

3.4 Information Technology audit of “Pancha Tantra”

3.4.1 Introduction

The Government of Karnataka (GoK) introduced an ‘accrual basis, double entry accounting system’ in Gram Panchayats (GPs) in accordance with the Karnataka Panchayat Raj (Gram Panchayats Budgeting and Accounting) Rules, 2006⁴⁵ (henceforth referred to as B&A Rules). National Informatics Centre (NIC), on the request of the Rural Development and Panchayat Raj (RDPR) Department, developed a web-based application with 3-tier architecture called “Pancha Tantra” for implementing the double entry accounting system in GPs as well as for meeting the basic requirements of the GPs. Pancha Tantra had been developed during the year 2009-10 and entry of data started from 2010-11. Pancha Tantra was implemented in all 5,629 GPs, 176 Taluk Panchayats (TPs) and 30 Zilla Panchayats (ZPs) since 2012-13.

TPs and ZPs were given access to Pancha Tantra to monitor the activities of the GP by viewing various reports such as Demand, Collection and Balance (DCB) reports, financial statements, asset reports and beneficiary reports on the system. Pancha Tantra also contained a fund releasing module which was to be used by the ZP to enter the details of fund released to GPs.

The officials and the public could access various reports through the “Pancha Mitra” link in Pancha Tantra.

The database of the application is hosted on a central server available in the NIC office at Koramangala, Bengaluru. The software has been developed using Microsoft SQL Server 2008 as back-end and Microsoft Dot Net technology as front-end tool.

3.4.1.1 Features of Pancha Tantra

The Pancha Tantra was developed as a comprehensive application to meet the basic requirements of the GPs. It facilitated maintaining the double entry accounting system while carrying out the regular functionalities/activities such as, maintaining individual’s details of properties, water connections, *etc.* This system was stated to be developed, keeping in mind the understanding and knowledge of the Panchayat staff in performing the operations on the computer system. The rules and regulations defined in the Panchayat Act were incorporated while designing the Pancha Tantra application. Pancha Tantra has 10⁴⁶ modules and under each module various functionalities are provided.

The details of hardware, software and internet availability in the GPs were captured in Pancha Tantra. It was found that all GPs had implemented Pancha

⁴⁵ The Rules came into effect from 01.04.2007.

⁴⁶ Modules are: 1. Masters, 2. Demands, 3. Services, 4. Receipts, 5. Payments, 6. Reports, 7. Works, 8. Samanya Mahithi (General information), 9. Others (includes details such as Gram Sabha proceedings, change of user account password, *etc.*) and 10. Monthly or Annual statements

Tantra and had internet connectivity and power backup. The database has provisions to enter data either in Kannada or in English.

Pancha Tantra was also linked with certain other Information Technology (IT) applications such as “E-Swattu” and “Work soft”. E-Swattu was designed by the RDPR Department for issuing Form-9⁴⁷ and Form-11⁴⁸ which were essential instruments for property tax collection. All conversions of land, additions of properties were to be carried out through E-Swattu. Work soft was an application to enable the GP, ZP, TP, Karnataka Rural Road Development Agency (KRRDA) and Karnataka Rural Infrastructure Development Limited (KRIDL) to enter details of all the works undertaken in the GP’s jurisdiction. On completion, the work would get assetised.

3.4.2 Audit objective

The Audit objective was to ascertain the following:

- whether adequate application controls existed to ensure integrity, availability and completeness of data.
- whether the application facilitated maintaining double entry accounting system and necessary business rules were incorporated.
- whether the application enabled GPs to carry out the regular functionalities/activities in an effective manner.

3.4.3 Audit scope and methodology

The IT audit of Pancha Tantra was conducted by examining the application in the 80 test-checked GPs out of 5,629 GPs, 16 TPs out of 176 TPs and eight ZPs out of 30 ZPs (**Appendix 3.7**) for the period 2010 to 2014. Audit also analysed the database⁴⁹ to examine the system design and deficiencies, if any, with emphasis on integrity, availability and completeness of the data. The master data and data captured on the income side of the accounts relating to property tax and water charges were examined in detail.

Audit findings

The audit findings are discussed in the succeeding paragraphs.

⁴⁷ Form-9 is the list of non-agricultural properties in the jurisdiction of GP (Rule 28 of B&A Rules).

⁴⁸ Form-11 is the register of demand, collection and balance in respect of non-agricultural properties maintained by GP as per Rule 30 of B&A Rules.

⁴⁹ The database contained data of all GPs as on 15.10.2014.

3.4.4 Application controls

3.4.4.1 Input Controls and Audit trail

Audit observed that there was a single user identification number (ID) for entering/updating and revising the data in each GP. Thus, after data had been entered or updated by the Data Entry Operator, there was no system whereby it could be ensured that the Panchayat Development Officer (PDO) of the GP certified the correctness of the data entered. It was observed that there were deficiencies in the quality of data entered, which have been brought out in succeeding paragraphs.

The State Government replied (March 2015) that entries into Pancha Tantra were being made by the operator under the directions of the PDO who subsequently verified it manually through printouts and critical entries were verified and approved with fingerprint authentication and that wherever required, input controls and audit trails were built in. The State Government, however, agreed to re-examine the process to build in PDO approval for data uploading and to strengthen the input controls and record the audit trails.

The fact remains that in an IT environment it is imperative that all users accessing the system have unique passwords and rights for knowing as to who entered the data and made changes thereon, thereby also ensuring an effective audit trail. Thus, the State Government, while re-examining the existing process, needs to ensure that each user accessing the system has a separate ID so that the data entered/updated/revised may be linked to the user who has done the same. Also, the user ID of PDO/Secretary should be kept confidential as the final authorisation has to come from him/her.

3.4.4.2 Data entry in Master Tables

Audit examined the following masters in detail *i.e.* Property, Water connection, GP assets and Beneficiary details. The audit findings are as under:

- **Property Master**

The property master essentially enabled a GP to enter all details relating to various properties under its jurisdiction. Audit analysed the property master which had 6,05,31,461 records containing 30⁵⁰ fields including “Name of the owner”, “property number”, “address”, *etc.*

The following observations were made.

- All 5,629 GPs had entries in the property master. During test-check for the year 2013-14, Audit observed that the number of properties entered in

⁵⁰ 30 fields are: Auto generated Fields: gp code, village code, property_id, property_unique_id, assessment_year Non-Mandatory Fields: owner_name, address, property_no, survey_no, house_no, area, m_unit, dimension, ward_no, mobile_no, circle_code, rr_no, toilet_fac, north_dir, south_dir, east_dir, west_dir, ins_dt, upd_dt, location_code, uniq_old, trn_date, trn_type, trn_status, ip_no

Pancha Tantra did not match with the manual records maintained by GPs for the year 2013-14. For example, in GP, Menasagi of Gadag district, the number of properties as per manual records was 1,501 while as per Pancha Tantra the number of properties was 395.

- Important fields of owner name and property number were not mandatory. The owner name and property number was blank (in 1,596 cases) and contained invalid data like '0', '-', etc., (in 4,27,368 cases) in eight test-checked districts. Incomplete data entry would lead to generation of unrealistic reports.

The State Government stated (March 2015) that action has been initiated to correct and update all the properties in the Pancha Tantra. Further the State Government also stated that action will be initiated to make property number and owner's name mandatory.

- **Water Connection Master**

The details of water connections were being entered in Pancha Tantra under two heads *i.e.* monthly and annually. The water connection master captured details of property ID, GP code, village code, ward number, financial year, owner name, meter number, tap number and usage type all of which were mandatory.

Audit noticed that out of 5,629 GPs, only 2,018 GPs (36 *per cent*) had entered the details of water connections. Further, in 1,036 GPs, there were less than 10 number of water connections entered in the water connection master. Out of 80 test-checked GPs, 17 GPs were falling in the above list of 1,036 and it was found from the available records that the number of individual connections was much higher, averaging at 697 water connections per GP. The details are in **Appendix 3.8**.

The State Government stated (March 2015) that they are closely monitoring the collection of taxes of the GPs during this year using Pancha Tantra and accordingly GPs have been instructed to update collection and demand under water connection tax.

- **GP Assets Master**

As per Rule 69 of B&A Rules, every GP shall maintain asset register for both movable and immovable properties in the prescribed formats.

Pancha Tantra, being an accounting software, necessitates the capturing of all the assets of the GPs so that the balance sheet of the GP is correct.

Audit analysed the assets master table pertaining to movable and immovable assets owned by the GP. The table had fields for the GPs to enter the details of its assets such as scheme ID, asset class, asset name, asset address, asset description, completion date, value on completion, current value, etc.

The following observations were made:

- It was noticed that 5,379 GPs (96 *per cent*) had updated/entered the data for assets. The remaining 250 GPs had not entered any details in the table.
- Audit also observed that assets created under MGNREGS were not being captured in the GP assets.
- The assets master did not contain fields to capture the type of asset *i.e.* movable or immovable and acquisition value.

The non-entry of assets would lead to understatement of the assets in the balance sheet of these GPs. The State Government stated (March 2015) that the instructions had been issued to the GPs to update the assets data into Pancha Tantra. It was also stated that the assets created under MGNREGS will be pulled and linked into Pancha Tantra system shortly and that provisions will be made to capture the type of assets and acquisition value in Pancha Tantra.

• Beneficiary Details Master

Audit examined the master table of beneficiaries which captured their details⁵¹, *inter alia*, name, address, bank account number, scheme name, *etc.* There was provision to capture unique identification through Aadhaar number and Ration card number. The following observations were made:

- Fields such as Aadhaar number and Ration card number were blank.
- There were 11,19,581 number of records for the bank account number. It was not unique in 9,82,467 records and blank in 1,62,076 records and contained invalid data such as 0, *, #, ?, / in 8,20,391 records. The absence of validation controls resulted in entry of invalid data. It was also noticed that the bank account number field had not been made mandatory.
- There was no common beneficiary database having details of different schemes which an individual has benefitted from.

The State Government informed (March 2015) that the process of beneficiary identification and finalisation is being improved and the system is being implemented for bio-gas and Nirmal Bharat Abhiyan Schemes. It was also stated that in the new beneficiary management system, account numbers are being captured.

⁵¹ data captured is GP code, Village code, Beneficiary identification number, Beneficiary name, Beneficiary's father's name, Beneficiary address, Beneficiary phone number, Beneficiary bank, Beneficiary's bank branch, Beneficiary's bank account number, Caste status, Mobile number, Ration card, Job card number, Circle code, Aadhaar code and Property number

3.4.5 Mapping of Business Rules

3.4.5.1 Provisions relating to Budget

One of the major functions of a GP is to prepare budget and get the approval of the General Body (GB) before commencement of the financial year (Rule 11 of (B&A) Rules. As per Rule 15 of (B&A) Rules, every GP shall maintain a budget control register so that no expenditure is incurred without budget provision and the expenditure so incurred does not exceed the budget provision.

Audit noticed that there was no provision for capturing budget details in the absence of which the GPs will not be in a position to exercise control over expenditure as against budget provisions.

The State Government accepted the audit observation and stated (March 2015) that provision is being made to enter and generate budget through Pancha Tantra and also to capture the approved details of the same.

The provision to capture the budget details would bring greater financial discipline and transparency.

3.4.5.2 Auto generation of demand notice and penalty notice in case of non-payment of tax

The system of tax collection was such that the bill collector collected the taxes from the assessee and issued a manual receipt. The details in the receipt were entered in the day book and in Pancha Tantra. Pancha Tantra thus, reflected the total current demand of property tax, water charges and all other taxes and charges only based on the data entered by the GP. The following was observed:

- Pancha Tantra neither captured the rate of tax nor provided for auto calculation of the tax to be demanded from the assessee.
- In the test-checked 80 GPs, the current demand for property tax was zero in 29,680 numbers of records, out of which in 10,597 numbers of records, the opening balance was not equal to zero clearly indicating that these were not exempted properties.
- Pancha Tantra did not have any provision to auto generate demand⁵² notices and penalty notices and capture the date of issue of such notices which might have helped the GPs in recovering the outstanding dues and penalties and increasing their revenue.

⁵² Section 200 (4) of Karnataka Panchayat Raj Act, 1993 requires that if the tax, rate, fee for which a notice of demand has been served is not paid within 30 days from the date of such service, the GPs may recover the amount due along with a penalty in the prescribed manner.

Capturing rates of taxes and fees and auto calculation of the tax and non-tax liability would bring about greater transparency and ease of work in the tax and non-tax administration.

The State Government accepted (March 2015) the observations and stated that provision for auto-calculation will be explored and issue of demand notices in case of non-payment of tax will be made in the next version.

3.4.6 Generation of accrual accounts in double entry system

The rules for double entry are given in Chapter XI-Rules 101 to 111 of B&A Rules. These rules are for Book keeping, Accounting on accrual basis, Books of accounts (Cash book, Journal book and General ledger), Monthly accounts, Half-yearly accounts, Annual accounts, preparation of Trial balance, preparation and revision of Opening balance sheet, reports regarding defalcations or losses and investigation, *etc.*

3.4.6.1 Omissions in certification of Accounts

It was observed that test-checked GPs had generated only Income and Expenditure Statement and Balance Sheet through Pancha Tantra and had not generated Receipt and Payment account though there was provision for the same. Further, the Receipt and Payment account was not available for view by the public.

The State Government accepted (March 2015) the audit observation and stated that Receipt and Payment statement had not been provided in public domain as it was felt that it was not an important statement. It was further stated that it would be made available in the public portal. The reply, however, did not address the issue of the GPs not generating the Receipts and Payment account itself.

Out of the 80 test-checked GPs, in five⁵³ GPs only, Pancha Tantra generated accounts were approved by respective GB. Subsequently, these accounts were certified by primary auditor. However, in these GPs, income from property tax and water charges as per manual records did not agree with the figures in the Pancha Tantra generated accounts (as detailed in **Appendix 3.9**). Evidently, all entries have not been made in the computer system and the primary auditors should not have relied on them for certification.

3.4.6.2 Balances in Income and Expenditure Statement not tallying with collections in DCB

As per General Principles and Procedure of Double Entry Accounting System Rules 101 and 102 of B&A Rules, income which is earned or when the right to receive it is established, is to be taken as income on accrual basis and all collections in respect of accrued income shall be credited to the 'Receivables account', as and when they are received. The balance outstanding in the

⁵³ Devapura, Doddagatta, G N Kere, Kanchipura and Kangavalli (ZP, Chitradurga)

Receivables account shall be reflected in the Balance Sheet as Income-Receiveable. The following was observed:

Audit examined the collection of Street light charges, Tax on building, Tax on land, Water rate – General and Water rate – Special for the year 2013-14 from the DCB register in Pancha Tantra, in the 80 test-checked GPs and found that the income shown in the Income and Expenditure Statement was not matching with the collection shown in DCB Register in Pancha Tantra (Illustrative cases are given in **Appendix 3.10**).

The State Government accepted the audit observation and stated (March 2015) that the variations was mainly due to offline data entry work since the department had not gone for online system because of connectivity and power supply issues. However, it has taken measures to get the entries in Pancha Tantra corrected and matched with the manual entries. It was also stated that the mismatch in the DCB would be corrected during the current year.

3.4.6.3 Closing balances of DCB not being carried forward properly

Audit examined the DCB registers in Pancha Tantra comparing the closing balance of 2012-13 with the opening balance of 2013-14 from the DCB register for Street light charges, Tax on building, Tax on land, Water rate – General and Water rate – Special. In 65 GPs out of the 80 test-checked GPs, the closing balance of 2012-13 did not match with the opening balance of 2013-14. For example, in the case of Attibele GP, the closing balance for Street light charges as per DCB register of 2012-13 in Pancha Tantra was `4,90,080 whereas the opening balance for 2013-14 was only `1,86,890. Illustrative cases are given in **Appendix 3.11**.

The State Government stated (March 2015) that provision for correction of opening balance has been provided to the GPs to correct the mistakes made in data entry. Hence, it might have been modified by the GPs. The reply is not tenable as calculation of closing balance and the consequent carry forwarding of the same as opening balance for the next year is purely a system issue. Any manual interference in this may lead to serious negative implications on the accounts generated through Pancha Tantra.

3.4.6.4 Outstanding cess liability not reflected properly in the Balance Sheet

As per the instructions (May 2005) of the State Government, a cess towards providing adequate health, education, improved library facilities and rehabilitation of beggars aggregating 34 *per cent* on the property tax collected by the GP had to be collected and remitted to the authorities concerned after deducting 10 *per cent* of the total cess collected towards collection charges.

The cess amount entered by the GPs was reflected in the liability side in the Balance Sheet in Pancha Tantra. It was seen that liability did not include the outstanding cess amount which had been retained by the GPs as seen in the 80 test-checked GPs. In fact, in 18 cases, the cess figure was even 'nil'. For

example, in GP Hitnal, Koppal district, the total outstanding cess was ` 8,81,584 while the figure in the balance sheet was only ` 39,428. These cess figures also did not match with the day book collection registers. The details are in **Appendix 3.12**.

As the cess figures had not been captured properly, the liabilities to this extent were understated in the Balance Sheet.

The State Government stated (March 2015) that corrective measures would be taken to reflect the outstanding cess liabilities in the balance sheet.

3.4.6.5 Depreciation

As per Rule 110 (3) of B&A Rules, depreciation shall be provided on all fixed assets either on Written Down Value (WDV) or Straight Line Method (SLM) and ZPs have the power to determine the method and rate of depreciation. The Pancha Tantra software however, only enabled the WDV method. Hence the system should have provided for the GPs to select either one of the methods instead of hard coding only one method.

In a sample of the test-checked GPs for the year 2013-14, which had been uploaded in Pancha Tantra, it was observed that depreciation had not been charged in the Annual accounts in any of the test-checked GPs, even in those cases where the assets should have been charged depreciation.

The State Government stated (March 2015) that this point was being cross-checked by NIC with the concerned auditors of the test-checked GPs.

3.4.6.6 Fund releasing module not being used

The fund releasing module was available to the Chief Accounts Officer/Accounts Officer of the ZP to enter the fund releasing details. The fund releasing module was, however, not being used.

In reply, the State Government stated (March 2015) that there is a different system which is being used to calculate and transfer the funds under XIII Finance Commission Grants directly to the GPs through NEFT/RTGS which will be extended to all the Schemes for fund transfers in the coming years.

It is necessary to provide complete details of funds released to a GP in Pancha Tantra which is also available for public viewing so that expenditure incurred there against can be monitored.

3.4.7 Conclusion

The Pancha Tantra application is a positive step towards enabling GPs to capture various data and transactions and also to generate its accounts which can also be viewed by the general public.

The IT audit of Pancha Tantra, however, showed that the system did not provide for proper verification of data due to weak input controls as only a

single user ID was provided for multiple users. There were design defects resulting in discrepancies in the generated accounts making them unreliable. In some cases business rules had not been mapped properly. Also, there was no provision for capturing the budget of the GP in Pancha Tantra. Processes such as auto calculation of tax and generation of demand notices to enhance transparency in tax and non-tax administration and ease of work were not provided in Pancha Tantra. There were deficiencies in the data entry including capturing of legacy data such as outstanding cess, property and water connection data, *etc.*, being captured. Audit's examination of the Annual accounts particularly with respect to the incomes showed that the accounts were not being generated properly in Pancha Tantra.

It is felt that if this system is periodically reviewed and need-based changes are made, Pancha Tantra will go a long way in improving governance at the GP level.

3.4.8 Recommendations

- Adequate input controls and validation checks may be introduced to ensure completeness and correctness of data including legacy data entered into the system.
- The discrepancies in double entry accounting system should be eliminated to improve reliability of financial statements generated through it.
- Provisions may be incorporated to enhance its functions related to auto calculation of tax and budget preparation.