Revenue Department

3.4   Computerization of land records '*BHUIYAN*'

Highlights

The Scheme of Computerization of land records system, even after 17 years from its commencement, has failed to reach a stage whereby it can replace the manual system. The information in the computerized system was full of errors and important details were found to be missing. The data has not been properly updated and thus the generation of ROR in computerized system was not reliable. The services of trained staff were not utilized and the procured hardware for the scheme was lying unutilized. The reasons for failure of the scheme and the deficiencies observed therein have been brought out in the succeeding paragraphs.

The department failed to utilize Central assistance of Rs.6.24 crore, Rs.1.57 crore received during 2001-02 was diverted for purposes other than specified in allotment, Rs.4.40 crore was irregularly drawn and kept in cash/ savings banks account to avoid lapse and utilization certificates were furnished even after having unspent balances.

(Paragraph 3.4.6)

Avoidable expenditure of Rs.24 lakh on software, unfruitful expenditure of Rs.22.57 lakh on hardware, diversion of hardware to ineligible persons was noticed. Undue benefit of Rs.2.47 crore to private firms for data entry operations, unfruitful expenditure of Rs.1.29 crore on final printouts of khasra and khatauni, and infructuous expenditure of Rs.45.68 lakh on digitization of cadastral maps was noticed.

(Paragraph 3.4.7)

The system was not provided with adequate controls to ensure completeness and correctness of data rendering the data unreliable. The department did not prescribe adequate controls in the system design. Trial run and testing of the software was neither conducted nor documented. There was no built in control for validation of data for linking it with the provisions of land records.

(Paragraph 3.4.8)

The data computed by private firms were with blank fields and full of errors due to this system was fraught with risks of generating incorrect ROR. Further, invalid coding, variation in ported data, double account and inconsistencies in subsidiary files was noticed.

(Paragraph 3.4.9)

The computerized data in test checked district was not updated regularly and there was hardly any updation in data after initial porting in the tehsil systems.

(Paragraph 3.4.10)

Audit also noticed inadequate general controls viz. segregation of duties, access controls, password policy and absence of controls on output etc.

(Paragraph 3.4.11)

Recovery, backup and anti virus plans were also not properly laid down and followed.

(Paragraph 3.4.12)

An uncontrolled e-governance initiative in Bilaspur district in form of e-sangwari was noticed. Issuance of ROR from these centres was not properly authorized by the department/ Government.

(Paragraph 3.4.15)

3.4.1 Introduction

Computerization of Land Records (CLR), a 100% Centrally Sponsored Scheme (CSS) of Government of India (GOI) was initiated (1988-89) with a view to overcome the inherent problems in the manual system of maintenance and updation of land records and to provide computerized copies of Records of Rights (ROR) at a reasonable price to the landowners. The scheme also envisaged speed, accuracy, transparency, dispute resolution and on-line management of land records. Initially, the erstwhile State of Madhya Pradesh launched the scheme during 1988-89 and the scheme was re-launched (November 2002) in the State of Chhattisgarh as *'BHUIYAN'*[1].

Though the original scheme encompassed digitization of land details, ownership details, crop pattern, village field book etc. only two functions viz. village field book (P-11[2] register) and ownership details (B-1[3] register) were taken up for computerization which were mainly utilized for issuance of ROR to the land owners on demand.

A client server model application was developed with visual basic at the front end and SQL[4] server at the back end which was designed to work on Windows platform. The legacy data was ported by National Informatics Centre (NIC), Chhattisgarh. Further, the Commissioner, Land Records, Chhattisgarh

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[1]   *BHUIYAN means' land'.*
[2]   *This register contains individual land details recorded in ascending order of survey numbers (Khasra). The register is maintained for five years.*
[3]   *This register contains owner-wise information with records sorted in alphabetical order with serially allotted khaata (account) number to owners also known as Khatauni.*
[4]   *Structured Query Language*

(CLRCG) also entered into a Memorandum of Understanding (MoU) in November 2002 with Chhattisgarh *i*nfotech and biotech Promotion Society (CH*i*PS[5]) for providing assistance in the scheme *viz.* planning, implementation, system study, solution design, tendering, etc.

The GOI scheme was under implementation for over 17 years (11½ years in Madhya Pradesh and 5½ years in Chhattisgarh) and an expenditure of Rs.13.91 crore was incurred on it upto March 2006 for the districts under Chhattisgarh.

3.4.2 Scheme objectives

The main objectives of the scheme were:

- ↓ To facilitate maintenance and updating in land data base such as changes due to creation of irrigation facilities, natural calamities, consolidation of land holdings or legal changes like transfer of ownership, partition, land acquisition, lease etc.

- ↓ To preserve land records data for long time in storage media for fast and efficient retrieval of information.

- ↓ To provide comprehensive security to make land records tamper-proof.

- ↓ To create 'Land Information System'(LIS) and to provide database for effective land reforms, revenue administration and development.

- ↓ To facilitate preparation of annual set of records accurately for recording details such as collection of land revenue and cropping patterns etc.

- ↓ To provide timely and accurate copy of the ROR (*Khasra[6]* and *Khatauni[7])* to the landowners.

3.4.3 Organisational set-up

The Secretary, Revenue-cum-Commissioner Land Records is the State Level Implementing Authority. Collectors/ Additional Collectors/ Deputy Collectors/ Assistant Collectors/ Superintendent of Land Records at district level and Assistant Superintendent Land Records at departmental level are designated as nodal officers. In the manual as well as in computerized system the Tehsildar (overall administrator) is responsible for up to date maintenance of land records within his jurisdiction, the Revenue Inspector (transaction approver) supervises the work of *patwari[8]* (data entry and maintenance) who is the main functionary maintaining all types of land records pertaining to his/her *halka[9]*.

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5   *A Society registered (January 2001) under Chhattisgarh Societies Registration Act, 1973.*
6   *It is the unique survey number of the land within a tehsil.*
7   *It contains owner-wise information in alphabetical order also known as B-1.*
8   *Person who maintains land records in a village(s).*
9   *Group of villages under the supervision of patwari.*

3.4.4 Audit objectives

Audit of the scheme was done to evaluate the:

(i)   Extent of computerization of land records in the State.

(ii)   Efficacy in procurement of hardware/ software, its utilization and training of personnel.

(iii)   Effective utilisation of computerized database for land reforms, administration and development works.

(iv)   Efficacy of data capture, updation, maintenance, security and validation.

(v)   Accuracy in issuance of ROR to landowners.

3.4.5 Scope of audit

The records of CLRCG, six[10] district Collectorates, CH*i*PS and NIC were scrutinized during April 2006 to July 2006 covering the period from 1999-2000 to 2005-06. The databases of 19[11] tehsils (out of 98 where the scheme was implemented) was analysed using Computer Assisted Audit Techniques namely SQL.

AUDIT OBSERVATIONS

3.4.6 Injudicious use of GOI funds for the scheme

The scheme was 100% financed by Central Government upto the point of completion of the project in a district. Subsequently, Central assistance is to be discontinued and the State Government is to bear the expenditure on maintenance and continuation. Accordingly, Central assistance was discontinued after 2002-03. GOI had sanctioned Rs.14.64 crore during 1999-2006, out of which Rs.6.25 crore could not be spent (September 2006). The State Government also sanctioned Rs.6.40 crore during 2003-06, out of which Rs.0.88 crore was surrendered.

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[10]   *Bastar, Bilaspur, Dhamtari, Durg, Raipur and Surguja.*
[11]   *Jagdalpur, Keshkal and Kondagaon (Bastar); Bilaspur, Marwahi and Pendra road (Bilaspur); Dhamtari and Kurud (Dhamtari); Balod, Durg, Gundardehi and Patan (Durg); Abhanpur, Arang, Gariabandh, Raipur and Rajim (Raipur); Ambikapur and Surajpur (Surguja).*

3.4.6.1 Non-utilisation of GOI funds

GOI funds of Rs.6.24 crore could not be utilized

It was noticed in audit that proposal for establishment of State level monitoring cell, data centres at 16 districts, computer systems at 63 sub-divisions and upgradation of computer systems in 98 tehsils was sent (September 2004) to GOI. Rs.6.24 crore was released by GOI during 2004-06 against the proposal. As the department could not utilize the funds, the same were revalidated by GOI from time to time. Even after revalidation of funds of Rs.6.24 for the year 2006-07, the department could not spent (September 2006) even a single rupee and failed to establish State level monitoring cell, data centres at district and computerization of sub-divisions even after two years. The department did not offer any specific reply and simply stated (September 2006) that even after revalidation by GOI Finance department of the State had not released the funds.

3.4.6.2 Drawal of funds in advance of requirements

Drawal of Rs.4.40 crore to avoid the lapse of funds

Test-check of records of six districts revealed that Rs.4.40[12] crore was irregularly drawn between March 1999 to February 2005 to avoid lapse of funds and expenditure was incurred in subsequent years. Of this, Rs.4.80[13] lakh remained unutilized with the Collectors in cash/savings bank account as of July 2006. Such drawal of funds in advance of requirement resulted in blocking of Government funds and their retention outside the Government account in contravention to the financial rules.

3.4.6.3 Diversion of Central assistance

GOI assistance of Rs.1.57 crore diverted without permission

Scrutiny of records of the Commissioner, Land Records revealed that the Central Government funds to the tune of Rs.1.57 crore released in September 2001 meant for procurement of computers and other equipments through centralized tender were distributed (March 2002) to 16 districts for payment on account of data entry to six private firms and purchase of stationary resulting in diversion of funds without prior permission of GOI. Moreover, utilisation certificate (UC) was sent in September 2003 by Commissioner Land Records to GOI stating that the entire amount was fully utilized for the purpose to which it was sanctioned.

UC furnished to GOI even after having balance of funds

Similarly, an amount of Rs.32.34 lakh was sanctioned (February 2003) by the GOI for training of revenue personnel. The utilization certificate of Rs.32.34 lakh was sent in September 2003 by Commissioner Land Records to GOI, stating that entire fund was utilized for the purpose to which it was sanctioned despite having an unspent balance of Rs.15.68 lakh. Thus, there was gross mis-representation of fact reported to the GOI.

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[12]   *Bastar: Rs.40.95 lakh; Bilaspur: Rs.133.83 lakh; Dhamtari: Rs.13.88 lakh; Durg: Rs.77.19 lakh; Raipur: Rs.142.35 lakh and Surguja: Rs.31.59 lakh.*

[13]   *Dhamtari: Rs.1.31 lakh; Raipur: Rs.3.06 lakh and Surguja: Rs.0.43 lakh.*

3.4.7   Acquisition and Implementation

During audit it was seen that though as per MOU CH*i*PS was suppose to provide assistance in planning, implementation, system study design etc. the department did not fully utilize the services of CH*i*PS except in tendering. It also observed that though a centralized purchase was recommended by GOI and the study team but the District Collectors made the purchases with different make, model and configuration machines. Thus, the department failed to ensure centralized purchase for standardized specifications in all districts and avail the option for more competitive offers and discount on bulk order; main findings are given below:

3.4.7.1 Avoidable expenditure of 24 lakh in procurement of software

Incorrect assessment of software led to avoidable expenditure of Rs.24 lakh

In November 2002, CH*i*PS recommended a software meant for developing dynamic maps and GIS data and services via the web for three tehsils (Kondagaon (Bastar), Marwahi (Bilaspur) and Patan (Durg)) for implementation of the scheme. Three copies of this software, called ARC IMS (Internet Map Server) 5.0, were purchased (October 2002) for Rs.8.00 lakh each.

Audit observed that two copies were still lying idle without use in two tehsils and the software meant for Marwahi (Bilaspur) was lent (January 2004) to CH*i*PS. It was also noticed that neither the tehsils nor CH*i*PS had the technically skilled manpower to operate the software. Moreover option of free training by the supplier of the software was not availed as a result the software could not be made use of.

On being pointed out, Chief Executive Officer, CH*i*PS stated that it was not the fault of the CH*i*PS as the software was recommended for purchase but the department was free to decide whether to purchase the same or not. The reply was evasive as CH*i*PS was associated with the project from the beginning and the fact that no technical expertise was available with it, made its recommendation all the more incredible. Thus, incorrect assessment of software requirement led to avoidable expenditure of Rs.24.00 lakh.

3.4.7.2 Unfruitful expenditure in procurement of Hardware- Rs.22.57 lakh

Unfruitful expenditure of Rs.22.57 lakh on hardware purchase

The department purchased three[14] touch screens, 104 scanners and other equipment at a cost of Rs.11.92 lakh to facilitate the landowners with an instant view of land records information on touch screen, to scan mutation documents and to establish connectivity with Indira Suchana Shakti Kendras(ISS) to facilitate the remote villagers to get the computerized ROR at their door step. It was noticed in audit that these items were not utilized and were lying idle since their installation (November 2002). 18 scanners issued to ISS in Kondagaon (Bastar) but were not taken back after their closure (June 2004). It was also noticed that 24 computers (valuing Rs.7.77 lakh) and two

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[14]   *One each for Kondagaon (Bastar), Marwahi (Bilaspur) and Patan (Durg) tehsils.*

servers (valuing Rs.2.88 lakh) were lying idle in test-checked tehsils. Further, out of 19 tehsils, networking was not in place in 17 tehsils (except Arang and Rajim) defeating the very purpose of sharing information. Thus, the entire expenditure of Rs.22.57 lakh remained unfruitful.

3.4.7.3 Diversion of Computers to ineligible persons

Eight computers, five laser printers, four dot matrix printers and two UPS purchased for the scheme were diverted to other ineligible persons in Raipur district such as Reader to Collector, Steno to Collector, Steno to Additional Collector, Revenue Minister, Steno to Additional Collector (Revenue), Member of Parliament, Raipur, CBI and Election Branch. Further, nine computers of tehsils[15] were found installed at the Commissionerate. Thus, the hardware procured for the scheme was not used for the intended purpose.

3.4.7.4 Undue benefit of Rs.2.47 crore to private firms for data entry operations

Data of khasra and khatauni was not captured completely

The capture of data for all 98 tehsils from *khasra* and *khatauni* register for base year 1999 was entrusted (May-August 1999) to three private firms[16] and the same firms were entrusted (September 2002) the work of updation for base year 2002. In test checked districts the data entry work worth Rs.2.03 crore was stated to be completed by August 2003 and updation work worth Rs.1.71 crore by May 2004. However, audit scrutiny revealed the following:-

↓ No uniform norms were fixed for payment for data entry and they varied from Rs.1.95 to Rs.2.15 per entry for similar work.

↓ Data of only first four[17] columns of *khasra* and first eight[18] columns of *khautini* register was captured. Important data of remaining 23 columns of above register, which consists of the crop details and details of revenue collected, deposited, balance at the end of year and recovery after end of revenue year was not captured.

↓ Though it was the responsibility of the *patwari* concerned to verify the data entry which was to be further checked by the Revenue Inspector, Superintendent Land records and was to be augmented by random checking by senior officers, full payments were made without verification of correctness and completeness of the data.

Thus excess payment of Rs.2.47 crore to the private firms was made in complete violation of the government regulations and tenets of probity and financial prudence.

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[15] *One system each from Bilaspur, Dantewara, Dhamtari, Janjgir, Kawardha, Korba, Koria, Raigrah and Surguja.*

[16] *M/s Solitaire Comptech Pvt Ltd, Gwalior (M.P.) for Bastar Bilaspur, Durg and Raipur M/s Panchsheel Software, Bhopal(M.P.) for Surguja*
M/s Vivekanand Computer Institutes, Vidisha (M.P.) for Dhamtari

[17] *Khasra number, area, name of owner/leasee, father name and address.*

[18] *Account number, name of owner/leasee, details of account, details of land held by the owner and area, details of land revenue viz. installments, land revenue, sub-tax, total.*

3.4.7.5 Incomplete porting of data

Data of 26 villages was not ported in computer system

It was noticed that in Ambikapur, Gariabandh and Patan tehsils data of 26 villages (Ambikapur-6, Gariabandh-15 and Patan-5) was not ported in computer system as of July 2006. On being pointed out, Tehsildhar, Gariabandh and Patan stated (June 2006) that the matter would be examined and Superintendent, Land Records, Surguja stated (July 2006) that requests have been made to NIC to port the data. Thus, the issuance of computerized ROR in respect of these 26 villages was not possible.

3.4.7.6 Unfruitful expenditure of Rs.1.29 crore on printouts of khasra *and* khatauni *forms made to private firms*

Non-utilization of final printouts valuing Rs.1.29 crore of khasra and khatauni

The final data printouts of *khasra* and *khatauni* in three copies obtained twice[19] from data entry firms were required to be distributed to the concerned tehsil offices, gram panchayats and *patwaris* and the *patwaris* were required to maintain their land records in these printed copies to carry out future corrections/modifications. They were also required to take out fresh printouts of data before start of the revenue year to record entries during that year. It was observed that the final data printouts, for which Rs.1.29[20] crore was paid to the private firms, were lying idle either at districts or at tehsils. Thus, the very purpose of obtaining these printouts was altogether defeated and resulted in unfruitful expenditure. Further, as per the agreement the printout of *Milan khasra*[21] was required to be obtained from the data entry firms for each village. It was observed that without obtaining printouts of *Milan khasra* payments were made to the firms; in absence of *Milan khasra* it could not be ensured that the all columns of *khasra* were captured during data entry by the firms.

Besides, the department was still incurring expenditure (Rs.8.95[22] lakh during 2004-06) on printing of blank forms of *khasra* and *khatauni* on which the *patwaris* were maintaining the land records manually and were also compiling the two reports namely *Milan Khasra* and *Jeenswaar*[23] manually which were based on *khasra* and *khatauni*. Thus, no additional benefit from computerization of land records though generation of these reports has accrued and for all practical purposes the manual system was still in use.

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19   *First after data entry for base year 1999 and second after updation of data for base year September 2002.*
20   *Bastar: Rs.12.28 lakh; Bilaspur: Rs.24.62 lakh; Dhamtari: Rs.0.40 lakh; Durg: Rs.30.28 lakh; Raipur: Rs.36.92 lakh and Surguja: Rs.24.78 lakh.*
21   *Includes information on types of land, sources of irrigation etc. for a village.*
22   *Bastar: Rs.1.60 lakh; Dhamtari: Rs.1.14 lakh; Raipur: Rs.2.28 lakh and Surguja: Rs.3.93 lakh. Information from Bilaspur and Durg districts was awaited (September 2006)*
23   *Crop-wise report*

3.4.7.7 Infructuous expenditure on digitization of cadastral maps

Non-installation of map software of Rs.45.68 lakh

A Centrally Sponsored pilot project '*digitization of cadastral maps*' was started (1998-99) in erstwhile State of Madhya Pradesh by Commissioner, Land Records, Madhya Pradesh (CLRMP) with the objective of providing computerized local maps showing *Khasra* number to villagers, in two districts (Raipur and Surguja) of present Chhattisgarh State. Separate agreements were signed (April/May 2000) between the Commissioner Land Records, Madhya Pradesh and two New Delhi based firms[24] to develop appropriate software.

Scrutiny of records in the office of the Collector, Raipur (March 2005 and April 2006) revealed that maps of 745 villages of three tehsils[25] were digitized and the firm delivered final CD (November 2002) but it was lying idle (May 2006) with the department and was not installed in any of the three tehsils. The firm was paid Rs.27.90 lakh (March 2004) against its claim of Rs.48.76 lakh by the Collector, Raipur. The remaining amount of Rs.20.86 lakh could not be paid to the firm due to non-availability of budget and non-completion of work (May 2006).

Similarly, scrutiny of records in the office of the Collector, Surguja (July 2006) revealed that maps of 439 villages of Surajpur tehsil were digitized and the firm delivered final CD of 383 villages (March 2001) but since there was mismatch between the maps of final CD and manual maps it was lying idle (July 2006) with the department and was not installed. The firm was paid Rs.17.78 lakh (March 2001) against contract value of Rs.30.55 lakh by the Collector, Surguja. The remaining work of 56 villages was incomplete (July 2006) thus the balance could not be paid to the firm. An amount of Rs.2.27 lakh released during 2003-04 for the above purpose was lying unutilized and kept unauthorisedly in savings bank account as of July 2006.

On this being pointed out, the concerned Collector stated that the firm has been directed repeatedly to install the software but even after reminders and request over phone the firm had not taken any action. The Government has not offered specific comments on the issue.

Thus, the Centrally Sponsored Scheme of 'digitization of cadastral maps' started six years back remained incomplete and amount of Rs.45.68 lakh spent on the work remained infructuous.

3.4.7.8 Infrastructure

During audit scrutiny a number of deficiencies were noticed in the creation of infrastructure which are given below:

(i)   As per the GOI guidelines, the State Government was required to construct/ provide space of minimum 200-250 square feet of carpet area for

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[24]   *M/s. Ramtech Corporation Limited and M/s. Xerox Modicorp Limited.*
[25]   *Abhanpur, Arang and Brindanawagarh (Gariabandh).*

computer room at each tehsils. In test checked tehsils the space provided for computer room was too less than the prescribed area e.g. in Arang, Raipur and Rajim tehsils were having maximum carpet area of 60 square feet only.

(ii)   Air conditioners were purchased by the department for all tehsils but in 14 tehsils, out of 19 test checked, air conditioners were not found installed and their whereabouts were unknown.

(iii)   Fire extinguishers were not found installed in 18 tehsils (except Dhamtari). Similarly, in test checked districts anti virus software were not installed in any of the systems.

3.4.7.9 Training activities

Unproductive expenditure of Rs.14.03 lakh on trained manpower

Training is an important function of programme implementation. Accordingly GOI provided Rs.32.34 lakh in 2002-03 for computer training of revenue staff. After training the revenue staff was required to maintain their land records on computers. In six test checked districts it was noticed that 1914 revenue personnel were trained for which expenditure of Rs.14.03 lakh was incurred.

Audit scrutiny of the training activities in six test-check districts revealed the following:

↓   Though the course contents were the same but the rate per student was different and ranged from Rs.150/- to Rs.1000/- in test checked districts. The selection of the institution for imparting training was not done at the departmental level to ensure standardized training in all districts and the option for more competitive offers and discount on bulk training could not be exercised. Details are given in ***Appendix 3.4.*** In any of the test checked tehsils user and operational manuals were not provided.

↓   Though an expenditure of Rs.14.03 lakh was incurred on training of 1914 revenue personnel, it was seen that their services were not utilized for updating the data at tehsil levels. Though trained revenue personnel were responsible for carrying out updation in respect of their *halka* but in most of the tehsils the data was not updated from September 2002. Thus, expenditure on training of revenue staff proved to be unproductive.

3.4.8   System design

Trial run and testing of the software was not done

The department did not prescribe any system development methodology and framework to control the process of system design internal controls, security, disaster recovery, change management controls etc. for effective implementation and continuation of the scheme. It was also observed that trial run and testing was not done by the department to enable proper evaluation/ acceptance of the application software developed by the NIC; no documentation viz. acceptance certificate was available for the software due to which various deficiencies in software existed which are given below:

3.4.8.1 Ownership history not available in the computerized system

Non-availability of ownership history in computerized system

In the manual system, history of ownership of land was always available. However, it was observed that the software did not provide the facility for storing history of *khasra* as well as mutation history to recognize the changes made in each *khasra*. As a result when an ownership change took place the new entry was made by overwriting electronically in the database and no archiving of the earlier record was done. Thus the system was not capable of giving full ownership details without consulting the manual records. In reply NIC stated that the facility has now been provided in the current version of software. However, the facility was not available in the earlier version due to which the history of already mutated *khasra* in earlier software could not be viewed.

3.4.8.2 Ban on mutation of Government land not enforceable

In the manual process, if there was a ban on making changes/mutations on properties pertaining to the Government land allotted for rehabilitation, properties which had charges on them like mortgage and court order, notings were taken under authorized signature banning further mutations in respect of such properties. The software, however, did not provide the facility for freezing the data against making such illegal mutations. The department failed to indicate the procedures for incorporating such checks by NIC.

3.4.8.3 Government rules not incorporated in the software by way of validation checks

↓   In 5657 cases, tax of Rs.1,15,525.48 was indicated against government owned lands, which were not even leased. Indication of tax against Government owned land was irregular.

↓   Scrutiny of ownership data of 18 tehsils revealed that in 290 accounts (466673.308 hectares), the owners were having land much more than the prescribed norms as stipulated in Rule 7 of the Chhattisgarh Agriculture Land Ceiling Act, 1960. In five accounts (9652 hectares) names of owners were not specified. Further, scrutiny of ownership details *khasra*-wise, it was observed that area of 335714.132 hectare in 255 private cases and area of 753 hectare in two cases (where the name of owner was not mentioned) was more than the prescribed norms of the above Act. Thus, there was no built in validation of the data for linking it with the provisions of Chhattisgarh Agriculture Land Ceiling Act, 1960 to prevent a land owner to hold land of more than ceiling limit in computerized system.

↓   In 271360 cases, the sum of irrigated and non-irrigated area was more than the total area owned by a landowner. Thus, there was no built in control for validation of the data for linking it with the exact area in *khasra* entry.

3.4.9 Input controls

Data was unreliable due to inconsistencies in data capture. These include wrong coding, no names, caste, father's name and address of owners, wrong entry of taxes, incorrect land category, etc.

The Computerization of land records system should ensure complete, accurate and timely updated data for issuance of ROR to landowners on demand. To achieve this objective, the system should ensure that the basic data was captured and maintained properly in a secure manner. Though the system did not deal with financial functions directly but it processes data of public interest. Thus, success of this scheme lies in the reliability of the data captured. IT enabled analysis of data using SQL, in 19 tehsils (43.99 lakh records for 4193 villages) consisting entries of *khasra* and *khatauni* entries disclosed several inconsistencies in data input controls, which adversely affected the reliability of the database. The major deficiencies are given below:

3.4.9.1 Double accounts in **khatauni** *register*

As per rule, the owner should be allotted with only one unique account number in *khatauni* register wherein the lands owned by him should be shown in one place. Scrutiny of analysis in 19 tehsils (except Gariabandh) revealed that in 30571 instances (83222 accounts) the owners were allotted with more than one account in the system. Out of which, in 7028 accounts (1237 instances) the name of account holder was either blank, comma, dot, single character or entered with numerical and meaningless words. In 44559 accounts (17427 instances) name of the father was not entered. Similarly, out of 6913 Government accounts (438 instances), 2892 accounts (182 instances) were still in the name of Madhya Pradesh Government, which was evident that the data captured for base year 1999 and updated in base year September 2002 was dated.

3.4.9.2 Inconsistencies in tenancy files

Inconsistencies in tenancy files viz. names in one character, caste code not entered or incorrect etc.

Data analysis of 18 tehsils revealed that out of 1096 tenants to whom land was leased, names of the tenant contains only one character in 175 cases which was meaningless, caste code was not entered in 773 cases and incorrect caste code was entered in 103 cases. In 859 cases name of father was not entered or entered as '*Pitha*' and in 232 cases address was not entered.

3.4.9.3 Inconsistencies in encroachment files

In encroachment file name, father's name, address of encroacher not mentioned

Further data analysis of 18 tehsils revealed that 14378.029 hectare area was encroached by 15740 encroachers. Out of this, in 297 cases the name of encroacher was not entered or contained only one character, which was meaningless and in 12727 cases name of father was not entered or was entered as '*Pitha*'. In 10277 cases the address of the encroacher was not entered and in 17 instances the encroached area was more than the actual *khasra* area.

3.4.9.4 Blank/ incomplete fields

↓   In 130622 instances, the area of *khasra* was not mentioned due to

which the exact area owned by the landowner could not be identified and the issuance of computerized ROR was not possible in these cases.

↓ In 3236569 cases, the land revenue levied and in respect of 3952678 cases other taxes levied for the current year was not entered due to which the exact revenue realised during the year could not be ensured.

↓ In 9036 cases name of the owners was not captured or contained only one character, in 608372 cases name of father/husband of the owner was not entered or entered just as '*Pitha*' and in 102602 cases address of the owner was not entered. Thus, issuance of computerized ROR in these cases was not possible.

↓ In 3456237 cases, crops were shown as sown but the area on which the same was sown were not indicated and in 3177006 cases details of crop sown viz. crop code not entered due to which crop details on individual lands were not available.

3.4.9.5 Invalid coding

↓ Category of land was to be indicated by the code '1', '2' or '3' standing for 'Government', 'Private' or '*Sanstha* (Institution)' respectively. However, in 830 cases (9834.662 hectares), type of land was not entered. This makes detection of irregular transfer of land difficult.

↓ Caste of the owner was to be indicated by the codes '1', '2' or '3' standing for Scheduled Caste (SC), Scheduled Tribe (ST) or General (Gen) respectively. In 895061 cases, the caste code was not entered; in 167292 cases the code entered was other than the prescribed numerical viz. '4', '5', '6' etc. Thus, the provision of Rule 170 of Revenue Manual to ensure sale of Schedule Tribe owned land to the same community during mutation was not incorporated in the software.

3.4.9.6 Variation in ported data

↓ In Bilaspur tehsils the ported data (July 2003) consisted of 220985 *khasra* for 97 villages whereas the present data in tehsil system shows 208377 *khasra* for 112 villages, thus there was decrease of 12608 *khasra* despite increase of 15 villages which was not possible. Similarly, in Pendra road tehsil the ported data (December 2003) consisted 158907 *khasra* whereas the present data in tehsil system shows 157646 *khasra* with a decrease of 1261 *khasra*.

On being pointed out by audit on the above points, the concerned Tehsildars stated that necessary instruction for rectification of errors would be issued and the data would be updated.

3.4.10 Lack of regular updation of data

Lack of regular data updation

In 19 test-checked tehsils, only 118346 mutations were entered from the installation of the computerized system upto July 2006. When compared with the figures of initial ported data there was minimal difference between ported data and present data in six tehsils ranging from six to 858 *khasra* only which

clearly indicates that the data was not updated regularly in the computerized system. Further against information furnished by the department to a Vidhan Sabha question, 25657 number of registration (sale/purchase of land) in five test checked tehsils of Raipur were found during 2004-05 but only 3145 mutations (June 2006) were entered in computer system. Thus, it is clear that the data was incomplete and not updated periodically. Moreover, in 7255 instances, the actual area of *khasra* was changed after porting of data from time to time, as the area of *khasra* was captured incorrectly. Audit also noticed that neither logs were kept nor was there proper control over change of data. Thus it can not be verified whether the changes were properly authorised or not.

On being pointed out, concerned Tehsildars and Collectors stated that action plan would be drawn up for updation of data.

3.4.11 Inadequate General Controls

3.4.11.1 Segregation of duties

In manual as well as in the computerized system the *patwaris*, revenue inspectors and tehsildar were provided with different levels of authorizations viz. entry and maintenance, supervision and approval of entry respectively. However, it was noticed in test-checked tehsils functions of the posts mentioned above were being performed by one individual, i.e. the data entry operator. Even though the *patwaris*, revenue inspector and Tehsildar were trained in the use of the IT system they had left the entire operations to the data entry operator seriously affecting the concept of distribution of duties and powers according to the hierarchy in an organisation. This absence of the system of checks and balances makes the system vulnerable to risks and manipulation.

3.4.11.2 Lack of access controls

Scrutiny of mutation module revealed that the proposed biometric system to provide foolproof security in the form of providing joint thumb impression of two officials for making modification/changes of the previous certified mutation entries was not provided.

It was also seen that good password policies like password aging, log out after specified idle time etc. was not enforced. Instead, in 18 tehsils, default password was found to be in use. Moreover, login password of the software did not have restriction on the number of unsuccessful attempts to disallow unauthorized users.

Moreover, in important menus as well as in sub-menu of the software one can easily access and can add/modify the entries without requiring any password/key word. Further, some sub-menus did not have 'delete' option to delete incorrect entry, if any. Since the RORs were seen to be generated

directly through the server and not through the terminal machines this bought in additional vulnerabilities to the database.

Thus, the logical access controls were weak, exposing the system to unauthorized access, serious risks of data manipulation, tampering and loss.

3.4.11.3 Absence of control on number of ROR issued

Against issuance of ROR the incharge personnel was required to collect the prescribed amount for each ROR. There was an absence of control to ascertain the number of copies actually printed in a day and amount collected thereof. To ensure the actual issuance of printed ROR and collection of revenue, the system should have facility to generate daily/ weekly/ fortnightly/ monthly report to minimize the risk of manipulation. No request to develop such facility in software was made by the department to NIC.

3.4.12 Insufficient Recovery plans, backup and anti virus strategy

Absence of recovery plans, regular backups and anti virus strategy

It was noticed that risk assessment was not done and adequate alternative arrangements for continuing the activities in the absence of key personnel were not worked out. Moreover, no annual maintenance contracts (AMC) were executed (except in Ambikapur and Surajpur) for computer hardware even after expiry of their warranty period.

Further, there was no standardized backup policy in the department. In four tehsils (Abhanpur, Durg, Kondgaon and Surajpur), it was observed that backup was taken in the system itself and remaining tehsils informed that they do not have trained staff to take backup. Since database of all the tehsils were maintained on a single hard disk, there was a high risk of data loss. Further, the department had not developed disaster management and recovery plan for restoration of the whole database in case of mishap. The scheme envisaged preservation of data for a long duration; the land records involve large volumes of data, which require frequent backup. However, audit observed that the specifications by CH*i*PS did not include CD writer in three tehsils (Kondagaon, Marwahi and Patan), when, the same was included for other tehsils. Moreover, CD writers were not found installed in Jagdalpur and Bilaspur tehsil systems due to which backup of data could not be ensured. Thus, there was high risk of data loss in case of breakdown.

3.4.13 Monthly progress reports

Department failed to analyse the monthly progress reports

Scrutiny of monthly progress reports (November 2005 and March 2006) compiled at CLRCG revealed that the department did not obtain the monthly progress reports timely and failed to analyse the available reports to monitor the implementation of the scheme in the State. Prominent examples are as follows:

3.4.13.1 It was also observed that five[26] districts were not furnishing the monthly reports from December 2005 but no action was taken up.

3.4.13.2 The department prescribed (March 2004) a format of monthly progress report to be furnished by all districts by 5th of every month in respect of issuance of manual and computerized ROR. It was observed that the monthly reports received at CLRCG were not in prescribed format due to which the monitoring of ROR issued manually by *patwari*s versus computers could not be ensured.

3.4.13.3 Even though 214 ROR were issued during December 2005 to March 2006 in Mahasamund district the revenue realised declined. Similarly, in Jashpur district, 14613 ROR were issued upto November 2005, whereas March 2006 reports shows that 14524 ROR were issued. No action was taken to address these anomalies.

3.4.14 Monitoring and evaluation

Lack of monitoring mechanism and impact analysis

As per GOI guidelines the State Level Implementing Authority, Secretariat/Board of Revenue/office of the Commissioner Land Records, Nodal officers were required to visit the programme districts and tehsils periodically to ensure effective implementation, which was not done. The schedule of field inspections have not been drawn up at the State level nor reported to GOI as required. The department did not prescribe any procedure for effective field monitoring and evaluation of the scheme in the State. Inspection reports in respect of inspection of districts/tehsils conducted by the above officers were not on record.

The duties performed by the Commissionerate were mainly confined to collection of figures from all districts in the State. Systematic field monitoring was essential to assess the impact of the scheme but monitoring was done through monthly progress reports only, which were not analysed at Government/ Commissionerate level. Neither the targets for visits to subordinate offices were fixed nor any records maintained. Thus, the performance of the scheme remained unevaluated during the entire period covered by review.

3.4.15 Issue of ROR through *e-sangwari* centers (Bilaspur), an uncontrolled e governance initiative

Unauthorized discontinuation of ROR issuance from tehsil office

In the year 2004 the Collector, Bilaspur launched an initiative called *e-sangwari*[27] in the Bilaspur district with the prime objective to serve the citizens of Bilaspur district by providing governmental services[28] through

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26   *Dantewara, Jashpur, Kawardha, Mahasamund and Surguja.*
27   *Sangwari means 'colleague'*
28   *Certificates of Caste, Domicile, Birth, Death, Income, Marriage, Medical and BPL; Licenses of Hotel, Gun and driving; Information of land records (P-11 & B-1), Passport application, Registration of vehicle, Affidavits, Complaints etc.*

single window system using Information and Communication Technology Tools.

Records collected from *e-sangwari* centre, Bilaspur revealed that during July 2004 to May 2006 10[29] separate agreements were entered between various Tehsildars and a Patna based private firm; records regarding the selection of the firm were not provided to audit. As per the agreement conditions the local administration of above tehsils were required to issue necessary instruction to all the governmental departments in the district of Bilaspur not to entertain people directly. Instead the applicants were required to submit their application at *e-sangwari* centres and in turn the centres would provide the required information to applicant after obtaining it from the concerned department and would charge additional amount as service charges ranging from Rs.5 to Rs.50 per ROR. For example charges for *khasra* and *khatauni* was fixed Rs.20/- per ROR, out of which, Rs.15/- was to go to the government and remaining Rs.5/- was service charges to *e-sangwari* centre.

Audit noticed various irregularities in the implementation of this scheme which are given below:

↓   Issuance of *khasra* and *khatauni* from Tehsils office was stopped on the orders of the Collector, Bilaspur (July 2004) without authorisation by the Commissioner, Land Records. This was in complete violation of the State gazette notification (October 2002) according to which this authority was vested with the CLRCG.

↓   It was not clear how the range of amount for the same service i.e. providing ROR could range from minimum Rs.5/- for *khasra* and maximum of Rs.50/- for vehicle registration. Fixing the amount of money charged from the citizens according to the purpose for which the ROR was to be used when the process to get the ROR remained the same was completely unjustified and results in gross overcharging from the citizens.

↓   As per the instruction (May 2005) of Collector, the *e-sangwari* centre were required to deposit the government share of revenue daily in tehsil office and the Tehsildar was required to deposit it in government account weekly but it was noticed that the centres were depositing the amount in government account directly only on a monthly basis.

↓   It was noticed that no standardized format was utilized while entering agreements which was evident from the fact that out of 10 tehsils/sub-tehsils in four tehsils electricity charges and annual maintenance charges of equipments placed with *e-sangwari* centres were required to be paid by the tehsils/local administration whereas in remaining six tehsils these charges were to be borne by the private firm. It was also noticed that there was no monitoring of these centres by the Tehsildar and Collector. Morevoer, even after lapse of two years from agreement

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[29]   *Tehsils: Bilaspur, Kota, Lormi, Bilha and Masturi, Sub-tehsils: Sakri of Tekhatpur tehsil, Jarhagaon, Sargaon and Pathariya of Mungeli tehsil and Sipat of Masturi tehsil.*

(July 2004) no kiosks were installed in Bilaspur tehsil as agreed by the firm.

↓   There was no complaint redressal mechanism against deficiency of services by these centers. As they were outside the inherent control of rules meant for government departments the firms maintaining these centers were virtually operating without any accountability even while charging citizens for giving ROR etc.

↓   Importantly, there was hardly any use of Information Technology and Communication Tools for providing the service to the citizens and the *e-sangwari* centers merely acted as middlemen between the citizens and the government departments. Thus creation of separate centers in the present form only for receipt of application and providing ROR received from the tehsil office was completely unnecessary.

The Tehsildar and Collector, Bilaspur did not offer any comments over the issue (July 2006). The matter was brought to the notice of CLRCG in July 2006; reply was awaited (September 2006).

3.4.16 Conclusion

The scheme of computerization of land records was started in 1988-89 in erstwhile State of Madhya Pradesh and was re-launched in Chhattisgarh State in November 2002. However, the scheme has not resulted in a stable and reliable system of maintenance of land records and generation of ROR. The information in the system was found to be replete with errors due to deficient system design, incomplete data capture from the manual records and deficient controls over the input of data. Moreover, the data has not been updated in most tehsils after September 2002. As a result the concept of Land Information System (LIS) as envisaged in the scheme could not be achieved with such erroneous, unreliable and dated data.

As the scheme was not effectively managed and was implemented in a lackadaisical manner, the computerization of land records has merely resulted in duplication of work, infructuous capital expenditure on hardware/software and unfruitful recurring expenditure. The department was still dependent on the manual system for all practical purposes. Large amount has been spent in the scheme without following principles of financial prudence Thus even after 17 years and incurring huge expenditure the scheme had not reached a stage where the intended benefits of computerization could be realized to the citizens of the State.

3.4.17 Recommendations

For effective implementation of the scheme in the State, the Government needs to take the following steps:

↓   It is to be ensured that the captured data should be correct besides ensuring completeness and timely updation.

↓   Effective field monitoring at tehsil and district levels at regular

intervals (monthly, quarterly, half yearly) should be introduced. Monitoring and evaluation system should be evolved and implemented diligently.

↓ Working of State level as well as the district and tehsil level committees meant to implement the scheme should be geared up and made effective.

↓ For updation of data a time schedule should be prescribed and scrupulously followed. Similarly, a backup and security policy should be prescribed and followed.

↓ Manpower skill should be developed through computer training and refresher courses periodically to ensure optimum use of procured hardware. Further, annual maintenance contracts for computer hardware needs to be entered into.

↓ Necessary facility available in manual system of land records should be provided in computerized system and basic platform for development of the software should be fixed for uniformity.

↓ Expenditure for infrastructure creation and implementation of the scheme should be done in a transparent manner following the principles of financial probity and accountability.