

Land Administration for Economic Development - Experiences from Institutional Development Projects

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Key words: Cadastre; Land management, Land administration, Institutional development

SUMMARY

The importance of institutional development for economic development and poverty alleviation has been stressed by several important researchers in economic development during many years. This paper makes an attempt to draw some conclusions about how land administration institutions can be developed. It is based on experiences from a number of institutional development projects where Swedesurvey, the overseas agency of the Swedish Land Administration Authority, Lantmäteriet has been involved.

The paper summarise the development in Africa to maintain formal land administration systems and to integrate traditional land administration system in the modern society. It also comments on the huge privatisation of land and real property, which has taken place in former Soviet Union and other communist countries.

The main conclusion is that land privatisation and land titling in itself does not create a sustainable development. Privatisation of customary land in Africa has often created more problems than it has solved. The privatisation in many former communist countries has created a structure in agriculture, which support subsistence farming but is a hindrance for economic development. Privatisation and land titling should occur in areas where there are demands for change, caused e.g. by urban development, by migration or by investments in agricultural development. Cadastral systems should be established to support a sustainable development and the focus should be on the decision-making process of land allocation and other changes of land use and the protection of established customary rights, rights of women and ethnic minorities. Instead of concentrating on the number of titles created, the focus should be on the quality of the decision-making processes in order to secure transparency, equal opportunities and fair valuation when decisions on land allocation or change of land use are made.

Another important issue is the organisational reforms in order to make best possible use of modern technology for collecting, maintaining, archiving and dissemination of land information. A precondition for economic development is that the land administration organisation can deliver efficient services to the general public at appropriate costs in comparison with the value of the land and the income level of the land users.

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1 INTRODUCTION

1.1 Institutional Development

In the search for explanations what makes the difference between the developed countries and developing countries the focus for the last decade has been on the importance of institutions. One important contribution in this field was made by Douglass North (1990). He claimed that countries with efficient institutions have an advantage in the performance of the economy over countries with less efficient institutions. The main explanation for the fast economic development in Europe and North America is that the institutions in these countries at one point in time became more efficient than in other countries. Hernando de Soto (2000) investigated the importance of the formal land administration for economic development and stated that the main difference between developed and developing countries is that the land administration system in developed countries in an efficient way can transform capital in real property into active capital, which will contribute considerably to investment and development. Another contribution was made by Andro Linklater (2002) who describes the importance of the cadastral surveying and mapping for making land in North America available for the land market and for immigrants from Europe and thus available for investments and development.

Swedesurvey is the overseas agency of the national land administration organisation (Lantmäteriet) in Sweden. Swedesurvey has worked with institutional development projects in the field of land administration since late 1970: ies, primarily in Africa and South East Asia but the last 15 years also in Eastern Europe, Central Asia and Latin America. In this paper some observations will be made, based on the experiences of these institutional development projects. The paper is not claiming to be a full evaluation of the success or failure of all these activities or to answer the question if these projects have contributed to economic development. Its more limited purpose is to draw some conclusions about what is important for land administration projects to succeed.

1.2 What is Institutional Development and Land Administration?

When discussing about institutional development it is important to make clear what is meant by an institution. The more general understanding of an institution is that it is equal to an organisation. However, Douglass North makes the difference between the institutions, as the rules of the game, and the actors on the market, which among others, are the organisations. An efficient institution is more than an efficient organisation and includes all kind of rules, traditions, culture and formal legislation that forms the framework for the behaviour of the actors on the market. The market as such is not only the land market, where properties are

transferred, but it is the whole sphere of social activities connected to use and rights to property. This includes actions in connection with heritage, marriage, relations between leaders, local and central administration, taxation, relation to the natural and built-up environment etc. This broader perspective on the meaning of institutions is used in this paper. The paper will discuss the importance of the land administration as an institution. It is therefore necessary to make clear what is meant by land administration. In accordance with the internationally adopted definitions, land administration is considered the as process of administration of use, rights and values of land in a society. All societies, whether they are traditional or formal, have systems for administration of these aspects on land. Land in this sense is equal to real property and does not need to be exactly land; it can be for instance a tree, a surface covered with water, or a space defined inside a building or underground. Information about objects for land administration, parcels or others, is provided by the cadastre.

2 DEVELOPMENT IN AFRICA

2.1 Land administration in Africa

The traditional development of land administration systems was in many countries in Africa influenced by the colonisation. The colonisation included among others that access to land for the newcomers was negotiated with the traditional leaders and large tracts of land set aside for colonisation from mainly Europe. The land administration systems set up for administration of these areas were very much influenced from the systems used by the colonial powers in Europe. There is a clear difference of land administration systems in countries of British origin, compared to countries of French, Spanish or Portuguese origin. The land administration systems set up in British colonies were however to large extent influenced by the Torrens land administration system developed primarily for the colonisation of Australia.

In most sub-Saharan countries the land under a formal land registration system originates from the land set aside for colonisation. This land amounts usually to around 2-10% of the area in the country. Much of this land was nationalised in connection with the liberation and turned into state farms or co-operatives, following influences from communist countries like the Soviet Union and China. This lasted however not very long and the land has then been subdivided and allocated through settlement schemes to individuals or organisations, usually but not always within the formal land registration system.

Traditional land tenure has prevailed in the remaining areas of the country, where most of the population lives. Also parts of areas, on which the growing cities have been developed, are under customary tenure. Forms for governing customary land have not been static. In several countries like Botswana and Tanzania, the power of the Chiefs regarding land issues have diminished in favour of local councils, sometimes appointed by village assemblies with democratic origin. The forms for decision-making regarding land under customary tenure have developed, influenced by the general political and administrative development in the country.

The population growth in African countries is high but the population density in general low, which means that there still are possibilities for considerable investments and development of rural land use in many African countries. Many believe that investments in rural land use are a precondition for increased economic development. The issue of the land administration is one key question in this context.

One main question for land administration in African countries is if the prevailing customary land administration systems need to be replaced with land administration systems of European type. Another question is if the land tenure regime needs to be changed from customary tenure (which are of many different forms) to tenure regimes built on private ownership to land in the international (UN declarations) understanding of ownership rights. Few African countries have actually tried to expand the formal registration system to areas under customary tenure with the exemption of Kenya and a few others. In fact, most sub-Saharan countries have faced tremendous difficulties to maintain the formal registration system in areas where it is established.

2.2 Customary and Formal Land Tenure Systems

One topic for discussion during many years is if there is a need to replace customary tenure regimes with more individualised tenure. This discussion is usually starting from the assumption that indigenous tenure systems cannot cope with the demands of modern development in an efficient way, either to support economic development, land markets or to protect environment from detrimental land use.

It is sometimes argued that customary tenure does not provide *security* enough for investments in land development, new technology etc. One conception is that customary tenure means communal control of land and the common decision-making should obstruct investment decisions. However, in customary tenure systems land use rights are allocated based on the traditional rules and once acquired, the rights are exercised individually within the family structure and strongly protected. As such they are not disincentive for improvements in general. The security can be disturbed by a number of disturbances generated by environmental disasters, intervention through conflicts or war, refugees, land grabbing, or formal land administration and donor projects. Experiences also show that conversion from customary tenure regimes to formal systems more often increase tenure insecurity for the rural population than the opposite.

Another argument is that customary tenure prevents *access to formal credits*, since credit institutes are no willing to provide credits without some kind of security in the land, a mortgage. However formal credit is anyway usually not accessible for small-scale farmers in customary areas, depending on a number of reasons, such as lack of credit as such and difficulties to access credit institutes. Small scale farmers are mainly depending on short term credits with security in the crop. Even when formal systems have been established, like in Kenya, the access to formal credit have not increased, partly also depending on the very high transaction costs in the mortgage system and the difficulties to arrange a foreclosure.

Land markets in rural Africa are usually small and undeveloped and this will in principle hinder the allocation of land resources for best possible use through the market mechanism. The customary tenure systems are in principle hostile to open transaction of land use rights on a market. Also other factors limit the development of an efficient land market, mainly the access to alternative living conditions that a presumptive seller of land can achieve at some other place or occupation. In areas where there are more demand on land for other purposes, land transactions will take place also under customary tenure. In other words, land markets will develop more or less independent of the tenure system, when the economic and social conditions for this are at hand. The development of land markets can not be introduced by tenure reforms. However it is important to improve tenure and land registration in areas where land market develops in order to promote an orderly market development and support sustainable growth.

In customary tenure systems, *women's rights* are in general inferior to the right of men. That means that the woman's right to land is exercised through the husband's right to land. Women usually do not inherit land rights. Unmarried women's access to land is depending to the possibility to use land from a sister, who is married or a father or brother. The general development towards commercialisation and individualisation of farming, will erode those inferior rights to the disadvantage of the woman. Land tenure reforms can aim at strengthening women's rights but in reality this can cause even worse problems if the local community does not accept the formal rights. However, also in this sense, customary tenure systems are not static and can change through information, awareness campaign and not least through support from an informed cadre of land administration officials. The FIG guidelines on women's access to land are dealing with these issues. There are also customary tenure systems in Africa, where the control of land is handled through women in a matriarchy. Forest and rangeland is often under common property management in customary systems. The well-known argument of the tragedy of the commons, meaning that common property control will more or less automatically under pressure of growth, lead to over-exploitation of the natural resources, has been used among other as an argument for an individualised tenure regime. Another solution has been state management, which often has been worse, since land under state management even more often is considered as a free resource. There are also many examples of common property management that are successful and have succeeded in adapting to changes in the environment and pressures of different kinds. Privatisation of common lands can lead to better management practices and better possibilities for economic development of the land. This will however most often also exclude some of the previous users from the land use and make them depending on alternative ways of surviving.

2.3 Recent Developments in Africa

Land administration reforms are on the agenda in several countries in Africa. There are some similarities between the developments. It has usually started with the development of a Land Policy, which after discussions have been adopted. The Land Policy usually addresses questions of the existing land administration and problems related to land issues. It formulates policies to guide the development of legislation. These policies are aimed at supporting social and economic development and equitable access to land. Sometimes

women's access to land is given priority. The policies deal with the importance of sustainable land use and improvements of land capability and how this can be facilitated by extension activities and the establishment of land funds etc. The importance of land administration based on access to appropriate land information is usually highlighted. An action plan is usually also included.

2.3.1 Land Legislation and Decentralisation

Based on land policies new land legislation has been elaborated and adopted in several countries, among them Ghana, Mozambique, South Africa, Tanzania, Uganda, and Zambia. One important tendency in this new legislation is that they recognise customary tenure as it is, without trying to change land tenure regimes. Customary land tenure is through the law given a formal protection, which sometimes goes beyond what is given to formal tenure. Customary tenure can for instance be valid in perpetuity, while formal tenure usually is limited in time. However, in one important aspect, customary rules are not recognised and this regards the rights of women to property. Most new legislation states that any customary law or tradition that is restricting women's right to property in accordance with the constitution is void.

A land user can use his land under customary land tenure. He does not need to register the land for any specific purpose. However, if needs occur for some reason, for instance to sell the land, or to mortgage it, the land user can ask to have the land registered. This registration will be made in different ways and the demands on how such registration shall be handled and documented vary between the countries.

Another tendency is that the legislation promotes decentralisation of decision-making in land administration. This is to make land administration more accessible for land users, make it more efficient and complete and to counteract misuse of power and corruption.

Decentralisation is handled in different ways. In Tanzania, for village land, the power of decision-making regarding land issues is delegated to the lowest level, the village. At the same time, a governmental administrative reform have strengthened the responsibility of the districts and created demands on access to professionals at district level.

Allocation of village land in Tanzania will be decided by the village assembly. This to avoid that village council or members of the council will allocate land to others without the knowledge of the villagers. The village is supposed to establish a village land registry for land registration. There are no demands on surveying and mapping of parcels or boundaries, only that the neighbours agree on the boundary through walking. There are also no demands on the use of professionals for registering land use rights, for surveying and mapping, or for the elaboration of the land use plan.

In Uganda, the decentralisation has been handled slightly different. The decentralisation reform and the land administration reform have created considerable demand on recruitment and training of officers at local level like district land board members, clerks of recorders, land committees, land tribunals and local councils and courts in about 60 districts. There is a lack of resources to meet this demand.

In Zambia, the decentralisation in customary areas has meant that land allocation in these areas have been made dependant of the approval of the chief. It has also been stressed that the chief cannot make this decision by himself, but must make it together with his council.

The new land legislation in Mozambique also recognises customary rights as they are. Land allocations can be made by the cadastral organisation, the provincial offices of Dinageca after a process that safeguards that all existing rights have been identified and protected. The cadastral authority is responsible for the process and the protection of exiting rights. In order to fulfil these demands, the cadastral authority has to organise a community consultation process. If the jurisdiction of the community is unclear, a community delimitation process can be initiated. All existing possessors of customary rights have the right to deny the allocation of a parcel if this allocation will interfere with his existing rights.

In Botswana exists since long Land Boards, who are responsible for land administration of customary land. The government has started a process to revise the land policy, which might introduce changes in the administration of customary land.

2.3.2 Land Redistribution

Land redistribution is mainly an issue in South Africa, Namibia and Zimbabwe, where the land ownership is very uneven distributed between different ethnic groups Land redistribution is a difficult task involving several political, economical and organisational issues. The lack of competent staff and lack of necessary land information as well as appropriate methods for land distribution, access to support services and for land valuation are some of the obstacles for the process.

2.3.3 Land Valuation and Taxation

Land under customary tenure is usually not taxed in African countries. Only land in the formal registration system is in some way under taxation. Since several countries consider the land as belonging to the nation or the people, the tax can also be regarded as a leasehold fee or a ground rent, paid by the leaseholder to the landowner. Connected to this is the concept that land itself has no value. Transactions of land itself is thus not possible, but the land use right can be transferred and the price paid will only reflect the value of the improvements made on the land, for instance buildings, fences, irrigation and drainage systems, etc.

The concept that land has no value means in principle that market mechanisms will not be allowed to influence how land is used. This has perhaps a more theoretical influence, mainly on land use planning of urban areas, where the location of the land is reflected in its value and where the efficient use of well-located land is important. The influence of this concept is also gradually decreasing with the general development towards a market economy.

Whether the land fee system is called land taxation or ground rent, it is anyway a considerable source of income for the government. Traditionally, these fees have been very low, and become even lower under the influence of inflation. The low capacity of the governments for administration has also meant that few landowners have paid the fees. Land

administration reform can here assist by first of all providing information, which will make it possible to bill those who are obliged to pay. Secondly by better information on the land use, it is possible to differentiate the fee in such a way, that those who can afford can pay a higher fee than people with less capacity. In such a way the total fees collected can reach considerable amounts for the society. This has been done with success in for instance Zambia. In Mozambique and Tanzania, the responsibility to collect land taxes has been transferred from the Ministry of Finance to the land administration branch. This led to a considerable increase in the collection of the fees and taxes and the land administration branch has also been allowed to keep some of the collected funds for its expenses. In Zambia, part of the increased ground fee has been used to build up a land fund, which is used for land development projects in urban and rural areas.

2.3.4 Urban Land

The concept that land belongs to the people or the nation and has no value in itself is important for urban areas. Urban areas are growing fast and are demanding more well-situated land. The land use must be organised through land use planning in order to safeguard a suitable urban environment. The capital resources in African cities are distributed in a very uneven manner, giving very few access to capital. There is a considerable risk that an opening of an uncontrolled land market will create opportunities for the development of a private monopoly on land for further urban development and thus open for land speculation. For the same reason it is also important that the concept of the traditional leaders as custodian of customary rights and not as owners of traditional land is upheld. Traditional leaders in areas close to cities have in several cases been deeply involved in land speculations. Land speculations mean that values are transferred from many people with smaller resources to a few, who accumulate considerable wealth, on a commodity, which is considered to belong to the people.

Land in urban areas in African cities is mostly included in the formal land registration system. The formal land registration has in many cases not been upheld under the pressure of fast urbanisation and is deteriorating. The cities have often expanded into neighbouring areas under traditional land tenure. Considerable informal settlements have developed on these areas and on other areas in the cities. In most African cities, the informal populations amount to between 40-70% of the population.

Several upgrading projects supported by donors and NGO:s is being undertaken in informal settlements. The upgrading should also include a formal recognition of the right to use the land for settlement. However, there is a considerable resistance from the business interests in many urban areas to keep the present chaotic situation regarding land administration. This is perhaps one of the most urgent questions for continued research and development in order to create awareness of the needs for reforms.

2.3.5 Land administration and Technical Development

The technical development in the field of land administration is going very fast and is influencing the possibilities to establish land administration system considerably.

Land administration is depending of information about land and land use. This information will relate to textual data in terms of landowners, values, capacities etc. This information is not really useful without reference to its location, the geographic position. Land administration requires maps of different kinds.

Land administration authorities at local and regional levels in Africa today use mostly manual technology. Digital technology both in the form of GPS, digital maps and digital data bases and communication is gradually introduced at the central level.

Small-scale topographic maps today cover most countries in Africa. These maps are however not digital and are in general not up-to-date. On the other hand, the changes are relatively small and slow. Large scale topographic maps for urban areas and other settlements are in much less supply.

The technology for map productions has changed considerably. The evolution of GPS has made the otherwise needed densification of the national grids much more easy. Cheap handheld GPS receivers, which also are very easy to operate and understand, can be used for most cadastral surveys in rural areas. For more accurate surveys, differential GPS is available, either using satellite correction data, or from ground reference station, which also reduces costs and speed up the survey.

Photogrammetric maps and orthophotos can today be produced from aerial or satellite photos much faster and easier, using ordinary PC and software. This decreases the need for training of staff and other infrastructure and reduces costs for mapping.

The data capture of the geographical component of a land information system can thus be made much faster and cheaper today than before. The demands are however increasing on the management structure to make efficient use of especially digital data for more users in a spatial data infrastructure. This will call for more coordination, development of rules and standards and more open attitudes towards exchange of data.

Another question is the use of IT in general. Land administration systems today are manual and many African land registrars lack paper and other facilities to keep the registration up-to-date. Computers in the form of PCs are available at many places and can be used to support the mainly manual procedures but need even more access to stationary and maintenance than manual systems.

A totally computerised textual land registration system has been in function in Zambia for about fifteen years. This system includes computerised titling, which means that the title shown in the computer system is the legally valid title. Such systems need to be established on stable platforms with high requirements on the management and on the maintenance, safety and back-up routines. One difficulty for the maintenance of this system is that the computer manufacturer today not exists and that training in computer technology does not produce the competence needed to maintain the operation and application systems. This is a problem that can be expected to increase in future since land administration system are expected to work for ever independent of available information technology. It is important that the manager of such systems can establish and maintain an indoor capacity for

maintenance, independent of ongoing development of IT and the competence of consultants. Sustainable systems for archiving of information are needed, which are independent of today's technology. Internet technology opens possibilities to communicate and make access to land information much more easy. This will for long time mainly benefit a small fraction in society, but this fraction might be those who actually can benefit from improved access to information.

2.4 Human Resources Development

Land administration is being undertaken by a number of different professions, including land surveyors, lawyers, rural and urban planners and valuers. This reflects the historical development of land registration, where the activities carried out by lawyers and surveyors are clearly separated usually also in the organisation, for instance in a survey and a lands department. Local courts undertake sometimes land registration. Valuation and planning are usually located in other departments within the government. Some countries influenced from Southern Europe operate system where notaries are involved in the land administration.

Land surveyors are usually involved to undertake cadastral surveys of a parcel of land before it can be registered. Land surveyors have usually an academic or technical education in land surveying including a number of technical topics regarding surveying and mapping. There are also usually technical/diploma training in land surveying/cartography in order to provide technicians for surveying and mapping. Land surveyors are either governmental or private operating under a licence.

Land registration is mainly the responsibility of lawyers or other people with legal background, assisted by administrative staffs that have been trained within the organisation through on-the-job-training and in-service courses. They can be governmental officials or in private or semi-private practice as notaries or solicitors.

Land use planning can be of several types. Land use planning might be dealing with the best way of producing agricultural or forestry products on a farm. This type of land use planning is usually carried out by people with a background in agriculture or forestry. Another type of land use planning is connected with construction of houses, buildings, streets etc. Architects, civil engineers and land surveyors are usually engaged for this. A third type is the more strategic and comprehensive land use planning for most economic and sustainable use of land resources in the long-term. This planning is not very well developed in developing countries and appropriate training is mostly lacking. Diploma training is offered to technicians working with land use planning of different forms.

Management of state owned or controlled land, including the allocation of such land to individuals, sometimes including tax collection is normally handled through a land officer. This officer has usually diploma training from some institute providing training in some related topics. There is usually not a dedicated education for the profession of land officer.

Regarding valuation, there is a similar situation as for land officer. A dedicated education for land valuers is often lacking. Training in land valuation is mostly connected to some other training in rural or urban land or real property development or economics.

In some jurisdiction there is a special land adjudication officer, who takes part in the process of formal land registration of existing land use rights. This person usually has a background from land surveying or law and has specialised on land legislation matters.

With the modern IT technology, people with a background and training in IT are more and more demanded also by land administration organisations. Most important is perhaps the design and development of data bases, standards and communication technology.

The traditional professions within land administration are changing both depending on the demand for the services and due to the technical development. There seems to be a need training of land administrators, who know enough of land surveying and IT in order to make use of the new technology and also have enough training in legal issues and economics in order to lead legal procedures to allocate and register land and understand land taxation.

3 DEVELOPEMENT IN EASTERN EUROPE AND ASIA

In the year 1989 the Berlin wall was torn down, representing a milestone in the ongoing change process in Soviet Union and other countries with a communistic economic and political system. The change included a privatisation of property, which was fast in terms of business and other movable property. The privatisation of immovable property has been slower and different approaches have been applied depending on historic and political differences.

3.1 Privatisation

The privatization started early in Central Europe and the Baltic States. It took place in phases and one main aim was to restitute land to previous owners or their heirs. The first phase included to allocate the land with leasehold rights to the previous owners. It was followed by the establishment of new legislation for allocation of ownership rights and most land and other real property was allocated in this way. The land has been surveyed and registered and ownership has been allocated based on the survey and old documents, showing the rights before the nationalization of the land. Some State owned land has also been allocated to former workers at state or collective farms.

The privatization has been successful in the Baltic States. It has been popular among the population and it has been possible to relatively fast establish organisations for land administration and register the properties. A real property market has been established and real property is more and more used as collateral for credits. The countries have also a positive economic development.

In Hungary a different approach was chosen for the restitution. Instead of restitution in land, former owners and other persons like workers on the state or collective farms was given compensation for the loss of property in connection with the nationalization through voucher. These vouchers could then be sold or used to buy property at auctions organized by the government. The result of the reform is not very successful. The production and land prices have fallen, much agriculture land is in the hand of people not interested in agriculture and the parcels are small and fragmented.

In Russia, Byelorussia, Ukraine but also in the Kyrgyzstan and Uzbekistan the privatization of land has gone through the privatization of shares in the collective farms. This is a rather simple process through which the employees on state and collective farms have been owners to shares in the farm. The management system of the farm has been kept together and the machinery has been kept. Shares were not only given to former owners, but also to workers on the farm and to civil servants, working with social welfare in the village. Collective and state farms have also to some extent leased land to more individual private use.

Especially in Ukraine, but also starting in Russia, Kyrgyzstan and Moldova is a continued privatization by transferring the shares into parcels identified on a map and distributed the ownership to these small parcels to the individual owner. This reform creates a great number of individual parcels, which often are not possible to cultivate on an individual basis. This is due to a number of factors like to small parcels with too much boundary lines difficult to recognize in the field, lack of capital for investments, lack of appropriate machinery, lack of markets, lack of knowledge and understanding of the reform. Most private parcels allocated in this way in Ukraine have been incorporated again in the collective farm, however now privately owned by some of the former directors of the collective farm.

Also in Georgia, Armenia and Moldova, the privatisation has very much been directed towards the allocation of land for private use by individuals. The reform has been driven of a necessity to create possibilities for the people to survive, when the main export markets for agriculture production collapsed with Soviet Union. It has also been driven by a desire to create as equal opportunities as possible among the population to acquire land. The result is a much fragmented structure and lower production and prices.

3.2 China and Vietnam

In China and Vietnam, the privatisation started with allocation of land for individual use based on contracts between the individual user and the collective farm from beginning of 1980:ies. The contract system was soon replaced with a system based on leasehold rights from the State to the individual farmer. The length of the leasehold period was connected to the land use and lasted from a few years up to 20 or 50 years for forest land. This reform was very successful and created preconditions for a considerable increase in the agriculture production. From a situation with starvation, the agriculture sector started to produce more and more surplus, which also was possible to export on the world market.

However, during recent years more and more land conflicts have occurred. This is connected with the rapid urbanisation and increasing prices on land suitable for urban development. The private rights are not very strong and are easily abused by local administrators and others. The compensation for compulsory purchase is comparatively low and sometimes not reaching the actual land user. Both China and Vietnam are gradually increasing the protection of the leasehold rights for the farmers, by stronger legal protection, longer periods of leasehold and in Vietnam, development of a land registration system.

3.3 Land Administration Organization

In the former Soviet Union, land administration was mainly handled by a cadastral organisation with the main purpose to evaluate and classify the production capacity of the soil for different purposes. This information was used for production planning for the collective farms. Buildings were surveyed and recorded by another organisation. A third organisation was responsible for topographic mapping. In some countries, like Russia, another organisation was created in connection to the privatisation to register rights to real property. This split into several organisations with sometimes competing interests has been a major obstacle for development of a functional system for land administration and an integrated cadastral system. However, most countries have now realised this and the different organisations are more and more merged together with the aim to provide better services to the general public and make use of computer technology to make data available for the land users and for an increasing GIS market.

4 CONCLUSIONS

The development of cadastral systems in developing countries have in general too much focused on the question of providing cadastral information in a systematic way for large tracts of land and too little on a cadastral system as a set of procedures to handle land use rights, solve conflicts and competing interests and provide transparency and participation in decision-making regarding land use. Cadastral development should follow upon an expressed demand on the system from the users, i.e. the users should see clear benefits of the system, which will motivate the costs and the participation. Only then can investments in improved land administration be sustainable through proper maintenance. These demands are clearer in a sporadic system.

The privatisation of land has in many countries been necessary from political point of view. People are interested in security of tenure, but the interest to use the property as collateral for credits is much less. Property markets cannot be created by privatisation and titling of land. Property markets must emerge out of demands created by changing circumstances. For agriculture land, the access to markets for agricultural products is essential. The property market alone is not the solution for the problems with fragmentation. The structure created by the privatisation of agricultural land in many countries is not sustainable in the meaning that it will promote economic development. It can only sustain agriculture on subsistence level.

There will probably not be demands on comprehensive cadastral coverage of many developing countries with land information for foreseeable future. But there will be demand on such information systems for specific situations for instance for:

- Areas where there are demands on land for investments in economic development
- Areas where more functional land markets are developing
- Areas affected by migration, especially urban areas.

Cadastral procedures however can be applied everywhere in a jurisdiction, handle customary tenure as well as formal tenure and can contribute to the protection and development of many social and economic interests such as:

- Protect the interest of women, ethnic minorities and migrated people (sometimes in conflict with traditional society)
- Solve conflicting interest between investors and traditional land users and other conflicts regarding land use
- Promote fair allocation and access to land resources among the population (social justice), prevent land speculation and provide transparency and participation in decision-making
- For taxation of valuable land resources
- For better decisions-making regarding land use, increased sustainable production and protection of environmental values for all species.

Information systems must be designed in such a way that the costs for the establishment and maintenance of the system are affordable compared to the economic value of the existing land use. This can be achieved through a combination of modern technology and a flexible/non-traditional approach to the information content of the information system and the technical and legal demands on accuracy etc. Land information systems should equally be capable of handling both customary and formal tenure systems.

Cadastral procedures should be designed to allow for an efficient decision-making based on law and free from political influence. The process should be participatory and transparent. The cadastral officer should be responsible to investigate all aspects of cases and to protect all private and public interests on an equal basis in the process.

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BIOGRAPHICAL NOTES

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