliance on the system for calculation of the rent and cess which was, therefore, being calculated and collected based on the manually maintained RORs. The wrong calculation and wrong cess as per the system, though, was exhibited to the public through the internet http://ori.nic.in/bhulekh.

3.6.8.2 Utilisation of system

As provided in the Mutation Manual, the history of the transactions was preserved by correcting the RORs using red ink. However, in the computerised environment, though the history of ownership of any land is available in the log files, no facility had been provided in the software to retrieve the history of land transactions. Further, it was observed that the software did not have any provision to view the details of 'Chhut Khata' as well. Thus, the Tehsildars could not use the computerised data in issuing the final ordeòr on mutation and had to refer to the manual records even though the data was available in the system.

3.6.8.3 Land Record Corrections

For making minor correction of the already updated records, record corrections were made using dummy case numbers/ blank case numbers/ existing case numbers etc. However, any correction to the vital land record data was to follow the process defined in the Mutation Manual by instituting a fresh regular case. This was not provided in the application.

3.6.9 Input control and Validation control

Input control ensures that the data received for processing are genuine, complete, not previously processed, accurate and properly authorised and data are entered accurately and without duplication.

IT applications may have further in-built controls which automatically check that data input is valid. Validation may also be achieved by manual procedures such as double checking input documents or review by a supervisor.

3.6.9.1 RORs without tenant names

Analysis of database of the 46 tehsils revealed that in 10 tehsils[7] there were 328 cases where tenant name did not appear in the ROR data containing plots of 269.633 acres of land. In the initial data these types of errors were in only 43 cases. As the BHULEKH software accepted blank tenant names due to absence of input control, these errors subsequently crept into the database.

3.6.9.2 Allotment of duplicate plots

Duplicate entries noticed due to data entry errors

Check of database of the 46 test checked tehsils revealed that there were 92662 duplicate plots in the same village. These included 2313 duplicate plots in the same Khatiyan (ROR). As per SRS, the plot No. was to be unique for each village. To an audit query the Tehsildars stated that some duplication was present in the source khatiyans from which data was initially entered and some due to double updation of the same transaction. The first type of error was made by the writer of the Khatiyans i.e. Amins and the second was a data entry and data updation error.

Further, during subsequent mutations after the settlement of land, the Tehsildars were to allot new plot numbers serially from the previous plot number of the series to the tenants. Analysis revealed that there were 23715 duplicate entries of such plots. On verification it was found that the software did not have any input control to check this kind of error. The duplicate entries of plots done manually by bench clerk were simply entered in BHULEKH and the wrong ROR was generated.

Thus, the deficient input control led to presence of duplicate plot numbers.

7 Angul, Aska,Bolangir,Buguda, Cuttack, Koraput, Nawarangpur, Narsinghpur(255 - 246.6200),Salepur, Satyabadi

3.6.9.3 Incorrect and inconsistent dates

Analysis of the downloaded data of the test checked 46 tehsils revealed the following inconsistencies in dates like date of institution of cases and order dates. Due to lack of input control the vital date fields like case institution dates and dates when orders for correction were passed were blank in the database in 276270 and 366479 records respectively. Further, due to lack of validation incongruent dates like date of passing order before institution of cases were also allowed into the system in 2566 cases and case institution date were same as the date of passing order in 5408 cases. This led to presence of unreliable data in the system.

3.6.9.4 Existence of negative land area

Appropriate processing control with correct input ensures output accuracy. Check of database revealed that the land area after transaction had been stored with negative values in respect of 29 cases in nine tehsils[8] out of 51 test checked tehsils. On this the Tehsildars replied that these were initial data entry errors. The reply was not acceptable as the transactions happened during subsequent updations after computerisation. It was further seen that this happened where the plot was divided and the various transactions on the plot were carried out for an area aggregating to more than the total plot size. The system generated a negative plot to compensate for the excess area transacted for. The system should have, instead, had a validation to prevent entry for transaction in excess of the total plot area, which was absent.

3.6.9.5 Duplicate and irrelevant case numbers

As per the system requirement specification prepared by NIC and approved by BOR, the case number would be numeric and unique for a year. Analysis of database of the 46 out of 51 test checked tehsils showed that there were 27302 junk case numbers (Non-numeric) and 26641 duplicate case numbers in the database which indicated absence of input controls.

3.6.10 Security

Maintaining effective security in an IS environment is a continuous process. Maintenance of logs and audit trails coupled with the physical and logical access controls support a robust IS security system.

3.6.10.1 Record correction

It was seen in BHULEKH that there was no control over the input of the dates for record correction/ updation and it was totally dependent on the system date of the client machines and their regional setting where the data was entered. When there was computer battery (CMOS) failure of the server or any client, the system date changed to default date of the computer system and the data entered / record correction made in that system during that period had illogical

8 Bhawanipatna(14), Bhubaneswar(2), Cuttack(2), Kamakhyanagar(1), Nayagarh(4), Nuapada(1), Rayagada(1),Sambalpur(3),Talcher(1)

dates. There was also no system of date synchronisation between the server and client.

As per SRS, record correction/updation by the Assistant Settlement Officer (ASO) was authenticated by the date and time stamp of the record correction field. There was no other log available in the system to identify the ASO who made the correction. An analysis of database revealed that in 116069 cases no dates were stored in the system even after corrections were made. Further, incongruent dates were also found in the system like dates prior to 1 June 1998 (before even initial data entry) in 15206 cases, dates before institution of mutation cases in 168 cases and dates before final order for corrections in 506 cases.

In the above situations, in case of transfer of ASOs, accountability of the actual record correction authority could not be ensured.

3.6.10.2 Inadequate logical access

Corrections to vital land record data was ensured by providing finger print scanners at tehsil level and the tehsils were provided with two such scanners each. Every updation to the database would require the finger print /password of the ASO of the Tehsil. As per system requirement specification (SRS), User ID in the database was to be saved as '3' after successful ROR correction by ASO. But analysis of database of 46 tehsils revealed that there were blank entries for the User ID in 44775 cases. On this, the Tehsildars stated that User ID was not saved in the cases where corrections were made through the client using password where there was no finger print scanner. Such use of password for record correction without using bio-metric device compromised access control, as bio-metric device ensured access to authorised individual only, especially, when two scanners were provided to ensure business continuity.

3.6.11 Deficient web page

As per GOI guideline, a web portal was developed for monitoring and supervision of the BHULEKH which provided ROR information to general public.

(i) The web site used drop down lists to enable navigation through the site. The drop down list contained options in Oriya. It was seen that the website was only compatible to Microsoft Internet Explorer where the Oriya font was readable but could not be read in any other browser i.e. Netscape Navigator, Mozilla etc or other latest operating system like Window Vista.

(ii) In addition to the above, the tenant name wise ROR search facility contained a drop down list where all the tenant names were populated without any order (ascending/descending). Selecting a particular tenant's name from the list for viewing his/her ROR was difficult. An alphabetical order in the drop down list could have made the internet experience easier for the user.

(iii) It could also not be found as to how many users had made use of the website in downloading of the RORs which was free of cost.

(iv) The number of tenants shown on the website was 2,60,09,447 whereas the number of households in Orissa as per the figures of the Census of India 2001 was only 77,38,065. Thus there was a risk that the system recognised one person as more than one tenant in the land record system. This called for unique identification of the land record holders, a system for which has not been planned.

(v) The navigation to the map was not possible after having selected district, sub-division, tehsil, police station and village, although the hyperlink was available. This made the experience on the website as much less satisfactory.

3.6.12 Other points of interest

Non-accountal of certificates

For the purpose of making the computer cells of tehsils self sufficient, Government of India suggested for collection of user fee from the beneficiaries to generate adequate resources to meet the running expenditure of the system and sustain the computer system in the Tehsil. Accordingly, the State Government formulated (September 2005) the policy for collection of user fee from the beneficiaries for issuing computerised ROR, miscellaneous certificates and RORs etc. The tehsildars collected the user fee as per the instructions. But the BHULEKH did not have the provision to generate the account of the amount collected against the issue of ROR and the other miscellaneous certificates. Scrutiny of records of 51 test checked tehsils revealed that there was discrepancy among the figures recorded in the copy registers maintained to register the number of applications received per day, cash book and the monthly progress report submitted to district collector for onward transmission to the BOR indicating possibility of revenue leakage in collection of user fee. In Angul tehsil where online BHULEKH was operational, it was noticed that number of ROR issued and accounted for in the cash book was lesser than the number reflected as issued in the BHULEKH database. Similar was the case in Jharsuguda tehsil for issue of miscellaneous certificates. The details are below:

Sl. No.	Name of the Tehsil	Type of case	Period	Number of cases recorded in database	Number of cases against which user fee was collected as per cash book/MPR
1	Angul	ROR Certified Copies	April 2007 to December 2007	4827	4296
2.	Jharsuguda	Miscellaneous Certificates	July 2006 to August 2007	2334	1135

While the Tehsildar, Angul stated that due to power failures, printer problems etc manual copies were issued even though data had been fed to the computer and no user fee were collected. The Tehsildar, Jharsuguda stated that the matter would be investigated and action would be taken accordingly. The reply of the Tehsildar, Angul was not acceptable since data entry was to be made only after collection of user fee which should find place in the cash book

figure. Further, in case of issue of manual ROR, the data was not required to be fed into the system.

3.6.13 Conclusion

The primary objective of CLR project to ensure systematic maintenance and retrieval of land records, thereby providing prompt service to the general public was only partially fulfilled. The software "BHULEKH" suffered from deficiencies like inadequate system design and inadequate input, validation and security controls. The presence of duplicate and blank records for tenants and case numbers rendered the data incomplete and unreliable and the inconsistent dates made the audit trail deficient. Deficient system design necessitated manual interventions which in turn created scope for human errors and even manipulations.

Even after 20 years of taking up pilot implementation and 10 years of project implementation, deficiencies still exist in the system. As a result, the intended objectives have not been achieved to the extent envisaged and benefits were not commensurate with the expenditure of Rs 31.60 crore incurred as of July 2008.

3.6.14 Recommendation

- The process of the land record management should be automated to minimise manual interventions.
- Incomplete works like the linking of databases, cadastral maps and the unlinking from individual tehsils should be completed in a time bound manner.
- The input and validation controls should be reviewed and built in to the system to ensure data integrity and reliability.
- Extensive training should be imparted to more operators as well as staff dealing with mutation who are to use the system.
- Adequate access control along with logs and audit trail should be planned for the varied users. Up-to-date antivirus packages may be provided to all centers.
- A provision to uniquely identify the tenants with their respective holdings may be evolved and built into the system.
- Wide publicity should be given so that common man is able to make use of the facility, especially through internet where no fee is charged for downloading ROR and the same could be used for the varied purposes of the users.