

Digitization of Land Management: Maintenance of Ownership Records, Transfer, Registration and Mutation

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Abstract: Land is an important asset on which fulfillment of our all basic needs like food, clothing, habitat, etc. depends directly or indirectly. Its proper management, justifiably, relates to ensure the fulfillment of those basic needs. But land management system in Bangladesh, as a legacy of colonial administration, is neither people oriented nor goal oriented but a revenue based one. It is one of the most complicated and public sufferings-prone sectors. Even after so many years of the independence, insignificant development has been made in this regard. This paper identifies management weaknesses in preparing ROR, Mouza Maps, maintaining records of land ownership, processing of transfer of ownership i.e. registration and mutation. It finds that current traditional land management system is complicated, time-consuming and involves personal discretionary decision process - which affects transparency and accountability. The paper recommends that an integrated single data-base on land holdings and ownership, registration and transfer under one single umbrella would reduce public sufferings, facilitate ensuring transparency and accountability; reduce land related disputes and contribute to overall development process of the country.

Introduction:

Land is an important asset on which fulfillment of our all basic needs like food, clothing, habitat, etc. depends directly or indirectly. Its proper management, justifiably, relates to ensure the fulfillment of those basic needs. But land management system in Bangladesh, as a legacy of colonial administration, is neither people oriented nor goal oriented but a revenue based one. It is one of the most complicated and corruption-prone sectors. Even after so many years of the independence, insignificant development has been made in this regard.

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Despite a number of land reform programmes taken by the Government of Bangladesh since its inception, management of land still remains one of the complicated tasks for the government of Bangladesh. Reform initiatives including promulgation of Presidential Order (PO) 96/1972, PO 98/72, promulgation of Land Reform Ordinance, 1984, promulgation of Non-Agricultural Khas Land Management and Settlement Policy, 1995 and Agricultural Khas Land Management and Settlement Policy, 1997 made to ensure the best use of land. In addition, a number of projects namely computerized land management system as a pilot project, implementation of Computerized Land Ownership as a pilot project, land record archiving and automation of record room at the Office of the Deputy Commissioner, Manikganj, preparation of mouza map and khatian of the five mouzas of Savar upazila and digital database of Dhaka city land records were implemented but none of them made sustained impacts as originally planned. All these efforts were in different locations and were implemented separately where there was a clear lack of coordination. Although efforts were seen at a regular interval to streamline the land management including promulgation of various laws and rules at different times but implementation of rules and regulation were not so evident. In addition, there was a clear lack of proper database in case of preparation of land records that is, records of rights (ROR) and Mouza Maps, transfer and registration and updating ROR through mutation etc.

1.1 Objectives

Land Management covers a plenty of activities like, maintaining records relating to ownership, transfer of ownership, right to use, access to use, records of land characters and so on; which is one of the core businesses of the state. Ensuring citizen's entitlement, ownership rights, rights to use, rights to access are the constitutional responsibilities of the state. Bangladesh inherited a traditional land management system which is mainly dealt with by manual process and procedure. Because of traditional process and procedure land management is affected by the personal discretion, authority and decisions which makes the system ineffective, non-responsive and unfriendly to the service recipients. Against this backdrop, this article is attempted keeping in view to achieving the following objectives:

- identify the major weaknesses in the process of preparing ROR

and Mouza Maps, transfer and registration of ownership of land and updating ROR through mutation,

- identify the areas of digitization and find the ways which can reduce land related problems; and
- find the ways to ensure transparency, reduce corruption, public sufferings and make land records accessible to the beneficiaries and stakeholders.

1.2 Rationale

As land is one of the most valuable physical assets of mankind so the development of a country depends largely on the manner this resource is managed. Major development activities of a country such as poverty alleviation, agriculture and food security, shelter and housing, natural resource management etc. all are closely linked to the factors of land and how the land is managed. Without sound management of land it is very difficult to meet the goals of development. Present land management includes preparation of ROR and mouza maps, transfer and registration of land due to sale or any other forms of transferring ownership and updating ROR through mutation and other day to day activities relating to ownership, rights, entitlement, use and access to land. Among them ROR and mouza maps are prepared through the process of survey and published by DLRS and handed over to Deputy Commissioners, Upazila and Union Land Offices for land management between two surveys are conducted. Records are used either for the implementation of land use policy or settlement of khas land or updating ROR through mutation as a consequence of any transfer or registrations.

Due to lack of proper land database and faulty updating of records sometimes a single piece of land is transferred several times to different persons leading to land litigation. Due to complex process and lack of coordination among different departments responsible for land management, it is not easy to have access to the land matters by the land owners to get the real picture of their land. At the same time, more time and money are to spend to get the information as well as service.

Introduction of digital land management system can facilitate the management authorities to maintain records with less cost, time and human resources. Digitization can facilitate the service recipients to obtain information quickly. At the same time, with updated data

coordination among the departments involved in land management will be easier which will eventually lead to a transparent and efficient land management. With transparency and efficiency it will be easier to serve the people best as well as to implement different land use policies of the government. This paper attempts to identify the weaknesses of land management particularly the problems of existing ROR and mouza maps, problems in the process of preparing ROR and mouza maps, problems of transferring and registering land as well as updating ROR through mutation. For a better land management including recording, transferring, registering and updating records through mutation the use of modern technology through digitization for the optimum use of land.

1.3 Methodology

The study is based on secondary data and information. Relevant books, journals, periodicals and daily news papers have been consulted to have a conceptual framework. Data regarding weaknesses and areas of improvement through digitization have been collected mainly from experiences of the field level personnel involved in the process of land management. Intensive searches have been made especially for sharing the experiences of digitized land management across countries.

2.0 Historical background of land management in Bangladesh

The present land management system in Bangladesh is the legacy of colonial land administration which was neither people oriented nor goal oriented but a revenue based one. The land revenue system was first introduced at the time of Hindu Rulers of ancient India. Sher Shah introduced a regular system of land measurement together with the assessment and collection of revenue. He worked on land record survey from 1540 to 1545. Then Akber, the great Mughal Emperor introduced a universal and standard way of land record and survey (Debnath: 2000: 16). The British established an elaborate system of land survey and registration based on the concept of net assets. In 1793, the Permanent Settlement Regulation vested rights to own land to a class of Zaminders. From 1888 to 1940, a Cadastral Survey (CS) of undivided Bengal created the original record of land rights. This is often still accepted as evidence by modern courts.

In 1947, the then Pakistan continued with a version of the net assets system but this declined in importance due to reduced frequency of settlements and poor maintenance of land records. After the enactment of The State Acquisition and Tenancy Act, 1950, the Zamindari system was

abolished. State Acquisition Survey was conducted from 1956 to 62, based on the CS blueprint. Although revisional settlement operation commenced in 1965, but progress was very slow and by 1995 it had only been completed 10% of all thanas. (The Daily Star: 2006). In this procedure the preparation of land records are entrusted with the Directorate of Land Records and Survey (DLRS) with the direct supervision of Zonal Settlement Officer. After preparation, land records are handed over to the collector and Upazila and union land offices. In between two settlement operations the land records are updated by the Assistant Commissioner (Land) as a result of sale or any other form of transfer under the supervision of Deputy Commissioner.

Immediate after the liberation of Bangladesh, a number of initiatives were taken for streamlining land management. In 1972 through the promulgation of Presidential Order-98/1972 a ceiling of 100 standard bighas was established and The Bangladesh Land Holding (Limitation) Rule, 1972 was made for the recovery of access land with a view to distributing excess land among landless. In 1984 promulgation of the Land Reform Ordinance limited future land acquisition to 60 bighas whilst retaining present ceiling of 100 bighas. Benami (not in real name) transfer were outlawed, legal recognition to the rights of sharecroppers was given for the first time and sharecropping was established as the admissible form of tenancy contract.

In 1988, Cluster Village Program started resettling landless people but the success is also a very little. In 1997, a new Agricultural Khas Land Management and Settlement Policy was introduced for providing land to the landless for ensuring justice and equity. Recently government has decided to provide land to the landless as part of land reforms. In 2004 Registration Act has been amended to minimize corruption and reduce litigation in the case of registration imposing some compulsion upon registrar to register a piece of land or any other documents. The present government has declared in the charter of change namely Vision 2021 at page 10 that "All records will be computerized and a land reform commission will be formed to ensure increased production and social justice in the distribution of land and water resources".

2.1 Legal Basis of Land Management

Land management is a complex matter which is operated and controlled by a number of laws. Among them The State Acquisition and Tenancy Act, 1950 is treated as the mother law for land management. To comply

with the objectives of the said act Tenancy Rules, 1955 is the supplementary rule. Rule 26-35 of the Tenancy Rules, 1955 are used to prepare the Record of Rights, section 116 and 117 of The State Acquisition and Tenancy Act, 1950 is used to update the land records through the amalgamation and separation of holdings respectively. Survey Act, 1935 is the mother law for survey and settlement operation which is supported by the Survey and Settlement Manual, 1935 and Technical Rules on Survey, 1957 (Mia: 2003: 31-97). Transfer and registration of any land is done as per Registration Act (Amendment), 2006 which is supported by Registration Rules (Rahman: 2006). All these acts and rules are supported by some other substantive rules and regulations.

3.0 Understanding Digitization of Land Management

This article uses the conventional definitions of various concepts relating to land management as clarified below:

3.1 Land

According to The Concise Oxford Dictionary, 'Land' means the 'solid part of the earth's surface'. The word 'land' is also defined in subsection 16 of section 2 of The State Acquisition & Tenancy Act, 1950 as 'Land means land which is cultivated, uncultivated or covered with water at any time of the year, and includes benefits to arise of land, houses or buildings and also things attached to the earth, or permanently fastened to anything attached to the earth' (Alam: 2007: 172)

3.2 Land Management

Traditionally, land management refers to i. preparation of land records specifying the characteristics of land holdings (e.g. high land, low land, paddy land, household land etc.), ownership and use of land; ii. registration of transfer of ownership by selling, donating by any other legal forms of transfer; iii. mutation, i.e. establishing records of rights and maintenance of records of rights. These three basic functions of land management in Bangladesh are performed by the Directorate of Land Records and Survey (DLRS), Department of Cooperatives and Registrar and Deputy Commissioner under different ministries. These three departments are not mutually accountable, rather, they work independently.

Land Management includes preparation of ROR, maintenance of ROR,

implementation of land reform programs, assessment and collection of land development taxes, settlement of agricultural and non-agricultural khas lands and char land, maintaining the ceiling of land, recovery of excess land, management of public easement on land and sairat mahal, implementation of National Land Use Policy and other day to day functions of land management authorities.

Land management means the existing day to day and routine state interventions and regulations in the existing land system of a country/state/province. In other words, good land management tries to improve the existing land related practices and processes within the overall relation existing between the population, the land, and the state' (Siddiqui: 1997: 2).

International Journal of Land Management (1996) has defined Land Management as the 'means by which the resources of the earth with particular reference to land and all that is contained upon and below, is managed. The management includes the collection of data about land, the processing, analysis and presentation, followed by the decision to its use as dictated by imposed rules and regulations related to its ownership, valuation, rights, registration and its impact on the environment'.(Siddiqui: 1997: 3).

Modern land management is not limited to these three activities rather it comprises use of land, development of land, protection of land texture, maintain characteristics of land holdings to sustain environmental, ecological balance, social and cultural heritage and sustainable economic development. Traditional manual and revenue-oriented land management cannot address all those issues. Thus, use of IT and modern technology in each and every step of land management is imperative.

3.3 Land Record Management

Land record management means preparation of ROR with mouza map, updating ROR through mutation and maintenance of ROR.

3.4 Digitization of Land Management

Digitization is the process of converting information into a digital format. In this process text and images can be digitized similarly: a scanner captures an image and converts it to an image file. In the process of digitization continuously variable signal is changed, without altering its essential content, into a digital signal. In case of digitization of land management we mean all the present land records including ROR and

mouza maps will be stored into computer without altering any data, further preparation of ROR and mouza maps will be done with the use of modern technology like Document Management and Retrieval System and Geographical Information System. After getting ROR and mouza maps will be supplied to other offices related to land management through online.

A data base having a interdepartmental compatibility standard will be created and will be stored in different offices related to land management. Data base will be in a form where everybody will be able to share the information but not to make any change in the data except the authorized personnel involved in the process of land management. The process of registering a land and updating ROR either as a consequence of sale or any other form of transfer will be completed with the use of modern technology. After registering a piece of land data will be sent to AC (Land) through online and it will be automatically updated by the AC (Land) as a routine work. After getting the work done a copy will be stored in a soft form and another copy will be stored in the form of hardcopy.

The database of land records will be connected to the databases of different offices relating to land management and web addresses will be created for each department and it will also be connected to the internet, where the people will be able to search, locate, view and download government reports, studies, computer software, data files and databases.

4.0 Problems of Land Management in Bangladesh

Land management in Bangladesh bears a colonial heritage which is very complex with archaic terms and conditions and there is a general lack of land holder's confidence in all sectors of land management. The major areas of land management are preparation of ROR and mouza maps, updating ROR, identification of khas lands, khas water bodies, khas ponds, vested property, abandoned property, unused land under different government offices, monitoring the land ceiling as prescribed by differential presidential orders. Among them ROR and mouza maps are prepared and published by the Directorate of Land Records and Survey (DLRS), updated by AC (Land) as a consequence of sale or any other forms of transfer which is registered by the office of the Sub-Registrar. So the functions mentioned above broadly categorized as record keeping, settlement and registration of land which is done by legally constituted three separate departments under three different ministries.

Among them, Directorate of Land Records and Survey (DLRS) under the ministry of land prepares and process land record; record keeping and updating records is dealt with by the Deputy Commissioner, where as registration is done by the Sub-Registrar which is supervised by the office of the District Registrar. Those supervising authorities are controlled by the Ministry of Land and the Ministry of Law, Justice and Parliamentary Affairs, Ministry of Public Administration and the Cabinet Division. Activities of preparing records, maintaining records, updating records, registering land by different authorities are the causes of lack of effective coordination at all stages of record keeping and registration which is the key problem for land management.

Secondly, ownership rights are being prepared with the appointment of contract basis seasonal workers. There are shortages of properly trained, experienced and educated personnel like Chainman, Surveyer Supervisor etc. In addition, there is a clear lack of transparency in the process of preparing records. As they are not the permanent staff, it is difficult to ensure their accountability. The records are maintained by two different offices. At the lowest tier, the function of record keeping is the responsibility of union land office, while registration is done by the Sub-Registrars, and a different office handles the issues of settlement. As land records are prepared, maintained and updated by different offices, it becomes difficult to ensure in time disposal of disputes. Multiplicity of documents regarding land records is a common phenomenon leading to further complexity. As a result, the absence of an updated, systematic and universally accepted source of information on land resource availability and land rights lie at the root of much of the problems associated with land and its reform programs.

Thirdly, the process of land management is time consuming and complex. This is probably due to the absence of or minimum use of modern technology and traditional attitude of the personnel involved in the process of land management. Due to the use of traditional method there is no updated land database. In the present system, there is no appropriate process to identify an inheritor of land. Because birth and death registers were not maintained for identification of inheritance. Officials are to depend on local government bodies where registers of birth and death were also not maintained.

Fourthly, deed writing process is too old continuing since the Mughal era. Land registration is totally done manually. Lack of sufficient registers is

also a common phenomenon in land registration offices. Due to lack of use of modern technology there is no land database regarding the land registration. Searching of registered document is also complex. It is time consuming as well as confusing due to lack of database. Lack of supervision in land registration offices is also evident. Due to absence of Balam Bahi (Register) it takes time to get the copy of register land.

Fifthly, disposal of mutation cases is very complex. Mutation takes more time and money than fixed by the government. It is one of the main areas of public sufferings and harassment by the personnel involved in processing of mutation cases. Process server assistant, land officer, surveyor, Kanongo, AC Land are involved in the disposal of mutation cases. If data base is maintained and updated regularly, processing time and procedure could be minimized. Issuing notices to the owner, acknowledging the receipt of notices, hearing of parties can be done at one stop.

Sixthly, fraud and tricks in all the sectors related to land management have gone out of control in Bangladesh. Which, it seems, as the main reason behind slow, poor quality and faulty land records, in case of preparation and its maintenance as well. Due to absence of transparency, all kinds of irregularities are common. People in the administration who are responsible for creating and maintaining land records often prepare incorrect records intentionally and land owners are forced to pay and suffer for that. And the situation paves the way for both? the management officials get the chance to be corrupt and the land sharks, on the other hand, to get ownership transferred and recorded illegally in their names leaving the real owners running pillar to post to get justice. Aparna Ray, in her research work, 'Digitizing Land Records to Combat Corruption in Bangladesh' finds that in 2006 alone, bribe worth about 83 billion Bangladeshi Taka were paid for land related services such as registration and altering records (Ray:2010).

Finally, the current land management system is pretty much archaic. At present there is no database where a person searching the database can get all the information pertaining to the land at a glance: history of ownership, registration, mutation, transfer, disputes, land status, legal disputes cases, land map, land tax information, land related wills and such other legal documents. No data-base on khas land, poor families/households, is maintained. Lack of data-base facilitates distorted discretionary decisions in distribution and use of khas land. Due to lack

of authorized data-base, external influence is rampant, and powerful elite land grabbers occupies alluvial land, char land, marshy land, and the land management authority can hardly take preventive measures against those irregularities.

The problems of land management in Bangladesh, as discussed above can be summarized as follows:

- process is complicated and time-consuming;
- personal discretion affects transparency and accountability;
- inadequate access to land management process;
- influence of external forces;
- scope of deflation in sale price for tax evasion;
- single data-base on land is absent; and
- the total system hinders development process.

5.0 Experiences of other countries

Effective land information is of particular importance to developing countries. They are the ones who are in the dire need of Land Information System to prevent wastage of their scarce resources. The cost of introducing new system and technology is high and the availability of skilled man-power is almost non-existent. Countries like Canada, UK, New Zealand, India and Malaysia are the examples of using modern technology in for information regarding land and land management. Among them India and Malaysia presents an interesting example of developing countries. In India a project named Bhoomi is notable in case of land management which working excellently to ensure service to its citizen regarding land management.

Bhoomi (meaning land) is the project of on-line delivery and management of land records in Karnataka. It provides transparency in land records management with better citizen services and takes discretion away from civil servants at service delivery levels.

The Revenue Department in Karnataka, with the technical assistance from National Informatics Centre (NIC), Bangalore, has built and operationalised the BHOOMI system throughout the state. The BHOOMI has computerized 20 million records of land ownership of 6.7 million farmers in the state.

BHOOMI has reduced the discretion of public officials by introducing provisions for recording a mutation request online. Farmers can now access the database and can follow up the process. In the BHOOMI project, a printed copy of the RTC can be obtained online by providing the name of the owner or plot number at computerized land record kiosks in 177 taluk offices, for a fee of Rs.15. A second computer screen faces the clients to enable them to see the transaction being performed. A land owner can check the status of a mutation application on Touch Screen Kiosks. If the revenue inspector does not complete the mutation within 45 days, a farmer can approach a senior officer with their grievance (available on: <http://www.bhoomi.karnataka.gov.in>).

Malaysia develops the process of introducing new and innovative land information. As mentioned in GDI for Land Management that Malaysian land management includes the development of the National Geospatial Data Centre (NGDC) and State Geospatial Data Centre (SGDC) as well as standardization of names and codes of land administrative boundaries, known as Unique Parcel Identifier (UPI). Along the similar focus to establish standardized data to enable consistency in the usage, a project was carried out to match the cadastral data in Sistem Pengurusan Tanah Berkomputer (SPTB) and cadastral data in Pengkalan Data Ukur Kadaster (PDUK) (<http://www.mygeoportal.gov.my/node/365>).

This project for the District of Pekan covered 33,738 lots in the SPTB. In PDUK, the project covered 34,848 cadastral lots that had been surveyed as of November 2007. In the process of land administration, the Land Office registers a lot in SPTB as temporary title and after the lot has been surveyed in detail by a land surveyor, the lot will be assigned the final title. The final titles are registered in PDUK. Due to some discrepancies, there are lots with temporary titles that have been surveyed and registered to have final titles in PDUK but are not updated in SPTB. The works to match the lots in the project identified 3 layers, namely, the lots that have the final titles, the lots that have temporary titles, and other lots that fall in neither category. Apart from these 3 layers, the works also created two additional layers; specifically, the lots with final titles as well as those with temporary titles that could not be matched. Since the status of all of the lot ownership in SPTB and the status of cadastral lot in PDUK has been ascertained, further steps to solve the outstanding unmatched lots can be further identified (available on:

<http://www.mygeoportal.gov.my/node/365>).

6.0 Effective Land Management

Land management is very crucial for the development of a country. Major activities relating to the development of a country such as poverty alleviation, agriculture and food security, adequate shelter and housing, natural resource management, equitable and secure access to land, etc. all are closely linked to the factors of land and how the land is managed. Without sound management of land it is very difficult to meet the goals of development. For an effective land management with other procedural and administrative changes following steps are desired:

Firstly, in order to ensure well managed, effective, efficient and quick disposal of mutation, registration, survey and land records - all related offices required to be brought under one umbrella. At Upazila level, for effective coordination among the Office of the Sub-Registrar, Office of the AC (Land) and Office of the ASO single management unit is needed. If these offices are brought under one umbrella with the supervision of one Officer, it will facilitate better services to people. Particularly in updating ROR, after the registration of a piece of land one copy of registered deed will be sent to Upazila Land Office and after receiving the copy of registered deed AC (Land) will start the process of mutation. It would be worthwhile to mention that three copies of original deed will be signed at a time by the Sub-Registrar. One copy will be sent to Upazila Land Office, one copy will be given to purchaser of the land and the rest copy will be preserved at the office of the Sub-Registrar as an official document. After the completion of mutation the updated information of the land will be sent to the Office of the ASO. The communication between AC (Land), ASO and Sub-Registrar will be reciprocal. As a routine work it is not necessary that the process of mutation would be initiated by AC (Land). AC (Land) should be meant for supervising authority of the three departments related to preparation and maintenance of ROR as well as land management rather than service provider. At the time of Survey operation AC (Land) will coordinate the activities of record preparation. Collector will be informed about the overall activities of land in an Upazila by the AC (Land). At present there is a post of AC (Land) at every Upazila but in the proposed system AC (Land) will work as AC (Land) Circle. A Circle will be comprised of two or three Upazila on the basis of its area and economic importance. As a result, it will be possible for the Government to provide a fulltime officer to ensure service to the people related to land litigation. As a supervising authority AC (Land) Circle should be given authority to hear about the primary

land litigation which is civil in nature. He will be solely responsible to ensure service to people with the general supervision of the Deputy Commissioner who will be assisted by ADC (Revenue). At the same time AC (Land) Circle will be held accountable to ZSO. District Registrar will also be held accountable to Deputy Commissioner. District Registrar and AC (Land) Circle will be meant for supervising authority and they will be working in coordination with each other. It will eventually lead to introduction of quick and effective updating of ROR to ensure citizen-centric service regarding land management. It is the need of the time to ensure quick and effective service to people specially for a democratically elected government. For this only strong political commitment is needed.

Secondly, the use of modern technology for preparation of ROR and mouza maps, updating ROR as well as registration of land due to sale or any other means of transfer. For survey operation GIS and aerial mapping can be used. After survey operation data can be stored in the digital format and can be linked with digital land database for the use of different offices involved in land management. For effective survey operation it is also very important to engage properly trained, skilled and experienced manpower who are capable to use modern technology in all the processes of land management namely in survey and mapping works, record keeping, maintaining record and registration of land.

Thirdly, establishment of a server station at Upazila level is a must which will update and maintain the land database immediate after any transaction. Land database will be created through LAN for the official use of land related departments. When any transaction will be done by any of the departments related to land management it will be updated by that department which will open the door to use the updated data to reduce multiplicity of documents.

Fourthly, with updated record when any land will be registered either as a consequence of sale or any other transfer it will be updated by the Sub-Registrar and immediate after registration of any land it will be automatically updated by AC (Land). With this process a land database will be updated regularly which will help to get the data by the land users or the beneficiaries. The database may be connected with the district web portal for ensuring information to the people.

Finally, simplification of archaic terms for the easy understanding of the stakeholders with different level of education is essential. At the same time for ensuring clientele services as well as to minimize massive

corruption which is prevailing in land management stick and carrot policy can be the best option. For ensuring clientele services like completion of mutation cases, providing certified copies of any documents related to land management or land registration and management of different sort of government land there should have a system of one stop service which is only possible with the formation of land database. Land database can only be created with the process of digitization. So, there is no alternative of digitization for proper management of land. For these different types of measures like short term, mid term and long term measures should be taken immediately after a need based analysis which may be conducted by a team of land experts. In this process land database which will be created may be the end result of digitization to ensure transparency, accountability on the way to reduce corruption. The following measures may be considered to modernize our land management:

- an integrated land management system may be introduced; a land management authority may be established and coordination unit under the authority at every administrative and local government unit (at Division, District, Upazila and Union) may be established. This coordination unit shall be responsible for maintaining integrated data base and coordination among all departments and agencies with regard to land management information system.
- a separate and independent body may be formed to settle disputes relating to land ownership, transfer, registration;
- all kinds of records relating to land to be digitized;
- readymade data-base and installation of server, in every local government unit to be ensured;
- private partners or contracting out method may be applied as digitization of all records involves huge cost which would be difficult to finance from public sources; and
- while applying the process, involvement of the land owners may also be considered as cost-sharers;

7.0 Conclusion

Digitization all over the world is treated as a means of expanded government service with simplified procedures of dealing with government to make the government efficient and transparent and accountable for all its decisions and actions. Modernization of land management through digitization of all processes involved in ROR and Mouza Maps, transferring and registration of land ownership, updating ROR through mutation will reduce public sufferings, ensure transparency of decisions and facilitate the enforcement of accountability of all officials involved in the delivery of services.

Digitization will not only accelerate the service delivery in an efficient manner it will also pave the way for a better land management as well as implementation of land use policy. With proper implementation of land use policy, proper urban planning, optimum use of land for optimum production and other purposes leading to boost up countries economy as well as ensure food security of the people will be ensured. For all these, digitization of land management can be the best step. For digitization proper use of resources for creating skilled manpower is necessary. At the same time positive attitude to use ICT is also essential.

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