
FOREST, ECOLOGY AND ENVIRONMENT DEPARTMENT
3.5 Afforestation programme including compensatory afforestation
Highlights

The State, having a geographical area of 1.92 crore hectare had a recorded forest area of 44 lakh hectare in 2005. The forest cover in the State remained stagnant at around 36 lakh hectare during 2001-05. Implementation of afforestation programme was adversely affected due to inadequate release of funds, raising plantations without site specific plans, non-following the 'package of practices', under-utilisation of compensatory afforestation funds and slackness in monitoring.

State Government had not formulated any State forest policy. The target of afforestation in the Annual Plan of Operations (1.70 lakh hectares) was short of projections in the Working Plans (2.73 lakh hectares) due to low budget allocations.

(Paragraphs: 3.5.7 and 3.5.7.1)

The extent of forest cover of the State was not assessed which for the State, as per Forest Survey of India report, remained almost stagnant between 2001 (36.99 lakh hectares) and 2005 (36.45 lakh hectares).

(Paragraph: 3.5.9)

Seedlings numbering 3.73 crore were raised during 2002-07 beyond the time specified in 'package of practices', the adverse impact of which had not been assessed.

(Paragraph: 3.5.8.2)

The Department raised exotic species like acacia and eucalyptus in an area of 91 thousand hectares in violation of the approved working plans and without assessing its impact on the ground water and soil characteristics.

(Paragraph: 3.5.9.2)

Delay in transfer of compensatory afforestation charges after May 2006 to the Central pool resulted in loss of interest of Rs.13.52 crore to the Compensatory Afforestation Fund Management and Planning Authority fund. 'Net Present Value' recoverable from user agencies was under-assessed to the extent of Rs.3.26 crore by adopting lesser value of vegetative density in 11 cases.

(Paragraph: 3.5.9.4)

The status of plantations was not ascertainable in the absence of record of inventories and updated plantation journals.

(Paragraph: 3.5.9.5)

Monitoring of afforestation programme was not effective.

(Paragraph: 3.5.10)

3.5.1 Introduction

The State with a geographical area of 1.92 crore hectare (ha) had a 'recorded forest area'²⁹ of 44 lakh ha in 2005 which constituted 22.39 *per cent* of the geographical area. The National Forest Policy, 1988 envisaged a 'forest'³⁰ and tree cover³¹, of 33 *per cent* (63 lakh ha) by 2012 for maintaining the environmental stability apart from meeting the requirements of fuel wood, fodder, minor forest produce and small timber for the rural and tribal populations. Afforestation was taken up in the State under various State and Centrally Sponsored Schemes and under externally funded projects *viz.*, Forestry and Environment Project for Eastern Plains (FEEP) and Karnataka Sustainable Forest Management and Bio-diversity Conservation Project (KSFMBC) funded through loan assistance from Japan Bank for International Co-operation (JBIC).

3.5.2 Organisational set-up

The Department is headed by Principal Chief Conservator of Forest (PCCF) who is assisted by four Additional Principal Chief Conservators of Forest (APCCFs)³² at State level, four Chief Conservators of Forest (CCFs)³³ and 12 Conservators of Forest (CF) at Circle level and 37 Deputy Conservators of Forest (DCF) at divisional level. The overall supervision and administrative control of the Department is vested with the Principal Secretary, Forest, Ecology and Environment.

3.5.3 Audit objectives

The audit objectives were to assess whether the:

- budgeted funds were made available and utilised as per approved programme;
- Working Plans (WPs) and Annual Plans of Operations (APO) were drawn up in accordance with the objectives of afforestation and guidelines thereof;
- raising, distribution and utilisation of seedlings were done economically and efficiently and as per requirement;
- compensatory afforestation was carried out as per the provisions of law and Government of India guidelines;
- maintenance of plants was as per 'package of practices'/ guidelines and that record of assets created was properly maintained; and
- programme of afforestation was monitored and evaluated from time to time.

²⁹ Recorded forest area: Geographical area recorded as forest in Government records

³⁰ Forest cover: All lands more than one ha. in area with a tree canopy density of more than 10 *per cent* – not statutorily notified as forest area

³¹ Tree cover: Computed area covered by crown of trees that are too small to be delineated by digital interpretation of remote sensing data used for forest cover delineation

³² Working Plan, Personnel & Administration, Vigilance and Protection & Management

³³ Social forestry, Development, Western Ghat Project and Communication & Information

3.5.4 Audit criteria

The performance of afforestation programme in the State was assessed with reference to:

- Working Plans and Annual Plans of Operation;
- Departmental 'package of practices';
- Forest (Conservation) Act, 1980;
- Agreement with Japan Bank for International Co-operation and project reports;
- Rules and Guidelines issued under Forest (Conservation) Act, 1980;
- Codes and Manuals of the Department.

3.5.5 Scope and methodology of audit

The performance audit covering the period 2002-07 was conducted during February 2007 to June 2007 by test-checking records of the offices of Principal Secretary to Government, Forest, Environment and Ecology Department, PCCF and two³⁴ CCFs and 13 of 37 territorial³⁵ divisions. The sample selection was judgmental considering the magnitude of area covered under afforestation and expenditure incurred.

The audit objectives and criteria were discussed with the PCCF during the entry conference (February 2007) followed by discussion of audit findings with him in the exit conference (August 2007). The audit findings on the afforestation programme were based on the examination of records related to WPs, APOs, progress reports, sanctioned estimates, plantation journals, orders on diversion of forest land for non-forestry purposes, *etc.*

Audit findings

3.5.6 Allocation of funds and expenditure

Afforestation in the State is carried under various State plan/non-plan schemes, Centrally Sponsored Schemes (CSS) and externally aided projects. Funds in case of externally aided projects and CSS are provided through budget allocations by the State for subsequent re-imburement by the funding agencies through Central Government. The year-wise position of funds allocated, released and expenditure incurred there against for afforestation³⁶ for the last five years ending 2006-07 was as under:

Percentage of shortfall in release of allocated funds ranged from 16 to 40

³⁴ Social Forestry and Development

³⁵ Bangalore (Rural), Bangalore (Urban), Belgaum, Bellary, Bidar, Chitradurga, Gadag, Gulbarga, Karwar, Kolar, Mangalore, Mandya and Tumkur

³⁶ Includes compensatory afforestation

(Rupees in crore)

Year	Budget allocation	Funds released	Expenditure	Percentage of shortfall in release of funds vis-à-vis allocation
2002-03	98.88	58.91	57.83	40
2003-04	77.92	57.33	54.19	26
2004-05	57.57	45.36	42.01	21
2005-06	89.47	53.94	50.58	40
2006-07	129.40	108.51	102.47	16
Total	453.24	324.05	307.08	29

Percentage of shortfall in release of allocated funds during 2002-07, which ranged from 16 to 40, was mainly in case of FEEP (Rs.70.42 crore) and KSFMB (Rs.55.30 crore) projects reasons for which were not on record.

3.5.7 Afforestation management

The National Forest Commission, in its report (March 2006) had recommended that each State should have its own forest policy within the broad parameters of the National Forest Policy, 1988 for sustainable management of its forest. The Government had not formulated any State forest policy (March 2007). State Forestry Action Programme drawn up (May 1996) by the Department for a 20 year period 1997-2017 for conservation, rehabilitation and extension of forestry activities and forest management with people's participation had also not been approved by the Government. The Government, however, introduced (June 2002) a scheme of Joint Forest Planning and Management (JFPM) for promoting participation of people living in periphery of forest areas and making them joint stakeholders. Under the scheme, Village Forest Committees (VFCs) were to prepare management plans for development and protection of degraded forests.

VFCs numbering 201 were not assigned any forest area and were non-functional

Out of 1,893 VFCs³⁷ constituted up to March 2007 in 13 test-checked divisions, 201 VFCs though constituted prior to March 2005 had not been assigned any areas. In six divisions³⁸ (789 VFCs), no management plans had been drawn up and no memorandum of understanding executed in respect of 90 VFCs. Annual assessment of the working of VFCs had not been done in any of the test-checked divisions as envisaged in the project manual.

3.5.7.1 Formulation of Working Plans and Annual Plans of Operation

Afforestation is managed by drawing up WPs for a period of 10 years for each territorial division after undertaking field surveys. The WPs contain annual plans for conservation and protection of forest areas, improvement of degraded forests and reclamation of mined areas. These also outline the 'working areas' for afforestation in 'blank areas' or areas having a vegetation density³⁹ of less than 0.25 and 'protection and improvement' in areas having

³⁷ Includes 1,004 VFCs set up prior to 2002

³⁸ Bangalore (Rural), Bangalore (Urban), Belgaum, Gadag, Mandya and Kolar

³⁹ Vegetative density means *per cent* area covered by the canopy of trees. Also referred to as crown density.

vegetation density of 0.25 or more. The WPs are to be implemented by formulation of APOs which, *inter alia*, contain details of areas to be covered under afforestation and financial requirement thereof. The WPs are to be reviewed after every five years.

The WPs were approved by the Government for all the 37 divisions between 2001 and 2004. The WPs, however, did not project financial requirement for the identified activities which the PCCF agreed during exit conference to incorporate in WPs in future. Eleven WPs due for review in 2006-07 were not reviewed as of September 2007.

The target for afforestation was short of that planned in the Working Plans due to low allocation of funds

The targets for afforestation (1.70 lakh ha) in the State as fixed in the APOs were short of that planned in the WPs (2.73 lakh ha) for the years 2002-07 as budget allocations were insufficient to meet the WP targets. Besides, actual releases were even 29 *per cent* lesser during the period.

Lower allocation/release of funds for afforestation adversely affected achievements planned in the WPs/APOs.

3.5.8 Procurement of seeds and raising of seedlings

The Department, after procuring seeds, raises seedlings⁴⁰ in its departmentally managed nurseries for planting them in forest areas and for distribution to public and other agencies.

3.5.8.1 Procurement of seeds

The Department collects seeds of different species from trees identified in the forests which are supplemented by local purchases at the level of Range Offices for raising seedlings in its nurseries. As per 'package of practices', forest guards and watchers are required to collect seeds from the forests from the listed trees screened after identification by Range Forest Officers (RFOs). In eight test-checked divisions where information was made available, seeds costing Rs.23.06 lakh were purchased during 2002-06.

No record of species-wise quantity of seeds collected, dates of collection or purchase and quality checks exercised was maintained in any of the test-checked divisions. The Department had also not prescribed any mechanism to ensure that the seeds collected/purchased are subjected to quality checks.

3.5.8.2 Raising and distribution of seedlings

The position of seedlings raised by the Department during 2001-02 to 2005-06 and distributed for planting in subsequent years was as under:

⁴⁰ Acacia, kamara, honge, bevu, sandal, tamarind, eucalyptus, arali, tapasi, bage, nelli, *etc.*

(Number in crore)

Year	Number of seedlings raised in departmental nurseries for planting by the		Year	Number of seedlings distributed for planting by	
	Department	Public		Department	Public
2001-02	3.80	3.07	2002-03	2.87	3.39
2002-03	1.58	3.59	2003-04	1.43	3.57
2003-04	1.86	1.69	2004-05	2.64	2.24
2004-05	2.11	1.53	2005-06	3.16	1.41
2005-06	4.79	3.57	2006-07	5.83	2.72
Total	14.14	13.45		15.93	13.33

The number of seedlings reported as distributed for planting was more than those raised in the nurseries

The number of seedlings shown distributed for departmental planting (11.63 crore) during 2004-05 to 2006-07 was more than that raised and available from departmental nurseries (8.76 crore). The Department had not investigated the reasons for the variations. Following other points were noticed:

- Of the 1.68 crore seedlings raised during 2005-06 under the scheme 'Raising of seedlings for public distribution', 64 lakh seedlings only were distributed to the public during 2006-07. Thirty seven lakh seedlings were used for departmental planting and the balance 67 lakh seedlings were retained for distribution during 2007-08. Raising of excess seedlings in contravention of departmental instructions (August 2005) resulted in avoidable expenditure of Rs.57 lakh⁴¹ on their maintenance beyond one year period, besides adversely affecting their quality due to root coiling.
- The 'package of practices' requires that seedlings be raised by October of each year for planting them before July of the ensuing year. Delay in raising seedlings affects the survival and growth of planted seedlings. Of 4.96 crore seedlings raised during 2002-03 to 2006-07 in 11 test-checked divisions⁴², 3.73 crore seedlings were raised between November and March due to delay in release of funds. The adverse impact on the seedlings due to their un-seasonal raising had not been assessed.
- The Department took up construction of 17 mist chambers through Karnataka Forest Development Corporation Limited and Karnataka State Forest Industries Corporation Limited for raising clone seedlings which increase plant productivity. Advance payments of Rs.1.75 crore were released (March 2005) to the executing agency for completion of the work by April 2005. As of August 2007, only 15 mist chambers were completed. Delay in finalisation of tenders/location and change in design of mist chambers caused the delay in construction. Consequently, clone seedlings for increasing plant productivity were not raised.
- An expenditure of Rs.3.40 crore was incurred on purchase of seeds (Rs.23 lakh) in eight divisions and polythene bags (Rs.3.17 crore) in 13 test-checked divisions during 2002-07. However, no stock registers of seeds, fertilisers, polythene bags and other ingredients were maintained at divisional level in any of the test-checked divisions. These registers

⁴¹ Cost of maintenance has been adopted at the rate of Rupee.0.85 per plant

⁴² Bangalore Urban & Rural, Belgaum, Bellary, Bidar, Chitradurga, Gulbarga, Kolar, Mandya, Mangalore, and Tumkur

maintained at RFO level were incomplete as all transactions were not posted therein. In the absence of stock registers at divisional level and complete records at RFO level, adequate control over purchase and issue/consumption of inputs could not be ensured.

3.5.8.3 Avoidable expenditure on raising seedlings

Watering charges were paid in nurseries at higher rates which resulted in avoidable expenditure of Rs.41.54 lakh

Departmental Sanctioned Schedule of Rates provides different rates⁴³ for watering seedlings which are lower, where pipelines exist in a nursery than those where no pipelines exist. In eight of the 13 test-checked divisions, payments for watering seedlings in 85 nurseries where pipelines existed, were made to workers on cash payment basis at rates applicable for watering without pipelines on the ground that the pipelines were not functional. However, annual reports submitted by the divisional officers to the PCCF indicated that the pipelines were laid and functional in these nurseries. Making payments at higher rates resulted in avoidable expenditure of Rs.41.54 lakh⁴⁴ in eight divisions⁴⁵ during 2002-03 to 2006-07. In the exit conference the PCCF agreed to investigate the matter.

3.5.9 Afforestation

The Department carries afforestation in open and degraded forests and on non-forest lands which include Government waste lands, institutional lands, canals and roadside areas.

Forest cover in the State was almost stagnant

The actual increase in 'forest and tree' cover due to plantations in the forest areas was not assessed by the Department. As per Forest Survey of India reports, the extent of 'forest and tree cover' was 44.48 lakh ha in 2005 compared to 44.44 lakh ha in 2001 which represented 23.17 per cent of the State's geographical area. The forest cover alone also remained almost stagnant at 36.45 lakh ha in 2005, compared to 36.99 lakh ha in 2001.

3.5.9.1 Target and achievement

The targets and achievements under various schemes and externally aided projects⁴⁶ for planting seedlings and area covered under afforestation during 2002-03 to 2006-07 as per progress reports of the Department was as under:

⁴³ Varies from Rupee one to Rs.six per 1,000 seedlings

⁴⁴ Includes Rs.8.71 lakh in two divisions worked out at the minimum watering charges rate of Rs.1.20 per 1,000 seedling

⁴⁵ Bangalore Urban, Belgaum, Bellary, Bidar, Chitradurga, Gulbarga, Kolar and Tumkur

⁴⁶ Area Oriented Fuel wood and Fodder scheme (AOFF) a Centrally sponsored scheme, Development of de-graded forests (DDF) and Greening of Urban Area and Compensatory Afforestation scheme under State sector and externally aided FEEDP and KSFMBBC projects

(Number in crore)

Year	Number of seedlings planted				Area covered (lakh ha)	
	Targets		Achievements		Department	Public
	Department	Public	Department	Public		
2002-03	2.87	3.70	2.87	3.39	0.30	NA
2003-04	1.97	3.75	1.43	3.57	0.20	NA
2004-05	2.42	2.26	2.64	2.24	0.40	NA
2005-06	2.08	1.49	3.16	1.41	0.42	NA
2006-07	5.45	3.70	5.83	2.72	0.55	NA
TOTAL	14.79	14.90	15.93	13.33	1.87	NA

Records indicating location and survey number of areas covered by planting seedlings through public had not been maintained. Record of inspections made by departmental officers of the private farmlands and reports thereof were also not made available. The Department had thus, not monitored the effectiveness of distributing 13.33 crore seedlings (cost: Rs.14.66 crore)⁴⁷ to public for plantation during 2002-07.

3.5.9.2 Planting of seedlings

The WPs identified the areas for felling mature trees for subsequent afforestation. The planting of seedlings is required to be taken up within the areas earmarked in the WPs as per targets fixed in the APOs. Irregularities noticed in planting seedlings in deviation of WPs and prescribed norms were as under:

Planting seedlings in deviation of WPs and norms

The WPs prescribed carrying of afforestation in blank areas and areas having 0.25 vegetation density or less by block planting⁴⁸. Areas with more than 0.25 vegetation of density required only protection and gap planting so as not to suppress natural regeneration associated with block planting. In deviation of these norms, block planting was undertaken in three divisions⁴⁹ during 2002-03 to 2006-07 (cost: Rs.1.40 crore) in areas earmarked for protection and gap planting in the WPs. This resulted in avoidable expenditure of Rs.39.43 lakh on block plantation. The PCCF in the exit conference agreed that block afforestation in areas identified for gap plantation would adversely affect the regeneration of existing root stocks.

Avoidable expenditure of Rs.2.24 crore was incurred on planting excess seedlings

The number of seedlings to be planted per ha is required to be regulated as per approved norms fixed on the basis of plant species and site conditions which include vegetation density. Planting more seedlings than that prescribed would hamper the growth of the seedlings due to root competition. Under FEEP project, against 65.45 lakh seedlings to be planted (including casualties) over an area of 0.24 lakh ha as per norms, 72.82 lakh seedlings were planted during 2001-02 to 2003-04 in deviation of the norms. This resulted in avoidable expenditure of Rs.2.24 crore on planting and maintenance of excess

⁴⁷ Assessed for 5''× 8'' bag size seedlings @ Rs.1.10 per seedling

⁴⁸ Block planting means planting in compact blocks of forest area having vegetation density less than 0.25

⁴⁹ Bangalore Rural, Bellary and Chitradurga

seedlings. The Department had not assessed the adverse impact on account of excessive planting due to root competition.

Planting of exotic species

Plant species are required to be selected on the basis of soil characteristics, climatic conditions and other factors like maintaining bio-diversity and nativity of already grown species. WPs envisaged avoiding raising of exotic and fast growing species in areas other than fuel wood areas for maintaining sustainable local forest species. The growth of miscellaneous local species gets hindered when planted with the fast growing exotic species.

Exotic plant species were planted in larger area in violation of the Working Plan

During the period 2002-07 various species were raised and planted over an area of 1.84 lakh ha of which, 0.91 lakh ha was covered by exotic species like acacia and eucalyptus. The miscellaneous species like kamara, honge, neem, tamarind, nelli, tapasi, sissu, were planted over an area of 0.44 lakh ha and remaining area of 0.49 lakh ha was planted with timber species like teak, softwood, bamboo, canes, and sandalwood. The exotic species were raised without drawing site specific plans for each area. The selection of fuel wood species for each specific local area was also not based on the actual requirement of fuel wood.

In Belgaum Division, 105 ha area was covered by 1.60 lakh acacia seedlings and 0.09 lakh native species (cost: Rs.14.76 lakh) during 2002-03 and 2006-07 without drawing up site specific plans and making choice of species on the basis of soil characteristics in spite of WPs requirements of keeping the exotic species to a bare minimum.

In Karwar Division, of the total planted area of 4,664 ha, exotic acacia plantations were raised over an area of 2,986 hectares (64 per cent) during 2001-02 to 2005-06.

The Department had not assessed the impact of planting exotic species in violation of WPs/norms, on the hydrological cycle of ground water and soil characteristics.

Irregular replanting

Avoidable expenditure of Rs.13.17 lakh on replanting of seedlings

The WPs required that for sustainable growth, replanting eucalyptus trees in felled areas could be undertaken after three-ten-yearly⁵⁰ cycles of harvesting. Felling of trees is to be carried out in identified areas as per approved WPs and APOs of each Division subject to the condition that afforestation is carried out in the felled areas in the subsequent year unless approved otherwise by the Central Government.

Replanting of eucalyptus plants over an area of 136 ha (expenditure: Rs.13.17 lakh) was done in Bangalore (Rural) Division during 2002-03 (20 ha) and 2005-06 (116 ha) after first rotation of 10 years, contrary to

⁵⁰ Three-ten yearly cycles of harvesting involve extraction of matured eucalyptus plantations at the end of each ten year period

prescribed norms which resulted in avoidable expenditure of Rs.13.17 lakh. The DCF, Bangalore (Rural) stated that replanting in these areas was done by oversight.

3.5.9.3 Rehabilitation of degraded forests

The rehabilitation of degraded forests is done by undertaking gap planting and cultural operations for natural regeneration in 'working areas' as identified in WPs. Forests are protected from degradation by demarcating the forest areas and taking preventive measures against fire, encroachments and illegal mining and grazing.

Rehabilitation of degraded forest areas suffered due to paucity of funds

Of the total territorial forest area⁵¹ of 30.04 lakh ha in the State, the degraded forest area assessed (2001-02) by the Department was 8.63 lakh ha. The assessment was made on the basis of 'vegetation density' without assessing the level of degradation on the basis of parameters like depletion in soil conditions, moisture regime, nutrient availability, biomass production and capacity to regenerate. Besides, the Department had not assessed the extent of degradation which occurred after 2001-02. In 11 test-checked divisions, against 3.10 lakh ha identified in the WPs as degraded forest areas, only 0.24 lakh ha was rehabilitated by undertaking planting and cultural operations as planned in APOs. DCFs in reply (April-June 2007) stated that more areas were not taken up due to paucity of funds.

3.5.9.4 Compensatory afforestation

Forest (Conservation) Act, 1980 (Act) imposes restrictions for de-reservation of reserved forests and use of forest land for non-forest purposes for which approval is required to be obtained from the Central Government which is given subject to fulfilment of prescribed conditions in each case. The main condition governing such diversion is carrying out 'Compensatory Afforestation' (CA) on equivalent identified non-forest land and twice the area over degraded forests, if non-forest land is not available or is less available. Departmental instructions provide that CA should be taken up soon after land is diverted for non-forest purposes by recovering the cost at the prescribed rate in advance from the user agencies. In addition 'Net Present Value' (NPV)⁵² of the existing forests is also recoverable from 31 October 2002.

CA charges were to be kept in a separate bank account under the 'Compensatory Afforestation Fund Management and Planning Authority' (CAMPA) fund created (April 2004) at the Central level. CAMPA fund mainly comprises charges towards CA, 'Catchment Area Treatment Plan' (CATP)⁵³ and NPV of the forest land diverted. The fund is to be administered at the Central level by a Governing body headed by the Minister for Environment and Forests and at the State level by State Level Steering Committee (SLSC) headed by Chief Secretary and State Management Committee (SMC) headed by PCCF. However, pending creation of the post of Chief Executive Officer at the Central level, an *ad hoc* body for

⁵¹ Excluding wildlife areas

⁵² NPV is determined based on the quality and density of forests

⁵³ CATP: CATP works are carried as part of afforestation works

administering the fund was created (May 2006) on the directions from Supreme Court. In the State, while SLSC and SMC stood constituted (June 2004), the APO for carrying CA sent to Government of India (June 2006) was awaiting approval, reasons for which were not on record. CA charges received from user agencies, up to December 2004, were credited to 'Karnataka Forest Development Fund' (KFDF) and kept as Government deposit.

The accumulated balance of CA retained as Government deposits was Rs.361.22 crore as of December 2006. Of this, Rs.359.73 crore only was transferred (January/February 2007) to CAMPA fund of the Central pool. The balance, with further accumulation during January 2007 to March 2007 under the Government deposit, rose to Rs.156.14 crore. Reasons for not transferring the entire amount to the Central pool were not on record. Delayed/non-transfer of entire accumulated amount resulted in loss of interest of Rs.13.52 crore⁵⁴ for the period from May 2006 to August 2007 to the fund.

An area of 22,083 ha⁵⁵ forest land was diverted in the State for non-forest purposes as of September 2006. Against this, non-forest/ degraded forest land earmarked for CA was 16,632 ha of which 14,555 ha were afforested leaving 2,077 ha uncovered. The remaining area was not covered due to short allocation of funds for CA.

Short recovery of CA charges

CA charges of Rs.84.99 lakh were short recovered

CA charges of Rs.84.99 lakh in six cases of five⁵⁶ divisions were recovered short as per assessment details given in **Appendix-3.4**. In another case, CA charges of Rs.3.06 crore for diversion (December 2002) of 565 ha forest land (value: Rs.27.88 crore) was borne by the State Government and not recovered from the user agency *viz* Karnataka Industrial Investment and Development Corporation Limited for establishing Bangalore International Airport which in turn sub-leased the land to a joint venture company, Bangalore International Airport Limited. Charges on account of environmental loss were also not assessed for recovery by the Government as per the condition granting approval to diversion.

Under-assessment of NPV

NPV of Rs.3.26 crore was assessed short due to adoption of lesser value of forest density in 11 cases

NPV as part of CAMPA charges is to be assessed and recovered at the specified rates of that range, from Rs.5.80 lakh to Rs.9.20 lakh per ha depending upon the type of forest land and density of the forest. The NPV was, however, calculated in 11 cases⁵⁷ taking the density value lower than that mentioned in the proposals sent to Government of India for obtaining approval for diversion of forest land. Adoption of lesser value of forest density resulted in under-assessment of NPV by Rs.3.26 crore of which, Rs.2.89 crore

⁵⁴ Calculated at the rate of 4.5 per cent

⁵⁵ Excluding encroached forest land of 14,849 ha

⁵⁶ Bangalore (Rural), Belgaum, Bidar, Gadag and Mangalore Divisions

⁵⁷ In Belgaum, Bellary, Chitradurga, Davangere and Tumkur Divisions

pertained to 10 private agencies and the balance Rs.37 lakh pertained to a Government department. Reasons for adoption of lesser density by the respective DCFs were not on record. PCCF in the exit conference stated that the matter will be examined.

Diversion of CA charges

DCF, Belgaum, under directions from Government of India, executed (1999 to 2007) CATP works in 440 ha of forest land for overcoming environmental impact due to setting up of a hydro-electric project in Maharashtra. Funds amounting Rs.1.39 crore were received (2000 to 2007) for the purpose from Government of Maharashtra. The CATP works⁵⁸ (estimated cost: Rs.78.76 lakh) were executed (expenditure: Rs.1.39 crore)⁵⁹ by splitting the estimates so as to keep them within the delegated financial powers of the DCF without including them in the APOs of the Division. The area covered included an area of 95 ha (expenditure: Rs.29.45 lakh) falling under the catchment area of Malaprabha river which was outside the project's catchment area. Undertaking the works outside the project area resulted in diversion of CA funds of Rs.29.45 lakh, reasons for which were not on record.

3.5.9.5 Maintenance of plantations

Plantations raised under FEEP project provided for their maintenance ranging from three to five years from the year of planting. As per 'package of practices', each Range Office is required to maintain an overall inventory of old and new plantations indicating village, survey number, year of plantation, species planted and their survival status.

The status of plantations was not ascertainable in the absence of record of inventories and updated plantation journals

The inventory of plantations was not maintained in seven⁶⁰ of 13 test-checked divisions. The plantation journals maintained in the remaining divisions, did not indicate the survival rate of plantations beyond the planting year and there were no reports of periodical inspections except in Karwar Division. Test-check of sample of 533 'plantations' raised during 2002-06 (expenditure: Rs.13.83 crore) indicated that the soil characteristics were not recorded in respect of 153 'plantations' (area: 2,416 ha) while details of previously existing species were not recorded in respect of 136 'plantations' (area: 2,002 ha).

Of 84 lakh seedlings planted (area: 0.20 lakh ha) under the FEEP project during 2001-02 to 2003-04 (expenditure: Rs.18.53 crore), 80 lakh seedlings (0.10 lakh ha) planted were not maintained in subsequent one to three years as no funds were sought while preparing budget estimates or were not made available after the expiry of project period (2004-05). In Chitradurga Division, plantations (77,505 seedlings) raised over an area of 65 ha in 2002-03 (expenditure: Rs.5.77 lakh) under Centrally sponsored scheme of Association of Scheduled Tribe & Rural Poor in Regeneration of Degraded

⁵⁸ Includes afforestation (305 ha), contour trenches (7,000 cum), check dams (10 numbers), gully plugging (300 numbers) and raising grass plots (100 ha).

⁵⁹ Including maintenance expenditure

⁶⁰ Bangalore Rural and Urban, Belgaum, Bidar, Gadag, Gulbarga and Kolar

Forests on usufructs basis were maintained only for two years instead of three years due to discontinuance of the scheme after 2004-05. The adverse impact on the survival and growth of plants could not be assessed due to non-maintenance of relevant records.

In the absence of record of inventories and survival rate, the Department did not maintain the record of plantation assets created and monitor their growth-status. In the absence of record of soil characteristics and details of previously existing species, the Department had no mechanism to monitor and verify that seedlings were raised and planted according to site specific conditions. The DCFs in reply while admitting the shortcomings, issued instructions (June/July 2007) directing Assistant Conservator of Forests and RFOs to update the plantation journals.

3.5.10 Monitoring and evaluation

Monitoring of afforestation in the State was confined to obtaining monthly reports of physical and financial achievements and holding monthly meetings at different levels which were ineffective in the absence of addressing issues like survival rate of plantations, ensuring correctness of the figures of achievement reported and obtaining reports of inspections made for taking remedial action. The CF as a nodal officer did not monitor adherence to the conditions of approval for diversion of forest land and survival rate of CA plantations. Review of fulfillment of the conditions of approvals for diversions on account of mining was also not done.

The departmental evaluation report (July 2005) of plantations raised during 2002-04 while indicating a survival rate ranging from 4 to 100 *per cent* pointed out that the survival rate was low for indigenous species due to poor soil and site conditions, planting of non-suitable species and damages due to fire, weeds, pathogen attack and drought condition. It also pointed out that CA was done without proper choice of species, identification of site and planting pattern.

The report (September 2005) of implementation and evaluation of plantations raised during 1997-98 to 2004-05 under FEEP project made through an external agency after their field survey had pointed out that the survival rate ranged from nil to 100 of which it was less than 50 in 23.3 *per cent* of the plantations. The low survival rate was attributed to various reasons that included drought conditions during 2001-04, root competition, biotic pressure, lack of protection and poor maintenance.

No follow up action had been taken on the findings of the evaluation reports, reasons for which were not on record.

3.5.11 Conclusion

The Government had not formulated any forest policy for sustainable management of forests. The targets set in APOs for afforestation were quite lower than those planned in the WPs due to insufficient budget allocations. Afforestation was adversely affected due to absence of quality checks on seeds procured, raising and planting of seedlings in deviation from 'package of practices'/norms and planting exotic species without site specific plans. Inventory of plantations was not maintained in all the test-checked divisions. Plantation journals were maintained, did not monitor the survival rate beyond the planting year. Ineffective monitoring and non-utilisation of CA funds also affected the implementation of the scheme.

3.5.12 Recommendations

- Budget allocations should be released in full in accordance with the requirement of afforestation activities which should be planned after adopting a State forest policy and committing funds for it.
- It should be ensured that seedlings are raised in all cases as per the 'package of practices' and planted according to site specific plans.
- The plantations raised should be maintained for the prescribed period and survival rate of plantations beyond the planting year recorded in the plantations journals.
- Correct assessment of various components of CA charges should be ensured by putting in place a system of cross check.
- The findings of the evaluation reports need to be deliberated and follow up action taken within a time frame.

The above points were reported to the Government (August 2007); their reply had not been received (October 2007).