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# PROMISE AND PITFALLS OF COMPUTERIZATION OF LAND RECORDS IN TAMIL NADU: AN EMBEDDED CASE STUDY OF TAMIL NILAM

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**Abstract:-**

In the last two decades, major e-governance projects were initiated in India with the explicit aim of bringing greater transparency and accountability to the government transactions. One key site of application of ICT for governance has been computerization of land registration (CLR) process. To what extent have CLR initiatives been successful in addressing transparency and reduction in corruption? Through a case study of Tamil Nilam project in Tamil Nadu, this paper argues that CLR projects have reduced transparency to a question of "technical deployment" and thus underutilized the radical potentials of ICTs. Instead, CLRs may have inadvertently facilitated corruption and opened new avenues for criminal activities. Through a detailed case study of Tamil Nilam, a Tamil Nadu state-wide application of CLR, this paper presents some of the challenges and problematic involved in implementing ICT based solutions for improving land records registration processes. It is unrealistic to expect ICTs to mitigate corruption but these projects have had limited success in Tamil Nadu for several reasons discussed in this paper.

**KEYWORDS:-**

Information and Communication Technology (ICT), Computerization of Land Records (CLR), Land Reform, Tamil Nilam, India, Tamil Nadu, Case Study.

## INTRODUCTION:-

In the last two decades, the concept of transparency has gained considerable traction in the discussion of governance. Application of new Information and Communication Technologies for Development (ICT4D) has been traditionally framed within the discourse of "e-government" or e-governance." The concept of transparency and accountability has been one of the central problematics in making ICT work for the citizens. More recently, scholars have extended ICT4D approaches to incorporate the concept of "radical transparency" inspired by the principles and practices of open source software movement (Kelly,1994; Brin, 1999). Radical transparency calls for open sharing and exchange of information at every relevant level of public interventions (Brin, 1999).

The concept of transparency has been a central guiding principle in governance reforms in India. The Right to Information Act (RTI) and many initiatives to make government documents available to the public arena examples of the attempts to operationalize the concept of transparency. More recently the central and state governments are investing in e-governance projects that seek to use new information and communication technologies (ICTs) to enhance the goal of achieving what some scholars have called "radical transparency" (Oliver, 2004).

This notion of transparency followed developments in free and open source software (FOSS) movement (Tapscott and Ticoll D, 2003). Most of these projects work on the assumption that increased

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transparency would reduce corruption. The expectations are that open and free access to information available with the government would empower citizens, enable participation and thus act as a check to abuse of power. One critical test of the claims for e-transparency can be found in the application of computers for land administration since land ownership represents the primary operational indicator of a free society- that of property rights. The need to reform land information management has been recognized as a significant challenge within the overall land reform policies in India, and the potential of a computer application to facilitate this process was well understood (Bhatt S.C, 2006). As a result, some of the significant efforts in land reform included consideration of extending the e-governance model to land record maintenance and management. Bhoomi in Karnataka and CARD (Computer Aided Administration of Registration Department) in Andhra Pradesh, both in India are presented as examples of successful projects.

All state governments have invested in CLR with the support of full funding from the central government [1]. Most of the studies have been focusing on the technical efficiency of CLR to delivery end-user services and consequently paid less attention to the long-term outcomes, especially concerning reducing corruption [2].The question remains as to what is the impact of CLR in bringing greater transparency and reducing corruption.

In this paper, we argue that while there are obvious benefits of e-transparency in governance, there are also considerable risks and constraints in applying the concept in practice. The main argument that we forward are that ICT based application can increase transparency in governance, but its outcome concerning reducing corruption cannot be taken for granted. Based on a case study of computerization of land records (CLR) initiates in the state of Tamil Nadu, this paper argues that CLR has the potential to facilitate corruption, rather than restraining them.

Concerns over digital divide during the late 90s triggered a search for opportunities that would enhance the relevance of ICTs for development. Application of ICTs for land registration has been one of the earliest efforts in ICT4D initiatives [3]. Many CLR project was conceptualized along the lines of other successful initiatives such as Bhoomi in Karnataka, Stamps Registration and Archiving (SARITA), Versatile Online Information for Citizen Empowerment (VOICE), eSeva, Gyandoot, and the well-documented e-Choupal. These projects have aimed to increase transparency and thus reduce corruption in the administration of land transactions implies a dialectics

## LITERATURE REVIEW

Reform of land records has been of great interest to citizens, landowners, government administration, and policymakers. The fundamental notion of property rights has been operationalized regarding maintenance of land records. Especially the problematics of land tenure has been traced to colonial administration in India Banerjee and Iyer (2005). Many suggestions for improving land record maintenance have been made

Computerization of Land Records (CLR) has been one of the earliest efforts to support the realization of e-transparency in India (Habibullah and Ahuja 2005). Many studies have examined the application of ICTs for land record maintenance in various Indian states and union territories (Agravāla, 2010). For example, Ahuja and Singh (2006) have provided the experience of computerization in West Bengal, while Chawla and Bhatnagar (2004) have explored the situation in Karnataka with specific reference to rural farming land. Bhatt, (1999) provide an early demonstration of computerization of land records under the CARD project in Ahmedabad.

Deininger and Goyal (2010) have studied the effects of computerization in the land registry in India. Singh and Dubey (2012) have provided a comprehensive overview of the significant challenges in CLR. Thakur, Dutta, Khadanga, and Venkatesh (2005) have argued for critical assessment of the social impact of land records, pointing out that development of CLR should take into account the long history of land reform in India and how histories shape application design considerations. Venkatesh, Pradhan, Omlata, Thakur and Misra, (2013) pay close attention to challenges facing data integration of existing manual record systems with modernized ICT-based systems.

The relationship between CLR and governance has been studied by Vasudevan (2006) in the context of Tamil Nadu. The significance of CLR in reducing transaction costs and enhancing transparency has been highlighted by many authors (of Bhatnagar, 2008). CLR also features in many studies on ICT applications for rural development and e-governance projects (Ghosh, 2011; Gorla,2008; Jafri, 2002; Rao, 2004).

The political economy of computers in governance has been the subject of comparative studies across different sub-regions in India (Kumar, 2009). ICT for land reform was seen as a way to bridge the

digital divide (Mohanty, 2008; Raja, 2009). Significant challenges in implementing CLR in India, within the context of ICT4D projects, were highlighted by Prakash and De (2007). Taking the case of CLR in Bangalore Benjamin, Bhuvaneshwari and Rajan (2006) provide a critical assessment of computer applications framing the process as an "anti-politics machine." The authors question the relevance of CLR by arguing that the computerization is driven more by mandates of globalization rather than land reform to benefit the citizens.

The studies reviewed above have few common themes: 1) CLR is considered a necessity and inevitability 2) CLR are seen as an extension of on-going land reform and improvement in the efficacy of governance 3) CLR is conceived within the discourse of improving governance. 4) The current manual system is framed as being inefficient, corrupt and limited and, 5) The primary justification for the implementation of CLR was to improve organizational performance, transparency and reduce corruption and malpractices. Thus, the literature suggests a set of criteria for evaluating CLR in the light of design, development, and deployment of CLRs. Against, this background expectation, it would be pertinent to ask to what extent CLR has met the performance criteria of improvement in transparency and a corresponding reduction in corruption. Behera, and Singh, (2009) make a more specific case for land mutation records: "Automation of mutation process has reduced the turnaround time of mutation requests, thereby reducing the workload of revenue officials."

## METHOD: EMBEDDED CASE STUDY DESIGN

This paper adopts an embedded case study design (Scholz, and Tietje, 2002) in which the case is Tamil Nilam, an application for computerization of land records in the state of Tamil Nadu of South India. The case is used to demonstrate the problems and challenges facing e-governance projects in general and CLRs in particular. The empirical investigation into Tamil Nilam was driven by the theoretical concerns over transparency in governance.

The design follows the protocol set out by (Scholz, and Tietje, 2002) in which the primary purpose is the 'comprehension of the case as a whole in its real-world context. The Main sources of data includes Interviews with revenue officials, citizen's users of Tamil Nilam, relaters, software developers from the state unit of National Informatics Centre (NIC-NET), project documents: court cases, Controller of Auditor General(CAG) Report, Tamil Nadu Revenue Department (TNRD) annual report, policy note of Government of Tamil Nadu, internal documents on project evaluation and, media reports.

As the case study progressed, several subunits were identified, such as reports of police departments and notices of banks and other financial institutions involved in the land-related issues. Embedded case study design recognizes the complex nature of the e-governance systems, where multiple agencies, actors and, norms and rules interact in ways that cannot be anticipated and hence hypothesized. The modular nature of the Tamil Nilam was treated as sub-systems into the broader information systems serving related functions in public administration. The CLR projects are highly context-dependent, and hence a complex systems approach based on embedded case study design was preferred. However, the central guiding question revolves around transparency and reduction of corruption, since these goals are explicitly articulated as the overarching facets of CLRs. The study attempts to analyze the current problems and development of Tamil Nilam based on what is known about the application in the public domain and is backed by observations, field visits to Taluk offices, computer sections various government departments implementing e-governance applications, examination of printouts of various land records from the system. The purpose of the embedded case study is to validate and locate the reasons for the perceived failure of the system to reduce corruption as articulated in the public discourses on land administration (Scholz, and Tietje, 2002).

## CASE DESCRIPTION OF TAMIL NILAM

In Tamil Nadu, Tamil Nilam (Tamil Nadu Info system on Land Administration and Management) project was started with following essential aims [4]. 1)To implement comprehensive and transparent land information 2) capturing entire workflow of land records maintenance with a provision to store, retrieve and process land records data containing ownership, tenancy rights, crop details, land revenue, the source of irrigation, mutation, it is updating, and dispute resolution. 3) On-demand distribution of digital copies of Record of Rights to the landowner at reasonable charges with a 4) provision of online mutation module for ownership changes, seasonal crop updating, at this level is necessary. 5) Provision of legal sanctity to computer-generated certificates of Land Records title documents after authentication by authorized revenue officials. 6) To generate and integrate various levels of data for purposes of planning, monitoring, evaluation of development programs. These objectives are reflected in the design choices made during the

development and implementation of CLR [5]. Such systems are seen as an integral component of e-governance initiatives across India and reflect the thrust arena of government [6].

Tamil NILAM is a major citizen-centric e-governance initiative of Government of Tamil Nadu, which was designed by the state unit of National Informatics Centre (NIC). Tamil Nilam is part of the state governments' larger initiatives for Electronic Delivery of Services (EDS.). In addition to land registration, Tamil Nilam system facilitates old age pension certificates management, public grievances redressed, personal and payroll system of the state government. The system interface works seamlessly with Tamil Language, m making it easier for administrators and citizens-users. Tamil Nilam works in tandem with other government services such as STAR (Simplified and Transparent Administration of Registration) specially designed issuing encumbrance certificate. Tamil NILAM was implemented in 194 taluks. Touch Screen Kiosks was installed in 127 taluks, which have been used by more than six lakh people in the till 2012. GIS tools were used to generate field maps was also implemented in two Taluks, and the government approved the software for use in all the taluks in the State [7].

The Centrally Sponsored Scheme on Computerization of Land Records (CLR) was started with cent percent financial assistance to remove the problems inherent in the manual systems of maintenance and updating of land records and to meet the requirements of various groups of users. It was decided that efforts should be made to computerize core data contained in land records, to assist development planning and to make records accessible to people, planners and administrators [8]. As of 2011, 216 of 220 Taluk offices have been computerized, with all records digitized. However, as the CAG report (2009) on CLR shows, the implementation of Tamil Nilam has been uneven with some taluk (such as those in the district of Kancheepuram, Krishnagiri) better adapted to the new system than other districts (Ramanathapuram, Villupuram [9].

Despite these differences, the state of Tamil Nadu has progressed considerably in the adoption of CLR to the extent that the government banned all standard documentation through its GO of 2003 [10]. Since then most land-related transactions in Tamil Nadu (like Issuance of RoR, EC, and Mutation certification.) have been facilitated through CLR [11].More recently National Land Record Modernization Project has made more central funds available for up standardization and up gradation of CLR in the state, even though there are some concerns over proper utilization to these funds, as pointed out by Controller of Auditor General (CAG) of India [12].

The project ranked at number five amongst twenty e-governance project evaluated by Kochhar, and Dhanjal (2004) with a score of 8.6 out of ten. The authors used criteria such as the number of records entered into the system, electronic delivery of land documents using barcodes, and a reduction in the number of trips to receive documents. The evaluation also showed marked improvement in service quality and governance, measured on a five-point scale(bidi.). However, this study does not address the reduction in corruption following the implementation of the system. Has Tamil Nilam reduced land disputes?

## RESULTS

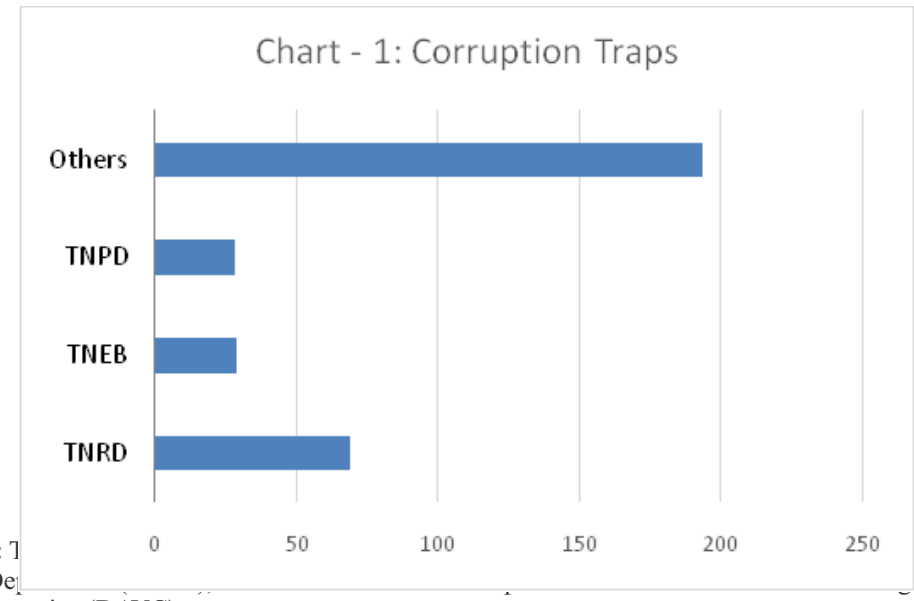
To what extent the experimentation and use of CLR in Tamil Nadu have an impact on corruption in land transactions? In order to answer this question, we examined data from the police departments on land-related cases, media reports, internal government documents, reports by Directorate of Vigilance and Anti-Corruption (DAVC) and Controller of Auditor General (CAG), Government of India [13]. Data gathered from multiple sources, listed in Annexure 1, indicate that the problems of corruption in land dealings in Tamil Nadu were deep-rooted, complex and depended crucially on access to information. Since most of the land related information and services has been digitized and brought under Tamil Nilam, the question over CLR's role in the process cannot be ignored.

There has been a tremendous increase in the cases of land grabbing and land document forgery in Tamil Nadu in the between 2005-2011, the period in which Tamil Nilam was implemented [14]. There was at least one high profile land grab story in a week reported by mainstream newspapers. Land grab has topped all crimes in the state with complaints and allegations from all critical taluk adopting CLR [15].

The extent of land-related frauds has reached a proportion that warranted the state government to initiate several measures to contain and reverse land grabbing and forgery case [16]. According to one policy note, the "anti-land grabbing cells" that it established have received more than 34,000 complaints across the state [17]. The government established thirty-nine anti-land grab cells, one each for each district and one each with each police commissioner; and twenty-five fast-track courts for the quick disposal of cases. Further, an estimated 1,225 criminal cases have been registered by landowners since June 2011, on charges of forgery or forcible possession, in comparison to at 111 in 2005, 127 in 2006. As of 2012, 3,070 acres of land and 14, 77,424 sq. Ft. of housing plots were illegally possessed. The report indicates that only about Rs 1,156 crore have been retrieved and returned to the rightful owners [18]. Further, to the 1,178

cases, about 2,034 people arrested since 2011 [19].

In addition to illegal appropriation of land, another common offense has been documented forgery for obtaining loans [20]. The extent of the problem can be discerned by examining a circular sent to all Indian banks by Reserve Bank of India (RBI), the nodal agency for implementing and monitoring monitory policy. In this circular to banks, RBI warned that an estimated three to four out of ten documents submitted to banks might be forged [21].




**Legend:** T amil Nadu Police De ilance and Anti-Corruption (DAVC)

TNRD which is responsible for implementing CLR is considered the most corrupt department in the state (See Chart 1) [22]. The TNRD has topped in the number of corruption cases booked by the Directorate of Vigilance and Anti-Corruption (DAVC). Of the total 319 trap cases registered by the agency between April 2010 and October 2011, Revenue Department officials were involved in sixty-nine, the Tamil Nadu Electricity Board and Police Department followed with twenty-nine and twenty-eight cases.

This leads to the conclusion that CLR has the potential to facilitate corruption rather than containing it. While improvements in performance and efficiency have been achieved, this has come at the cost of creating a new kind of asymmetry between various interest groups. The dramatic increase in land-related crimes suggests that computerization might be involved in the process, to a greater or lesser degree, in facilitating land grabbing on the one hand. While CLRs potential for mitigating, such crimes need acknowledgment, the design choices and lack of attention to security concerns might have precipitated the problem of corruption in land dealings. A review of several documents relating to Tamil Nilam's design and implementation indicates that insufficient considerations have been given to the securing and validation of the land documents as they move from manual to digital systems.

Further, there was a lack of coordination and information exchange between the police department and registration department, and as a consequence opportunity for cross-checking even for obvious, disputed cases were not undertaken [23]. This lead to the situation where the "original" computer records, themselves did not accurately reflect the ownership details or the nature of disputes [24]. The results were that the computer records themselves were forged, with no mechanisms for corrective actions.

How can we explain the increase in corruption and to what extent CLR can be held responsible for these? Corruption is a complicated issue, and multiple factors are involved in the process of land-related criminal activities. The manual system of land record maintenance has added newer methods of corrupt practices [25]. However, it is clear from these cases that the stated objective of reduction in corruption has not taken place in land management, and we need to consider aspects of CLR that might have contributed to this process. There are various channels through which CLR facilitate corruption as elaborated below.

Reification of default settings through incorrect original data or glossing over historical contested claim over the land and by privileging default landowners the system reifies, freezes, the ownership rights. The result was an arbitrary system-driven resolution of disputes over a legal and mediation based ones. The

scope and informal settlement of disputes increased the opportunity for corruption. One estimate claimed that over seventy percent of the cases in the courts in Tamil Nadu are land-related. Over 40% of the land titles were disputed.

Re-centralization of records at the Taluk level reduces the role of village administrative officers and hence shifts the corrupt practices from village level-where the bribe amount was relatively small to taluk level where it has become higher. CLR increased the stakes on land through a process of aggregation of data and thus shifted the scope of corruption from diffused local level issue to a state-wide to consolidation. With the shift in decision making to higher administrative units, the local knowledge about land disputes, which were once available at village level, was disregarded, facilitating organized crimes and corrupt practices around the land.

Information Asymmetry among different groups also accelerated corruption. Realtors, land brokers, advocates, and other middlemen were the regular heavy "users" of information available through CLR. Since the vast majority of the land transactions were one-off deals-most of the owners, engage in land selling/buying only once or twice in a lifetime. Therefore, there were little incentives for citizens-owners to learn the complicated process and procedures involved in land dealings. This was especially true for first-time landowners.

On the other hand, most intermediaries and prominent realtors are heavy users of the system and hence have an inherent information advantage [26]. This creates an information asymmetry that privileges the heavy-regular users of CLR at the expense of poor, illiterate and rationally ignorant citizens. More transparency benefits those comparatively more capable of taking advantage of increased available information, reinforcing already existing social inequalities.

Re-intermediation has emerged as a new phenomenon in the land market. Since 2005 reality market in Tamil Nadu has seen an increase in the amount and volume of the land transaction and has opened new employment opportunities for land transaction-related services. As a result, there was a tremendous increase in middleman who emerged to fill the service gaps with many employed as part-time, full-time and even freelance land brokers and service providers. People with knowledge of the land in their local communities emerged as powerful Intermediaries. These intermediaries were co-opted by realtors and financiers especially in the highly-valued locations—suburban, peri-urban and locations proximate to the cities [27].More importantly, for the investors in land, the business depended on having access to land related information, which the local agents were willing to provide. CLR enabled influential stakeholders to take advantage of local knowledge and gaps in the systems through enlisting paid community workers

Control of Land Information Market by CLR enabled stakeholders to more precisely locate valuable and disputed lands for possession; both through legitimate and illegal methods, thus created new avenues for corruption. Increase in demand for land for housing, industries, and investment intensified the competition amongst middlemen and intermediaries. As a result, there was a new demand for information about the potential marketable land. There was an increased incentive on the part of the people who have access to this information through CLR (like the staff of revenue department) to selectively part with information for financial consideration. There is a clear case of collusion with the administrative staff in exchange of information. Anyone can in principle get the copy of the Records of Rights, Tenancy, and Crop inspection register (RTC) by paying a little fee. Thus, records became transparent, as it is easy for stakeholders to verify data on the landholdings of anyone. E-Transparency increased the ability of interest groups to manipulate such data. This led to an increased the risk of misinterpretation or misuse of data and compromised confidentiality. Land that is vulnerable to appropriation included lands under family disputes, properties with no clear titles, lands with incomplete records, land registered under the name of dead people, absentee landlords, Non-Resident Indian (NRI) owned lands and lands belonging to old people. This information is easily retrievable and tradable in the land market. Small landowners were especially vulnerable. Many intermediaries even offered to negotiate with other family members to bring the disputed land to the market [28].

Forgery and Cloning of land documents becameanother mechanism of corruption [29]. It has become easy to gain access to details of land records either through impersonation or privileged leaks by inside staff. As a consequence, forged and cloned documents were quickly created. Thus, CLR facilitates the risk of forgery leading to outright land grabbing. Of course, this was possible even under the old manual system, but with CLR the process was made more efficient, fast and less detectable, especially when the digitized records themselves can be changed. Many banks now faced this problem early as the same documents were given as collateral/surety for multiple loans, and it became hard to distinguish between the real and the fake documents.

Misuse of Right to Information (RTI) Act for seeking information became another strategy for locating marketable land. Many intermediaries had used the RTI Act to seek information on lands held by the government, public, and private trust and organizations [30]. With this information, they were able to

reconstruct the details of vulnerable lands (e.g., 1-5 acre, but not too large tracks of land to avoid suspicion) [31]. If the land has not been marked out for any other purpose or has remained inactive for long, then they were targets for land appropriation.

Misuse through land use conversion, proposed in public administrations' land use policies were also manipulated. CLR facilitated great reclassification tracks of conterminous farmland held by diverse small landowners into residential plots or consolidate them into single ownership. Under the manual system, such undertakings were challenging, requiring piecing together several disparate documents. Especially lands that were distributed under various land reform schemes were vulnerable to re-classification. Many small farmers who have received lands through government redistribution policies began applying for reclassification of their land from farming to residential or commercial. As cases registered with the police indicate, these changes could be carried out without land owners knowledge. Since the mutation of records did not reflect in CLR during the early stages, the scope for such conversions became very high and attractive. This was especially evident in locations close to cities. Even though the CLR required that all mutation requests to be logged into the system by an operator, and such requests may subsequently be rejected after formally recording a reason, in practice this did not happen.

Lack of interconnectedness among departments is another source of corruption. In the early stages, Tamil Nilam had not been networked with other government departments, and hence the information available at registrar did not match with that recorded in Tamil Nilam. Further, there was no interconnection with anti-corruption or police department, thus limiting preventive measures. The lack of interconnectivity means that lands were registered with forged documents and the scope for validation of data was severely constrained.

Corruption amongst of the revenue staff posed another visible but not factored into the design of Tamil Nilam. Employees of the revenue departments continued to subvert the reform by strategic non-cooperation and deliberate creation of errors in the records. The staff of the revenue and registrar departments, while getting trained in the new CLR, had also learned to hack the new systems [32]. By continuing the physical separation of counters for the issuance of computer outputs and payments of the fee the scope of corruption increases.

## CONCLUSION

While CLR implemented through Tamil Nilam had achieved transparency, it has failed to reduce corruption. Computerization alone cannot be a sufficient tool to tackle corruption [33]. Nine significant themes or mechanism were identified to account for the persistence of corruption in land record maintenance and processing. These were: 1) Reification of default settings 2)Re-centralization of records 3) Information Asymmetry among different groups 4) Re-intermediation 5) Control of Land Information Market 6) Forgery and Cloning of land documents 7) Misuse of Right to Information(RTI) Act 8) Lack of interconnectedness among departments 9) Corruption amongst of the revenue staff.

A significant insight from this case study is that it is challenging to separate if particular land transactions are the results from flaws of the system that can potentially be fixed or if it is an outcome of design choices that serve specific interest groups. Put differently, and it is difficult to separate land transactions that algorithmically code with an intention to subvert the system from those emerging from bugs in the systems. Outcomes of transparency depend not only on what is revealed but also on how the information is assessed, used and acted upon. More importantly, who gets access to, and make design choices about the sub-modules of the system is critical.

Tamil Nilam design provided little focus on reducing corruption. The system design did not take into account forms of corruption and ways to minimize it. Instead, the assumption was that computerization would automatically lead to transparency and since transparency was assumed to reduce corruption, it was uncritically concluded that the systems technical superiority would ensure mitigation against corruption. The application was focused on the narrow purpose of increasing revenues and administrative efficiency. The commitment to reducing corruption was never reflected in the design stage or operationalized in its implementation.

Transparency might also put powerful landowners at risk as motivated individuals can obtain their data. Small landowners, with limited political or financial power, were at higher risk from transparency than large owners. The fundamental problem that the case study revealed about e-governance model is not that the ICT-applications would fail to provide a transparent system but that the old corrupt practices would quickly adopt the new tool and even reinvent new modes of corruption.

The problem is with the uncritical belief that increased transparency would lead to reduced corruption. The relation between transparency and reduction in corruption is contingent on how social and organizational systems are transformed, rather than how they could be translated from analogy to digital or

manual to automatic.

CLR and e-governance, in general, might work if we have a stronger punitive system and speedy judicial procedures to resolve conflicts because the primary factor that contributes to corruption is the low probability of discovery, and perceived immunity against prosecution. The underlying cause can be traced to the compromised character of institutions that investigate charges of corruption as well as the slow judicial processes further exacerbate the problem of corruption and facilitate immunity against prosecution. Keniston (2002) gives an example of an observation made one officer involved in CLR project: "the officer involved in computerizing land records in one Indian state recently said more than half of them are legally contested, or in the names of dead people, or illegible, etc. Computerising land records is on the agenda of almost every Indian state. It will be interesting to know how some states that claim to have done it have succeeded.

Transparency by itself does not amount to much as a democratic reform agenda. Without an adequate legal and institutional framework which guarantees oversight and is capable and willing to impose penalties, ICT enabled transparency might increase the risk of "revenge effect." Is transparency always good? The point is not to dismiss transparency as a failed ideal, but to underscore the importance of balancing transparency with confidentiality, privacy, and secrecy and institutional reform. We should embrace transparency, knowing its limits.

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