### **CHAPTER – IV**

### AUDIT OF TRANSACTIONS

This chapter contains audit paragraphs on wasteful/nugatory expenditure, avoidable/excess expenditure, idle investment and blockage of funds that came to notice during the audit of transactions of the Government Departments. The chapter also contains comments on lack of response to audit findings.

4.1 Wasteful Expenditure

### WATER RESOURCES DEPARTMENT

### 4.1.1 Unfruitful salary expenditure on work charged staff

Failure of the Department to redeploy surplus manpower resulted in an unfruitful expenditure of Rs.3.80 crore.

Works Division IV (Mechanical) under the Department, which was created for the purpose of executing Selaulim Irrigation Project and Command Area Development, was wound up in October 2001 and 108 technical staff<sup>•</sup> of this division were transferred to Works Division III (under the same Department) with effect from May 2002 along with the posts.

Audit scrutiny revealed that the work charged staff transferred from Division IV was idle since the date of transfer. There was no specific addition to the workload of Division III since the year 2002-03. The total expenditure incurred on the pay and allowances of the staff transferred from Division IV during May 2002 to March 2006 was Rs. 3.80 crore.

The Department accepted (June 2006) that the staff was surplus and stated that a proposal to redeploy them on a Hydrology Project was under consideration. Thus failure on part of the Department to redeploy the surplus manpower for a period of four years, resulted in unfruitful expenditure of Rs. 3.80 crore<sup> $\infty$ </sup>.

The matter was referred to Government (June 2006). Their reply is awaited (November 2006).

Supervisor = 2, Work Asst.=1, Driver = 10, Mechanic Gr. I = 5, Gnagi reader = 1, Dump operator = 2, Senior operator = 2, Bull dozer operator = 11, Auto electrician = 2, Pump operator = 1, Asst. Mechanic = 4, Asst. operator = 4, Mechanic helper = 12, F.P.O. = 2, Compressor operator = 2, Foreman (Mechanic) =1, Store keeper = 1, Tin smith = 1, Mechanic Gr. III = 6, R.R. Operator = 4, Belder = 2, Watch man = 6, Sweeper =7, Rig operator =1, Khalasi = 3, Tech. Asst = 2, Junior Engineer = 8, Head Clerk = 1, Draughtsmen Gr.III = 3, LDC = 1.

<sup>&</sup>lt;sup>∞</sup> No. of WC staff pertaining to Division IV, transferred to Division III and their pay and allowances during (i) 2002-03 was Rs.92.74 lakh for 108 staff, (2) 2003-04 was Rs.95.85 lakh for 84 staff, (iii) 2004-05 was Rs.90.25 lakh for 83 staff and (iv) 2005-06 Rs.100.95 lakh for 75 staff aggregating to Rs.379.79 lakh for four years. Reduction in strength of staff is due to retirement.

### PUBLIC WORKS DEPARTMENT

### 4.1.2 Wasteful expenditure on consultancy charges

# Expenditure of Rs.18.17 lakh incurred by State PWD on preparation of feasibility study on a Central Government Project without the approval of the concerned Ministry rendered the expenditure wasteful.

The State Public Works Department through the Superintending Engineer, Division IX(NH), submitted (September 2002) estimate of Rs.50.85 lakh for "Consultancy services for preparation of feasibility studies for construction of four lane bridge including approaches across river Talpona and Galgibag on NH-17" to the Government of India, Ministry of Roads Transport and Highways (MORTH). The Ministry returned (October 2002) the estimates on the ground that the work was not included in the Annual Plan 2002-03. In spite of this, the State government sanctioned Rs.53.93 lakh (February 2003) towards consultancy fees for preparation of feasibility studies for construction of four lane bridges including approaches across River Talpona and Galgibag on NH 17. The work of preparation of feasibility studies was awarded (July 2003) to M/s Dalal Mott Macdonald for Rs.22.72 lakh to be completed by October 2003. The draft feasibility report furnished by the Agency was submitted to the Ministry in December 2003 and the agency was paid Rs.18.17 lakh (September 2004) being 80 per cent payable against submission of draft feasibility report.

Audit scrutiny revealed that feasibility report submitted by the State Government was not approved by the MORTH as the four laning of the stretch of NH-17 from Mapusa to Margao was taken up by the MORTH under Build Operate and Transfer (BOT) scheme and the consultants were also being arranged by them as per the policy decision already taken by the MORTH. Thus the expenditure of Rs.18.17 lakh incurred by the State PWD on consultancy for preparation of feasibility report on a Central Government Project without their approval proved wasteful.

The matter was referred to Government in August 2006. Their reply is awaited (November 2006).

### **RURAL DEVELOPMENT DEPARTMENT**

### 4.1.3 Nugatory expenditure on surplus staff

### DRDA's failure to re-deploy surplus staff resulted in nugatory expenditure of Rs.38.49 lakh.

Prior to 1999-2000, the Administration cost of the Rural Development Agency (RDA) was met under different schemes which were being implemented. The expenditure on pay & allowances of the staff was debited to the schemes under which they were recruited. RDA (North) was functioning with 53 staff members upto March 1999 when, the Administrative set up of RDAs was changed to District Rural Development Agencies (DRDAs) with specific

pattern of staffing based on number of blocks under each district. Accordingly, North Goa district having six blocks was categorized, as 'B' category as on 1 April 1999 with total entitlement of 47 staff. This resulted in four Gram Sevikas, one Driver and one peon becoming surplus. As per GOI, Ministry of Rural Development guidelines (1999) on DRDA Administration, in respect of staff currently borne on DRDA, the State Rural Development Department should have drawn 3-5 year plan for absorption of the staff into the line Department. Audit observed (February 2006) that the North Goa DRDA continued to retain the surplus staff. Accordingly, the total expenditure unauthorisedly incurred by the North Goa DRDA on surplus staff since April 1999 to March 2006 worked out to Rs.38.49 lakh.

In reply it was stated (February 2006) that, as all the surplus staff were recruited by the RDA, they had to be paid by the DRDA from the State funds and services of the surplus staff had been utilized to spread awareness of the schemes and preparation of cases at the village and hamlet level. The reply is not tenable, as the full sanctioned strength has been deployed to take care of all these requirements. Re-deployment of surplus staff to other departments could have avoided nugatory expenditure of Rs.38.49 lakh towards pay and allowances for the staff which had been deployed over and above the sanctioned strength.

## 4.2 Idle Investment/Idle Establishment/Blockage of funds, delay in commissioning equipment; diversion/ misutilisation of funds

### PUBLIC WORKS DEPARTMENT

### 4.2.1 Blocking of funds on purchase of pipes

### Purchase of pipes for water supply in excess of requirements resulted in blocking of Rs.88.27 lakh.

The State Government accorded (March 2004) administrative approval and expenditure sanction of Rs.4.80 crore for the work of providing, laying and jointing of 400 mm diameter Ductile Iron (D. I.) pipe for conveying water from Ambaulim (A) to Balli (B) sump, for improving water supply from Balli to ONGC, <sup>•</sup> Betul in Quepem Taluka. The original alignment of the pipe line was estimated for a distance of 10,000 mtrs., and accordingly the Executive Engineer, Division XII, Sanguem placed (July 2004) supply order for pipes with Director General Supplies & Disposal for procurement of 10,000 mtrs. 400 dia. D. I. pipes and another 250 mtrs. for maintenance. The actual quantity received was 10,246 mtrs. (August/September 2004) at a cost of Rs.3.19 crore. Audit scrutiny (January 2006) revealed that the detailed estimate approved by the Chief Engineer-I (November 2004) much after the pipes were ordered and also received, had provided for only 9,000 metres of

<sup>\*</sup> ONGC - Oil and Natural Gas Corporation

the pipeline against the original length of 10,000 m. The length of the pipeline changed as the Department had prepared the original alignment along the road between "A" and "B" whereas the detailed estimates prepared were based on the distance along the Irrigation Canal. The work of laying the pipe line was awarded<sup>\*</sup> (February 2005) to the lowest tenderer for Rs. 1.76 crore, with the stipulated date of completion as October 2005. Work was completed and commissioned in April 2006 and the actual quantity of D.I. pipes utilised was 7409 metres (including 250 m. pipes required for maintenance). Thus a quantity of 2837 m. (10246 - 7409) of pipes purchased in excess, remained unutilised, resulting in a blocking of funds of Rs.88.27 lakh<sup>\*</sup> for nearly two years.

The Executive Engineer in reply stated (January 2006) that the balance pipes would be utilised for the proposed work of 400 mm. Dia. Pipe line from Balli pumping station to Barcem Sump under the jurisdiction of PWD Dn. XX, Margao. The reply of the Division is only an afterthought as there was nothing on record that the pipes procured were to be used for two works. Besides, enquiries with the Margao Division revealed that the Division had not even proposed taking up the said work (May 2006).

Thus procurement of pipes in excess of requirement due to non preparation of detailed estimates resulted in blocking of government funds to the tune of Rs.88.27 lakh.

The matter was referred to Government in May 2006. Their reply is awaited (November 2006).

### 4.2.2 Idle investment on office building

The office building constructed at a cost of Rs. 80.18 lakh remained unused for two years due to non completion of approach road and resulted in avoidable expenditure of Rs.6.29 lakh on rent.

The Chief Engineer, PWD accorded (March 2001) administrative approval and expenditure sanction for the work of "proposed office building at Quepem for the (Phase-II)" for Rs.1.40 crore based on preliminary estimates. The proposed building was to accommodate some of the Government offices at Quepem<sup> $\infty$ </sup>, which were functioning in rented private premises. The work was tendered in May 2001 and work order was issued in August 2001. The work stipulated for completion in February 2003 was actually completed in June 2004 at a cost of Rs.80.18 lakh. Extension of time limit without compensation was granted due to delay of one year and four months on the part of the Department in (i) taking decision on conversion of ground floor for commercial use and (ii) approval of 12 extra items for Rs.6.74 lakh. As the development works like approach road, compound wall, site clearance etc. were not incorporated in the original

excluding purchase of pipes

<sup>\*</sup> Rs.3111.53 x 2837 m

<sup>&</sup>lt;sup>∞</sup> Collector South Goa (Ground Floor), Water Supply PWD, PWD SDII, ZAO, Survey and Land Records, RTO, Town & Country Planning, Collector South Goa(Third floor).

sanctioned work, the building could not be put to use immediately on completion of work (June 2004).

The Collector (South Goa) also did not take possession of the building, as the approach road to the building was not completed. Tenders were invited for the work of land development including approach road in November 2004, and work estimated to cost Rs.11.06 lakh was completed at a cost of Rs. 10.06 lakh (October 2005). The Collector took possession and allotted space to various Departments (March 2006).

The Government stated (August 2006) that the delay in occupation of the building was mainly due to encroachment alongside the land of the building by the vegetable vendors thereby blocking the rear access to the office complex and the delay in construction of road due to monsoon. The reply is not tenable as the action to construct the road was taken after six months of the completion of the building. The fact however remains that improper planning in taking up the construction of approach road resulted in the building constructed at a cost of Rs.80.18 lakh remaining idle for two years. Besides the offices<sup>4</sup> proposed to be shifted to the newly constructed building continued to function in the rented private premises thereby incurring avoidable expenditure on rent of Rs.6.29<sup>#</sup> lakh during the period between July 2004 to March 2006.

### **HOME DEPARTMENT**

### 4.2.3 Idle investment on residential barracks constructed for Police Training School at Valpoi

The Training School residential barracks constructed at a cost of Rs.98.06 lakh remained unutilised for two years due to non-availability of electricity connection.

The Police Training School (PTS), Valpoi was started in 1962 with a capacity of 100 recruits. Due to increased number of new recruits (about 250 Nos.) and lack of facilities such as residential barracks with bathrooms and toilets, other common amenities, Government decided (November 2001) to construct two

Name of Office	Rent per month	No. of months	Rent paid from July 2004 to March 2006		
Electricity Department	11979	3	11979 x 3	=	35,937
Raya Chamber, Quepem	13000	18	13000 x 18	=	2,34,000
Dy. S. P. Office Municipal Building, Quepem	4500	21	4500 x 21	=	94,500
RTO Office, Quepem	5700	21	5700 x 21	=	1,19,700
Town and Country Planning Office, Quepem	4500	21	4500 x 21	=	94,500
Agriculture Department, Quepem	2400	21	2400 x 21	=	50,400
Total					6,29,037

\* Departments of Transport, Electricity, Agriculture, Town & Country Planning and Police.

buildings under the Centrally Sponsored Scheme on "Modernization of Police Force". The buildings comprised of additional classrooms and residential barracks with other amenities like gymnasium etc. Government accorded (November 2001) administrative approval of Rs.1.62 crore for the residential barracks and the work was awarded (June 2003) by the PWD at a tendered cost of Rs.1.22 crore, to be completed by 12 June 2003. The civil works were actually completed in May 2004, at a cost of Rs.98.06 lakh (considering payments made upto November 2004) with the final bill yet to be settled (November 2006).

Audit scrutiny revealed that on advice of the PWD, the Police Department requested (June 2004) the Electricity Department for an electricity connection for the newly completed works. As the existing transformer from where the electricity connection was to be released for these newly constructed buildings was overloaded, the Electricity Department suggested the Police Department to apply for installation of an independent transformer in PTS campus. The tenders for the installation of transformer were invited in June 2004, and the work was awarded after a delay of over 20 months (March 2006) due to cancellation of tenders and re-awarding of contract and was subsequently completed in May 2006 at a cost of Rs.1.54 lakh.

The transformer could not be commissioned (November 2006) for want of approval from higher authorities. As the existing paint of the building had faded, proposal for additional expenditure of Rs.2.22 lakh was approved (June 2006) for repainting the building.

The Government stated (November 2006) that the delay was due to non release of electrical connection which was attributed to lengthy procedure of electricity department. The fact however remains that the building completed at a cost of Rs.98.06 lakh during 2003-04 could not be put to use (November 2006) defeating the purpose of construction of the building.

### 4.3 Regularity issue and others

### **INFORMATION AND PUBLICITY DEPARTMENT**

### 4.3.1 Uneconomical expenditure on event management of IFFI 2005

The event management agency was allowed to retain sponsorship income of Rs.98.84 lakh for over five months and extra items of Rs.51.74 lakh were executed without ascertaining reasonableness of the rates during organizing of IFFI 2005.

The Entertainment Society of Goa (ESG) set up (May 2004) by the State Government was responsible for conducting the event management of the International Film Festival of India (IFFI). Goa was declared (September 2005) as the permanent venue for the IFFI, by the Government of India (GOI) and IFFI 2005 was conducted from 24 November to 4 December 2005. The ESG incurred (June 2006) an expenditure of Rs.9.44 crore (Rs.8.56 crore on

Event Management, Rs.61 lakh on publicity, Rs.27 lakh on other items such as hiring of theatres and professional expenses) for IFFI 2005.

The ESG invited Expression of Interest from the professional agencies against which five applications were received. Based on the presentations given by these five agencies the ESG (October 2005) short listed three agencies namely, Times Infotainment Media Limited (TIML), Brilliant Entertainment Network (BEN) and Wizcraft International, Mumbai (WIZCRAFT). The quotes offered by these agencies were Rs.3.65 crore, Rs.3.60 crore, and Rs.3.51 crore respectively. The quotes were not comparable as out of 23 items, TIML had not quoted for seven<sup> $\bullet$ </sup> items, WIZCRAFT for six<sup> $\bullet$ </sup> items and BEN for eight<sup> $\Upsilon$ </sup> items.

The ESG considered the past experience, credentials, suitability and competence and awarded (October 2005) the event management contract to M/s. Wizcraft International as the Event Management Agency (EMA) and issued (November 2005) work order for Rs.5.94 crore to them.

Audit scrutiny (June 2006) revealed that:

- As against the cost ceiling of Rupees four crore for the event, the value of work orders finally issued to M/s. Wizcraft amounted to Rs.5.94 crore, due to inclusion of additional items like Goa Music Day, Street décor, theme song videos, theme song recording, festival transport, merchandise, civic décor etc. amounting to Rs.2.47 crore. Inclusion of additional items at the time of issue of work order after the selection of the EMA, flouted the tendering procedure. The additional items, inter alia, included charges of Rs.12 lakh for creation of IFFI 2005 theme song, Rs.8.00 lakh for theme song video, Rs.7.85 lakh for preparation of invitation video and Rs.12.76 lakh for floral decoration at Kala Academy and Inox Multiplex for flags and five pillar structures, which were not comparable.
- During the progress of the Film Festival, the EMA was verbally ordered to execute various extra items of works such as barricading around INOX (Multiplex theatre), Press conference, Audio Visual equipments, mobile cinema, power distribution etc. estimated to cost Rs.50.49 lakh, by the agency. The agency claimed (December 2005) Rs.51.74 lakh against these items in the final bill, which was not settled (September 2006). The Governing Body authorised CEO, ESG to release the balance payment of extra items upon strict verification of individual items and after obtaining clearance from the internal auditor. Entrustment of extra items of work of Rs.51.74 lakh to the EMA based on the rates submitted by them without ascertaining/ensuring the reasonableness of the rate was irregular.

Children's activities, Monumental lighting, Fire work show, Cost per kiosk per day, Cost per call centre/back office per day, Hospitality and travel, Manpower.

<sup>\*</sup> Beach cinema Caranzalem, Cinema rights, Monumental lightings, Civil décor transport delegate kiosk, Other services, Miscellaneous.

Beach cinema Caranzalem, Mobile cinema, Cinema rights, Children's activities, Monumental lightings, Fireworks show, Other services, Miscellaneous.

The sponsorship revenue of Rs.2.02 crore was raised from seven sponsors. The ESG received Rs.1.26 crore between the period December 2005 to May 2006, Rs.31 lakh between June to September 2006 and Rs.45 lakh receivable from (Sony Television - Rs.30 lakh and Inox Leisure Ltd. Rs.15 lakh) were to be adjusted against the amount payable by ESG towards the cost of television production from the capsule that was aired on Sony Television and hire of Inox Multiplex theatre. It was noticed that out of Cash sponsorship of Rs.1.30 crore raised by EMA from IDEA cellular, Rs. 98.84 lakh was received by EMA in December 2005 and was remitted to ESG only in May 2006 after a delay of 5 months whereas the balance amount of Rs.31.16 lakh was received by ESG in September 2005.

Matter was referred to Government (July 2006). Their reply is awaited (November 2006).

### FINANCE DEPARTMENT

### 4.3.2 Pension disbursements through public sector banks

Excess payments/over payments of pension/family pension/dearness relief/ medical allowance to pensioners aggregating to Rs.15.55 lakh were noticed during inspection in 2005-06.

Inspection of the pension disbursements from the records maintained by the Director of accounts, one Treasury office (Panaji) out of nine treasuries, one link branch<sup>\*</sup> out of six link branches and four paying branches<sup>•</sup> out of 153 paying branches during the year 2005-06 revealed the following cases of excess payments.

• Para 15.1 of the Scheme for payment of pension of pensioners of the Government of Goa through public sector banks requires that the pension disbursing authorities/public sector banks should obtain every year a life certificate from all the pensioners. Scrutiny revealed that the SBI Secretariat branch, Margao Branch has continued to credit the pension without obtaining the required life certificates as a result excess payment of Rs. 7.76 lakh was also made to 64 deceased pensioners even after their death during the period between May 2000 to November 2004. On being pointed out by audit, the Manager, SBI, (Margao) stated (September 2005) that recovery would be made and intimated to audit. Further Rule 54 (3) of C.C.S<sup>\*</sup> (Family Pension) 1964 provides that enhanced rate of twice the normal family pension limited to 50 per cent of the last pay drawn is admissible for a period of 7 year from the date of death or till the Government Servant attained the age of 65 years whichever is earlier and only normal rate of family

<sup>\*</sup> State Bank of India, Treasury Branch

<sup>\*</sup> SBI Secretariat, Margao, Mapusa and Treasury branch

Central Civil Services (CCS)

pension be payable thereafter. It was seen that the pension disbursing authority had not stopped the enhanced pension even after 7 years/age of 65 years in four cases resulting in excess disbursement of pension to the extent of Rs.4.04 lakh during the period from March 1989 to September 2005. The respective banks/treasuries have agreed to recover the excess pension disbursed. According to C.C.S. Pension Rule 55 A, dearness relief on pension was not payable to re-employed pensioners during the period of re-employment. Scrutiny revealed that a pensioner who retired from a group 'A' post continued to draw pension alongwith dearness relief of Rs.1.43 lakh (Nov. 2002 to Sept. 2005) inspite of furnishing an employment certificate in November 2002. The Treasury officer agreed (October 2005) to recover the overpayment in instalments.

- According to the recommendations of the fifth pay commission the Government had revised the rate of family pension at a uniform rate of 30 *per cent* of the last pay drawn. The provisions of the revised order are applicable to the Government servants who retire/die in harness on or after 1-1-1996.
- In one case the pensioner died on 5/8/1988 and the family pension at enhanced rate of Rs.900 upto 8/1995 and at normal rate of Rs.450 thereafter was authorized by the Director of accounts. The normal rate of family pension was revised to Rs.455 w.e.f. 1.1.1995 and to Rs.1950 p.m. with effect from 1.1.1996 taking into account 30 *per cent* of the last pay drawn vide order dated 13-10-2002 instead of to Rs.1411 per month according to the revision table. This resulted in overpayment of Rs.1.18 lakh (September 2005). The Director of Accounts stated (September 2006) that the amount will be recovered.
- In one case the pensioner opted for commuting his pension on superannuation in January 1988. The pension was revised (October 2004) as per recommendation of fifth pay commission with effect from February 1998. The portion of pension to be commuted was Rs.1971. The Director of Accounts while sanctioning the revision of pension ordered reduction of additional commuted pension to be deducted from his revised pension. However the State Bank of India calculated his arrears of pension with effect from February 1998 to October 2004 without deducting the additional commuted portion of Rs.1219, resulting in excess payment of pension to the extent of Rs.0.98 lakh for the period from February 1998 to October 2004. The Director of Accounts stated (September 2006) that necessary instructions will be issued to recover the overpayments.
- According to the recommendations of the Fifth Pay Commission the Government sanctioned medical allowance @ Rs.100 p.m. to pensioners which was not payable to re-employed pensioners and employed family pensioners. Scrutiny revealed that three

re-employed/employed pensioners were paid medical allowance of Rs.0.16 lakh by the pension disbursing authorities during June 2000 to September 2005. The Director of Accounts stated (September 2006) that the recoveries on this account have been commenced.

Para 25 of the scheme ibid requires that the Director of Accounts conducts a post check of pension payments. Neither did the Director of Accounts conduct such inspections as of July 2006 nor was any other internal control system introduced to avoid cases of overpayment and excess payments.

### 4.4 General Paragraphs

### 4.4.1 Lack of response to audit findings

Accountant General, Goa arranges to conduct periodical inspection of Government Departments to test check the transactions and verify the maintenance of important accounting and other records as per prescribed rules and procedures. These inspections are followed up with Inspection Reports (IRs) which are sent to the heads of offices and the next higher authorities to comply with the observations and report compliance to the Accountant General. Half-yearly report of pending IRs is sent to the Secretary of each Department to facilitate monitoring of the audit observations and their compliance by the departments.

A review of the IRs issued up to December 2005 pertaining to 38 Departments showed that 511 paragraphs relating to 186 IRs were outstanding at the end of June 2006. Of these, 39 IRs containing 46 paragraphs were more than five years old. Failure to comply with the issues raised by Audit facilitated the continuation of financial irregularities and loss to the Government.

Year wise position of the outstanding IRs and paragraphs are detailed in Appendix 4.1 (A). Even the initial replies which were required to be received from the heads of offices within six weeks from the date of issue of inspection report, were not received upto June 2006 in respect of 112 Paragraphs of 21 Inspection Reports as detailed in Appendix 4.1(B).

It is recommended that Government should revamp the system of proper response to the audit observations in the Departments and ensure that procedure exists for (a) action against the officials who fail to send replies to IRs/Paras as per the prescribed time schedule, and (b) action to recover loss/outstanding advances/overpayments pointed out in audit in a time bound manner.

### 4.4.2 Follow up on Audit Reports

According to instructions issued by the Goa Legislature Secretariat in July 2004 Administrative Departments were required to furnish Explanatory Memoranda (EMs) duly vetted by the Office of the Accountant General, Goa within three months from the date of tabling of the Audit Report to the State Legislature in respect of paragraphs included in the Audit Reports.

The Administrative Departments were, however, not complying with these instructions.

The position of outstanding EMs from 2000-2001 to 2004-2005 is as follows:

Audit Report	Date of tabling the Report	Number of Paragraphs & Reviews	Number of EMs received	Balance
2000-01	26 August 2002	26	22	4
2001-02	20 February 2004	13	13	Nil
2002-03	14 January 2005	12	6	6
2003-04	31 August 2005	9	3	6
2004-05	12 July 2006	12	Nil	12
	Total	72	44	28

Department-wise details are given in Appendix 4.2.