ACCESS OF PUBLIC AND PRIVATE AGENCIES TO THE INFORMATION MANAGED BY LAND REGISTRATION SYSTEMS

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“A popular Government without popular information, or the means of acquiring it, is but a Prologue to a Farce or a Tragedy; or perhaps both.” James Madison, 1822

ABSTRACT

In the transition countries of Eastern and Southern Europe and the Former Soviet Union, the introduction of market-oriented economies has been accompanied by a considerable increase in the amount of land information being created. Albania, for example, has witnessed the rapid development of varied information about land since 1991. However, little attention has been devoted to the economic and legal issues associated with the implementation and maintenance of land information systems in the post-1991 period. In addition, legal and economic issues concerning access and allocation in public and private partnerships for the elaboration and dissemination of land information have not been adequately addressed. The design of appropriate policies for guaranteeing fair public access to government information and for harmonizing legal issues related to land information such as copyright and privacy is becoming an important concern for Albanian government agencies. The United States and the European Community, although quite different from each other in their approaches, have evolved strategies related to these issues. They are, however, still investigating the best options for taking advantage of the prospective benefits and reducing the potential negative impacts of easily and inexpensively disseminated land-related information and for finding appropriate balances when building partnerships between public and private sectors. Albania’s different legal, economic, political, historical, and cultural environment suggests that pure importation of such strategies (assuming it is feasible) may not be adequate. After discussing the unique aspects of the Albanian environment, this paper explores options for land information policies and legal actions that could be used in the Albanian context. In addition, appropriate timing and sequencing of these policies is considered important. Reasons for the current lack of cooperation between private and public institutions are presented and ways of benefiting from such cooperation are proposed. As one of the first discussions to address the legal and economic aspects of land information development in Albania, this paper calls for consensus-building activities, presents a conceptual proposal for information pricing and sharing, and suggests the creation of a National Geomatic Association. The paper also reports on the recommendations of a United Nations sponsored workshop held in Tirana, Albania in early 2000, on this topic.
1. INTRODUCTION

Eastern and Southern European and Former Soviet Union countries are presently in transition from a centrally planned economy to a market oriented economy. All of these countries are engaged to some degree in the privatization of the assets of the state, particularly land (including all improvements tied to the land). Privatization of land means the transfer of state owned and managed land into the effective control, if not outright ownership, of private individuals and privately owned enterprises. This privatization of land is one of the pre-conditions for developing an efficient, market oriented economy (World Bank, 1996).

The managers of land resources, both state and private, require information about the land they manage. Accompanying the transfer of control over the land from the state to private individuals and enterprises is the transfer of the need for land information from the state exclusively to a combination of the private sector and a re-structured set of state agencies with new responsibilities, including the following:

- Accurate and readily accessible information about property rights, in order to facilitate dynamic and secure property markets;
- Information about the effects of economic development on land and water resources, in order to develop effective land protection programs;
- Projections about future uses of the land, particularly from private sector investments in urban development, in order to minimize the social costs of such development and maximize the economic benefits;
- As the economic system evolves and grows, investments in physical infrastructures (roads, electrical and telecommunication networks, water and sewage systems) have to be carefully and rapidly planned and implemented in a context of competing private and public demands on the land.

Despite the growing demands for land information, the available information about land either comes in old forms and formats from previous state providers or has to be created for the thousands of new, private holders of the land. Land title registration services are in their initial stages of creation. Land use capability mapping is often decades old and even then the data sets use categories which do not correspond to the new private ownership or control over the land. Development planning and control capabilities have been de-emphasized during the period of privatization, and past concepts for land use planning and development do not recognize the rules of a market economy based on private interests in land.

Clearly new needs for land information are rapidly emerging. Old institutional arrangements for satisfying these needs are inadequate. The questions of access to what land information, for whom and at what cost, are becoming more urgent. These questions are closely linked with fiscal issues facing governments, the conceptions of the role of geographic information in economic development, and the role of geographic information in the creation and maintenance of democratic institutions.
The discussion presents examples which characterize land information institutions in transitional economies as being restrictive in the face of emerging new demands while simultaneously facing difficult financial challenges. To avoid the potentially large social and economic costs, which we view as likely consequences of simply building on the institutional arrangements from the past, we first present an economic argument for information pricing policies which stress regulation of pricing by government land information monopolies and the encouragement of competition for non-core land information products among public, public-private and private entities.

Recapitulating the differences between the U.S. open access and European restricted access traditions, we argue in favor of a variant of open access policy, which is balanced by the need to keep institutions financially viable through a minimum level of revenue generation. Public funding of raw data collection, coupled with intra-governmental data sharing and the encouragement of a fair market for secondary data products appears to be a course which can work, but only if actions are taken in the near future to encourage this development path.

Copyright and privacy concerns loom increasingly large as more original informational products are created and more personal data is collected, while becoming more easily reproduced and accessed through electronic means. We recommend that basic principles for preserving privacy should be incorporated into the geographic information policy that we are advocating. This argument is linked in practice to the proposal to carry-out consensus-building activities about land information access, carry out further research on data needs and the real costs of these data, and to create a National Geomatic Association as a coordinating body for work on legislation, standards, formats and pricing regulations for geographic information.

This paper reports on experiences in dealing with new land information systems following land privatization programs in Albania, especially in the context of building a new land registration system. We offer the following propositions:

1. For a more rapid transition toward dynamic and properly functioning land markets, new land tenure patterns created after land privatization must be followed by rapid changes in the roles of public organizations which produce and maintain information about land.

2. Under a market oriented economy and democratic governance, new land information management entities will have greater success, if they exhibit a strong customer orientation.

3. Protecting the economic interests of public service organizations should be associated with a thorough analysis of the new economic environment in Albania, where the private sector has become a significant consumer and producer of land information. Facing this reality is difficult but necessary for the benefit of both public and private institutions.
4. Data sharing and open access to information increases the efficiency of the database systems and the potential for agency survival in the context of market economy.

5. Economic and legal issues related to land information are better resolved using experiences from other countries and trying new solutions in a step-by-step approach than by responding to problems on an ad hoc basis as they arise.

6. Creation of a National Geomatic Association with participation of all actors in land information administration, including both public and private sectors, facilitates the process of investigating the problems related to land administration and finding appropriate solutions.

Although somewhat tangential to our main topic, we consider copyright and privacy to be essential considerations for all of the land information issues we discuss in this paper. Therefore, we have included as appendices of this paper a short discussion of these issues, providing information on implementations in different countries, and proposing steps to be pursued by transition countries.

2. ECONOMIC CONSIDERATIONS OF LAND INFORMATION

Economic considerations can help to provide a conceptual basis to guide policy formulation with respect to new land information provision in Albania. Land information tends to possess a number of characteristics, which make it a unique type of economic good. Principle among these characteristics is:

1) Land information can be characterized as both a public good and a private good depending on the circumstances of its use. Therefore, both public and private provision of land information have an economic rationale. Public policy decisions about which information to provide publicly and which to leave for private provision may have significant consequences for economic development and public administration.

2) Land information systems often display the characteristics of a natural monopoly, i.e. land information products often have falling average costs as the size of the information set increases (especially new land information products developed during transition). This characteristic may allow the holders of certain land information to refuse to provide information for socially desired uses in the absence of a land information policy in the public interest. It also means that there may be a tendency to under-invest in land information for remote or complex geographic areas, which have little basic land information infrastructure, because the cost of the investment will be relatively higher in these areas.

3) Land information has a high capacity to generate both beneficial and negative externalities. These special characteristics need to be taken into account in the design of appropriate access and/or pricing policy for land information, especially publicly generated land information. These externalities may be present whether land information is marketed or paid for through taxation, and are to a large extent a result of
the ease of reproduction. For example, high-resolution satellite imagery acquired for study of deforestation can be subsequently used for pasture improvement. Property registration data on property location and ownership might also be used for utility siting. A negative externality might be the social cost of land information being used by unscrupulous people to threaten or extort property owners based on knowledge of site location and value. Another example of a negative externality might be the distributional consequences of property registration data being used by a small number of buyers to concentrate ownership by exploiting differential access to information about site availability and tenure.

The ease of reproduction of electronic data and difficulties in establishing “market” prices for land information create conditions in which these types of externalities are likely to exist, especially in the early stages of new land information provision. Policies of data sharing, especially among public land information providers, may be able to significantly increase the beneficial externalities of land information, although data sharing policies also raise their own technical and organizational problems in terms of standards, formats and incentives to participation.

These economic considerations in land information finance are only one of a set of issues, which need to be taken into account in policies for land information provision and access in transitional countries. The role of land information in helping to support democratic political institutions may often be in conflict with the revenue needs of the institution providing the information. The rights of the providers of land information and the rights of those to whom the land information refers are also important questions, which have not been satisfactorily resolved in many transition economies, including Albania. The following sections explore these questions in a broader, comparative context, which incorporates legal, political, social and historical criteria.

3. OPEN ACCESS vs. RESTRICTED ACCESS

Traditions and legal norms, which define the rules of access to land information, differ across political entities, as illustrated by the differences between the U.S. with its tradition of relatively "open" access, and Europe, with traditions of more "restricted" access. Even when the rules of access provide for more users to have easy access, the question of user fees arises which influences whether users of land information are encouraged or discouraged from access by the cost of that access.

3.1 Western Approaches

Government agencies typically collect land information to accomplish their mandates in land administration and land management. At the same time, the general public tends to desire access to the government data, both as a way to hold the government accountable for its actions and decisions, and for private uses. Given that creating and maintaining such databases can potentially cause damage to individuals, and is a costly process, the issue of whether the government should allow legally open access to data at low cost, or legally restrict access and apply complete cost recovery revenue generation policies has become a widely debated issue whose resolution has incorporated numerous practices in different contexts.
3.2 The USA

Many groups in the United States have successfully advocated open access to publicly generated land information. Open access to public records is implicit in the First Amendment’s protection of speech, press freedom and “right to petition the government for a redress or grievances” (Matsunaga, 1994). In the U.S. tradition the government is held accountable, not only by the opposition groups, the press, and the media, but by citizens as well. Consequently, a tradition of relatively open access to land information has evolved in the U.S., enshrined in institutions such as open property tax appraisal records and open access to deeds registries by the public.

Continuing this tradition, the 1988 Freedom of Information Act makes federal government records accessible to the public. Except for information related to national security, confidential businesses, banking reports, and a few other categories, the public has the full right to access government data. However, while regulating the dissemination policies at the federal level, this act does not provide guidelines for state and local government information.

Recently, a number of local governments, using this gap in legislation, have concluded that publicly-held information should not be freely accessible and have moved increasingly toward market-oriented dissemination policies (Onsrud, 1994b). For example, the results of a national survey conducted by Onsrud and Lopez show that “over half of the respondent agencies (56%) are in some manner split between following a traditional open access approach versus a more restrictive government revenue generation approach” (Onsrud, 1996).

Given that local governments are currently building their own GIS, and that most of the requests for GIS data and products are local, there is an ongoing debate in the US to find the middle ground between open access and revenue generation. The distinction that Onsrud makes between GIS digital data files accumulated for government purposes, GIS products created by and for the government, on one side, and the value-added services for private needs and not for government purposes, on the other, provides one potential solution: charging only the cost of dissemination for the former, and any market rate for the latter (Onsrud, 1996).

The institutions for the registration of rights to land and real estate in the US are highly decentralized. There is no national cadaster, nor do States maintain them. Deeds Registries are the norm, operating and funded at the county level. Supporting map information is developed according to local priorities and locally determined techniques. Information contained in the Deeds Registry is typically open for view by any person who comes into the County Registry of Deeds. There is no fee charged for searching the archives of deeds and other documents pertaining to rights to land and real estate. There are fees charged for putting information into the archives. The fee charged in the Dane County, Wisconsin Registry of Deeds is US$10 for the first page of the deed, plus $2 for each additional page. A typical deed of sale is usually a page, while a mortgage could be 2-10 pages.

A parallel privately maintained land information system has been developed in most USA jurisdictions, called the title insurance industry. These companies derive their information from the public registries, but organize it typically on a parcel basis, rather than on the name of the owner as in the public registries. This information is highly protected, and access is only
granted to the company officials upon receiving applications for insuring the title of interested owners, and for the purpose of preparing those insurance policies. Users access these companies when they buy or otherwise acquire an interest in a piece of real estate. They buy from the insurance company the security that the seller of the right is the legal owner of that right and that there are no restrictions on the transactions. The cost of this insurance would be analogous to the cost of a copy of the title register or of the land book in most European countries. The cost of these policies varies across companies, but typically depends on the value of the properties. For example, for a title insurance company in Dane County, Wisconsin, a title insurance policy costs $350 for a $100,000 property. There is $1.00 per thousand of valuation over $100,000 which is added to the base fee of $350, and $2.00 per thousand is subtracted from the base fee of $350 for properties worth less than $100,000.

People can get direct electronic access to some Registries in the US, such as in Dane County, Wisconsin, which has reduced the costs of title insurance in Dane County in comparison with the cost in other jurisdictions without electronic access. At the same time this digital system does permit the general public to get information about land titles through on-line computer delivery of this information, as well as free use of on-line terminals in the Registry Office (Tulloch, 1998)

3.3 European Traditions

Different scenarios also exist in Europe. While there is diversity among different European countries, ranging from relatively liberal policies in The Netherlands to more restrictive, market-oriented policies in Germany and the United Kingdom, the general tendency in Europe is to facilitate the availability of public information about land, but then charge fees to the public for public access to government data, products, and services. In support of a revenue generation cost recovery policy, Rhind from Ordnance Survey (OS), England, argues that charging for government data is a way to measure the ‘real need’ for information, reduce taxes, encourage private businesses, limit the payment to data users instead of all taxpayers, and increase data quality. The present UK government makes no distinction between citizens, private entities, and government departments; each enters the market for land information competitively as a buyer or seller. Failure of the Civil Services to succeed in such competition generally leads to the service being contracted out to the private sector (Rhind, 1994).

Pertaining specifically to land registers and land cadasters in Europe, in a recent study of 37 member-states of the ECE (including four Canadian Provinces but no US States), 26 states allowed complete access to the land register (kartela) or land cadaster on payment of a fee. In the other jurisdictions, access was usually only permitted with the authority of the owner of the property or of the Registrar. There are well established and different traditions in countries. These differences were discussed at a recent workshop, “Seminar on Public Institutions and Private Sector Relationships in the Creation of Land Registration Systems”, United Nations Economic Commission for Europe, Committee on Human Settlements/Working Party on Land Administration, in Tirana, Albania, 30 March-1 April, 2000.

The “open” approach takes the view that information about land should be open to all. The transparency of land markets are more likely with open access to land registration and cadaster information. All participants, potential and actual, in land market transactions, are able to make
their decisions about land, possessed of all the facts. This “open access” view also reflects the principle that land in some sense fulfills social functions. While private land ownership is to be encouraged, it is the community as a whole, which is collectively the custodian of the land. Openness discourages fraud, facilitates land market transactions, and assures that the social responsibilities of owners are exercised under full public view.

The “restricted” approach is based on the idea that only the landowner and persons authorized by the owner should have access to the information relating to his or her registered property. This approach rests on the view that these are private matters resulting from a private contract and should be of no concern to anyone else. The State should respect this privacy with only rare statutory exceptions, for instance where matters of national security or law enforcement arise.

- The Land Registry for England and Wales, for example, was first established in 1862, but it was not until 1990 that its registers became wholly open to public inspection. Only after April 1, 2000, is the price paid by a buyer of a property shown on the land register and is open for public viewing (already a common practice in many countries). A physical copy of a register or title plan is about US$6.00, while a digital copy of a register is only US$3 and for a title plan is only US$4.80. Everyone pays the same fees, regardless of whether they are public agencies or private companies or individuals.

- In Moldova, the details of land market transactions are provided only to the parties to the transaction, or to a court or law enforcement authorities.

- In Latvia, by law only the owner of an immovable property and the persons who have any rights to the property can receive information from the immovable property files, the registers and the personal index. If other persons want to obtain information, they must get the permission of the Chief of the Land Book Department. No filed documents are allowed to leave the premises. However, public and municipal offices can get updated information on any immovable property or about any person’s properties in any part of the country. Lending agencies, realtors, property valuers, and notaries have been granted license for relatively easy access to the land book information. No clear consensus exists yet concerning the pricing of land registration information, although the predominant view is that the user fees should pay for the operations and development of the title information system.

- In Finland, everyone can come to the Cadastre and Land Register authorities and ask to see the contents of the physical registers. The cadastral maps and digital databases do not contain data about individuals. This data is open to all kinds of uses when the user fees are paid. The land register information is, however, more restricted. A license is required to get access to this information in the computerized database. The cost of such information is the cost of copying it, for most users. Nonetheless, agencies which produce land administration data can use data produced by other land administration agencies free of charge.

- In Norway, in principle there is open access to the information in the land registry. However, to search the database by name or by personal identification number is restricted by law to only professional users to protect the privacy of owners and holders
of other interests in land. A State-owned company both operates the land registry and also sells information contained in the registry. The price of information depends on how high is the demand for it, as estimated by the company. Mortgage information, for example, is sold for a higher price than other types of information. The buyers of this information re-package and re-sell it, typically at about 20% markup. All users, public and private, pay the same fees.

- In Spain, only people with a legitimate interest in properties (normally just lawyers, notaries and realtors) can obtain information about them or the rights held in them. Those who want information must apply for it to the head of the Registry of Deeds, specifying the purpose and the information requested. Application forms are filed to ensure that the applicants can be identified if any damage is done to anyone by the inappropriate use of information obtained from the Deeds Registry. The price of a single requested piece of information is about US$2.94, such as the name of the owner of a property. Complete information about a property (complete description, cadastre number, marital status and address of the owner, all data about contracts whereby the property was acquired, price and means of payment, etc.) costs US$23.53.

Obviously, between the extremes of complete openness and complete privacy, there are variants on privacy or openness. A land register might be open only to a specified group of enquirers, such as authorized public officials, notaries, law enforcement officials, or lawyers. Alternatively, only parts of the information contained in a land register may be open to all. In some jurisdictions, the price paid for a property might be regarded as private information whereas in others it is available.

The cost of getting information from the land registration information systems varies, with the private title insurance system of the USA being many times more expensive than the European systems for getting some guarantee that the self declared owner is the legally recognized owner. The USA title insurance system does vary the access charges according to the value of the property, with higher charges for the more highly valued properties, while the European systems charge a flat fee. It is also possible for the general public to get access to the legal ownership records in the U.S. without cost, by simply coming into the Registry Offices and examining the stored deeds.

We do not have systematic information on the costs of getting information into the land registration systems, except for the US case, where the cost depends on the complexity of the documents presented for recording, but usually around US$10-12 per deed. In many of the transition countries, there is a transaction tax charged proportionally to the value of the property, 2%, for example, which substitutes for a functioning property tax, and which can be substantial.

The general conclusion at the Tirana Workshop, was that in those countries where information is openly available, few if any difficulties or concerns arise as a consequence of openness. Information about ownership, other land rights, price and valuation are accepted as community information. But in those countries where, traditionally, land information has not been public there is, inevitably and understandably, a real caution about making the change to openness.

Even in the jurisdictions with more open access orientation, access to land registration system (registers and maps) information was typically restricted to land and property, but any enquiry
about the land owned by a particular person was not accepted as valid (except for Holland, where all such inquiries are acceptable). In most jurisdictions, the predominant view is that issues of personal privacy could arise if completely open access to information about citizens was permitted.

The cost of access to information in these information systems is generally quite low for the typical user who wants to get authoritative evidence as to who is the legal owner of a specific property, except in the USA if the user wants the evidence to be provided by a title insurance company.

4. TRANSITION COUNTRY CONTEXT AND EXPERIENCE: THE ALBANIAN CASE

In order to adapt these American and European experiences to the contexts of countries in transition, it is useful to examine the specific characteristics of the Albanian case that directly affect the land information policies to be proposed. We will be speaking mainly about "geographic" information (maps), and not about information concerning the rights to land in the Albanian case, since the system for linking parcel maps with legal information on rights is still being constructed.

There has been a lack of legislation in Albania to regulate the policies of contemporary government agencies related to the creation and distribution of land information, as well as other types of information, although some out-of-date laws and governmental decisions are still erratically enforced. For example, the Decision of CM, N. 110, dated May 17, 1984, states that any kind of topographic-geodetic work conducted in Albania should follow the regulations defined by the Military Topographic Institute. The state agencies engaged in construction must send this institute a copy of the general plan of allocation of construction sites, the coordinates and the heights of all construction objects, catalogues with the coordinates of the geodetic points, and many other data related to the work performed. While such a decision 'made sense' for the time when it was drafted, today, in a market economy society, it is outdated, but still technically in force. Meanwhile, the needs of new situations, such as the access policy for raw data, registry index maps and electronic copies of kartelas (i.e., title documents) have not been addressed. Cooperation of state institutions among themselves and with the private sector in order to draft proper legislation about land information is a key in achieving a solid legal basis for the future of land information administration. While intentions to draft legal acts that would exclusively serve only the interests of public institutions and would restrict access of private agencies to information might work in the short run, such legislation would not likely survive the new "game" of market economics in the long run.

Traditionally, the government has been the only collector of spatial data in Albania. In the conditions of a centralized and often uncoordinated economy, each governmental ministry, through its dependent institutions, built its own spatial databases. Small-scale mapping data was collected by the Ministry of Defense (scale 1:10,000 and smaller), and aerial photography was conducted sequentially in one area of Albania after another each year until 1989. The Ministry of Agriculture possessed cadastral data for each cooperative’s fields throughout Albania, and periodically collected data on land productivity, for planning purposes. Maps were produced for forest and pasture lands. The Ministry of Construction produced urban maps of roads, buildings and other topographic features at the scale of 1:500 and 1:1000 for
almost every city. Others, such as the Ministry of Energy and the Ministry of Transport, generated and maintained their own spatial data. The existing data generated during the previous regime are the main source of spatial information and a promising starting point for building larger future databases.

When Albania began to move towards a market-oriented economy, most of the government institutions became more restrictive in providing access to their data, in part because it was the most valuable asset they had, and in part because there were no rules established for providing of that information to other users. Efforts were made by the government to limit the individualistic tendencies of institutions for selling the information. For example, a recent Decision of Council of Ministers, (No. 505, dated October 26, 1993), states that “all topographic-geodetic archives of institutions that have maps, geodetic points, and other data, which were produced before 1992, and which serve the Project of Immovable Property Registration System, should be made available to this Project with no charge.” In practice, however, such efforts to legislate data sharing have had limited success.

Rapid development of the private sector in Albania has changed the scenario in terms of who is collecting data and generating information. Today, the private sector functions not only to serve public needs on information processing, but has also started to collect and create its own databases. In this new context the cooperation between the public and private sector to avoid the duplication of efforts for information gathering and processing becomes very important. Creation of data clearinghouses to provide data (that is, “metadata”) on the existing land information in Albania would be the first step for increasing the efficiency of such cooperation.

Historically, the sole purpose of collecting data was for the government to better control and plan the economy. Thus, it never occurred to government agencies that the public might ask for access to government data, because there was no public need for it at that time. While planning was the government’s main purpose in the collection of data, efforts from different ministries were often not coordinated, resulting in a lack of willingness to share the data among institutions. The lingering past mentality of not providing data to the public and not sharing it with other institutions, the lack of enforcement procedures, different existing political connections and interests, and the temptation to withhold information to bargain for a good sale price to supplement agency budgets have meant that compliance with decisions such as Decision 505 of 1993 has been weak.

A State Enterprise, for example, has had the responsibility of producing city topographic maps at the scale of 1:500 and 1:1000. Because of restitution and compensation programs, dynamic urban land markets, and many ongoing foreign projects related to city infrastructure, these maps are in high demand. Self-financing policies, introduced by the government as incentives for state-budget institutions, have been taken, in some cases, to extremes. Despite the fact that its largest field survey was conducted prior to 1992, the Enterprise management decided to charge any potential user of these maps as if the data were being produced for the first time, i.e., the full production costs for every user. This looks very much like the exercise of monopoly power, and would seem to suggest a potential for both stronger regulation and stronger competition in the provision of large-scale city maps. The option of charging of an average cost of producing the information is also difficult, since it would require an estimation of demand for information products, in order to set prices based on average cost.
After land was privatized, the purpose of collecting information about land also changed. Currently, private users of such information are increasing in number. While the private sector has more quickly realized public needs for information and is driven by customer demand, state organizations are still not finding the proper means to use the information that they own for their own benefit. A closer cooperation between public and private sector would assist in devoting more attention to the customer needs, and both sectors would benefit from this cooperation.

Foreign-funded programs are also generating new land information. Although it is well understood that the assistance provided by foreign aid is intended to serve broad national interests, it is now apparent that some institutions are tending toward non-cooperation or failure to share data. In addition to the reasons mentioned above, the unwillingness of some of the foreign aid providers, often guided by their own narrow interests, (i.e. “the project must continue,”) has contributed to these tendencies.

Clearly defining the main goals of data acquisition, the destination and maintenance of the final data products after project termination, and establishing the means of achieving these goals should be primary concerns of foreign assistance, from the beginning of a project. A research institute, for example, received a large grant to build a modern GIS unit (Arc/Info operating in a RISC-Unix machine). People were trained, inside and outside of Albania, in the use of the equipment and Arc/Info software. At that time, this aid was perceived as valuable for the future of mapping and GIS in Albania (i.e. would create beneficial externalities). Despite these intentions, access to the new technology has not been facilitated. The Institute has not developed cooperative arrangements with other public and/or private mapping and surveying units. The staff originally trained to operate the system has left the institute and the skill level of engineers has declined. Insufficient income has been generated to maintain and upgrade hardware and software.

Although it might be administratively difficult, establishing partnerships among foreign aid agencies, the public institution receiving aid, and private sector interested in land information administration could improve the outcomes of these projects and would ensure the continuation of these initiatives even after aid is consumed. For example, the land use project with another research institute created the potential for an efficient GIS unit, but is now closed and not used for the simple reason of lack of money from the donor and insufficient funding from the state budget to enable the Institute to further develop its GIS capacities.

Land information databases and GIS are expensive to create and maintain. The Albanian government, recovering from the collapse of the previously centralized economy and suffering from the recent failure of get-rich-quick financial schemes, is now unlikely to subsidize expensive systems. While tax revenue is the usual choice to cover most initial investment in land information (the public good argument), the Albanian Government has not been successfully taxing Albanians in recent years. Despite well-written laws, the government has only been able to partially collect expected revenue from customs fees, income taxes and from taxes on profit of private businesses. Taxation schemes are often associated with cheating and corruption. There has been no widely successful mechanism for collecting taxes on the personal income of citizens, except for public employees. The Law 7805, on “Property Tax”
was passed in March 1994, but a decision of the government stated the law should not be
enforced before 1996. Later, another decision postponed the enforcement again until 1998.
The current inability of the government to fully collect taxes is pushing policies of information
dissemination increasingly in the direction of revenue generation.

One way to reduce the demand of state institutions for financial resources from the
Government will be to enter in partnership with the private sector for the creation and
maintenance of land information in order to share the costs. Well-written rules to regulate such
partnerships are necessary in order to generate expected benefits for both parties. While the
private sector participates to cover a part of the expensive database systems to be created,
reasonable compensation by state organizations would be necessary, perhaps via providing
easy and cheap access to information, technology, and technical assistance.

Many government agencies in Albania have not withstood the rapid changes from a centralized
to a market-oriented system, administratively or financially. The low budgets of these
agencies, i.e. low salaries for employees, are unable to attract and maintain skilled
professionals and experts. Instead, many of them have chosen to establish their own private
business or leave the country for better opportunities abroad. Information about land,
characterized by large-scale involvement of up-to-date technology, requires professional
involvement from the fields of surveying, mapping, and computer science. In the absence of
skilled professionals and technology, data soon become out-of-date and their usefulness
decreases. One way to avoid such deterioration is for public sector institutions to cooperate with
commercial businesses.

There now exist a considerable number of private companies in surveying, mapping, and GIS
in Albania. There are companies that have successfully joined together professionals from
academia and engineers from the field, and have produced a number of GIS models for
different projects in Albania. More promising private companies are emerging every day. It is
expected that private sector will continue to strengthen its role in the GIS and land information
sectors. This development would inevitably subject government agencies with monopolistic
tendencies to some degree of competition.

Facing the realities of serving a new clientele and providing for financial sustainability is one
of the most difficult responsibilities for countries that rapidly change from an old system to a
new one. The desire of state institutions to keep the same control over the data as in the past is
extremely difficult and costly in conditions of a market economy. Similarly, attempts by the
private sector to benefit from information flows from state institutions will not last forever. In
these conditions, it would seem reasonable for both parties to find means of cooperating with
each other to bring to the table what they can best offer. Competition between the public and
private sectors has not proven to generate good results, especially in the conditions of a
democratically growing country such as Albania, which lacks a precise legal basis for
information in general, and of land information in particular. Instead, by building a legal and
administrative basis for potential cooperation between public and private sectors, the outcomes
of any initiative could be improved. However, no claim should be made that this process is
easy.
Government may assist, or limit, the role of the private sector by providing, or restricting, open access to data. In the long run, public-private cooperation appears likely to enhance social welfare if it breaks down monopolistic control, drives down costs and improves quality and accessibility of data. If competition remains narrow, however, or public-private cooperation simply creates new monopolies, social welfare is unlikely to be enhanced. The encouragement of competition and public-private cooperation gains support from the economic characterization offered in Section 2. If raw data are considered public goods, widely shared within government and made accessible for reasonable prices, competition in processed data products is encouraged and beneficial externalities are much more likely.

Traditionally, the Albanian government has had a monopoly on any data generated in the country. It is fair to say that an attitude of controlling such a monopoly has been deeply embedded in the minds of many government agency administrators. As a result it is rare to find administrators who advocate ‘open access’ to data. On the other hand, grave consequences may result from the tendency of government agencies to contract with preferred private companies, and, thus, transfer the control over the data into a limited number of private hands with similar monopolistic tendencies. Providing information equally to all private entities would avoid the negative impacts of monopolies, although in many European countries, state regulated private land information utilities have been created with apparently favorable impacts on the provision of information to the public.

The purchasing power of the Albanian populace is low. Despite the intention of the government to commit to revenue generation policies, charging the public too high a price for government data will limit the number of people who could pay for, and have access to, the data. Hence, government databases with even moderate costs for access will be of less use to society as a whole while income inequality could be exacerbated by the asymmetric availability of information to wealthier parties. Making the information open to the public at low user fees, and increasing the cooperation with the private sector, may help stimulate competition for the provision of information, and thereby could help push prices lower.

One additional reason for advocating open public access to information in the conditions of Albania relates to the recent serious engagement of Government in fighting corruption. There is a chance that monopolizing information and restricting public access to it would create the possibility of public servants to consider information as their own and to engage in illegal actions. Open access, in contrast, accompanied by reasonable information pricing, are appropriate long-term policies for Albanian public service institutions to reduce possibilities of corruption.

Because the Albanian government is preoccupied with a multiplicity of other important problems, there is a risk that issues of information policies might be overlooked. Despite the fact that Albania is lagging behind many of its neighbors in the movement toward an “information society,” it is inevitable that government, citizens, and private businesses will soon be forced to encounter the legal and economic issues related to land information. It is in the best interest of Albania that these issues be addressed now, when the information base has just started to grow rapidly.
5. SOME PROPOSALS

5.1 Consensus Building

Reaching consensus about the rules, which govern access to information about land, requires exchanges of ideas and concerns. Consensus building requires the involvement in these exchanges of government agencies, academics, citizens, data suppliers, private businesses, and lessons from experiences of other countries. In order to create a more precise evaluation of the existing policies, attitudes, controversies, and the potential trends, workshops would be useful, involving public and private agencies which use land information, on the rules of access to land information. Systematic investigation of written and unwritten rules of access to land information, which the producing agencies have and would like to have, would be useful. Data on the costs of production, reproduction and operation for the main governmentally supplied land information products could serve as a basis for guiding pricing. The results of these workshops and investigations should help to improve the design of such policies and drafting of the proper legislation.

Institutionally, it would be useful to create an association composed of representatives of public and private agencies, which produce, maintain or use land information, a National Geomatic Association (NGA). A NGA could be placed in charge of guiding and assisting investments in a national geographic information infrastructure, and also would help draft legislation and implementation regulations for protecting privacy and assuring access to land information.

Joining the European initiative for the creation of a European Geographic Information Infrastructure (EGII, 1996) should be one of the main goals of a NGA, including the standardization of geographic data according to European standards.

5.2 Proposal for Geographic Information Pricing

Access to geographic information is influenced by the cost of that access. There were two approaches to such pricing: 1) the “mature” system approach, and 2) the transition country approach.

Based on the experiences of European countries as presented in the Tirana Workshop¹, concerning the pricing of land registration and cadastral information, the general

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¹ Workshop on Public/Private Sectors Relationships in the Establishment of Land Registration Systems, 31 March-1 April, 2000, Tirana, Albania, under the auspices of the United Nations Economic Commission for Europe, Committee on Human Settlements, Working Party on Land Administration. The workshop was organized by Albania's Immovable Property Registration System with the assistance of the United States Agency for International Development (USAID) and the European Union's PHARE programme in Albania. Representatives of the following countries participated: Albania, Armenia, Austria, Canada, Czech Republic, Denmark, Finland, France, Georgia, Germany, Greece, Hungary, Latvia, Netherlands, Norway, Republic of Moldova, Slovakia, Slovenia, Spain, Sweden, Switzerland, the former Yugoslav Republic of Macedonia, United Kingdom, United States. A representative of the ECE secretariat also took part.
recommendation of the Workshop was for the fees charged for information should be fixed for all users, irregardless of the funding used for the creation of the information:

“It is recommended that there should be a fixed fee for any particular land information enquiry reflecting actual cost. The same fee should apply for all enquirers irrespective whether they come from citizens, business or public bodies. Differentiated fees may apply depending on the type of land information enquiry to be provided (e.g. verbal information, inspection of documents, photocopies of documents, electronic on-line access, etc.).” (U.N., 2000, p. 7)

The Workshop did recognize that in the transition countries, where systems are being developed, fees should be kept as low as possible to encourage participation in the land market.

“It is recognized that in countries where the government is currently investing substantially in building a land registration and cadastral system it is not reasonable to require cost recovery fee payment. In countries where electronic access systems are developed, fees can be reduced because of the lower production costs.” (U.N., 2000, p. 7)

A slightly different view is that in transition countries, where there is a mixture of governmental and external grant funding for the creation of land registration and cadastral information, the fees charged for access to such information should be multi-tiered.

The following graphical presentation integrates the ideas and recommendations presented above concerning access to geographic information with assumptions about the sequencing of land information and the economic development trajectory of transition countries (see Figure 1). Prices would depend on the funds used for the creation of the geographic information and on whether the user is public or private. It is proposed that:

a) All existing spatial data created during the centralized economy for purposes of the government should be provided to any interested party for the cost of dissemination, including operating costs (line 1-2).

b) The spatial data that are created by government agencies, using state budgetary funds, as upgrades of the existing data, should be distributed with a price equivalent to expected average cost of producing and maintaining the upgraded data, due to the facts that the existing data in most cases is out of date, extra work is needed to provide the public with the data requested, and that government budgetary financing will probably not be regularly forthcoming for these purposes (line 3-4).

c) Spatial data that are newly created by foreign-funded projects may be distributed at a price higher than the cost of dissemination, but overseen by a supervisory entity like a NGA; this will provide financial resources that the new institutions will use during their reconstruction (line 5-6).

d) Spatial data that are newly created by government agencies, using the state budget, would be distributed to private users for a price higher than the cost of dissemination, but lower than the market rate, assuming it is higher. This “cost sharing” will help the institutions reconstruct, while also encouraging wide use of land information and
stimulating private and public-private provision of new land information products (line 7-8).

e) At a certain time (“year 20xx”), when economic conditions can be expected to have improved, the raw data and unelaborated products created by the government agencies for government purposes would be distributed to public for the cost of dissemination (line 9-10). The value-added services for private needs and not for government purposes would be distributed to the requesters at a competitive market rate (line 9-11-12). In this way government will neither be monopolizing data paid for by the public or giving special benefits to any subset of users.

*Figure 1. Pricing of Geographic Information in Transition Countries over Time*

Year 20xx identifies the time when a transition country, for example, Albania, would have recovered from the economic consequences of the past, and would have entered the information age with characteristics of a western country: a democratic government leading a democratic society; satisfactory economic development; strong private sector; full tax collection by the government; increase in the purchasing power of the public; and precise legal and institutional framework for defining and implementing information policies.

### 5.3 Proposal for Spatial Data Sharing

While spatial data sharing is considered one of the means to increase the usefulness of the data collected, narrow short-term mentalities and selfish ambitions shown by different public or private institutions have limited such a process.

In the following paragraphs we present some arguments for the land registration system in Albania to implement policies of data sharing and open access to base core data.
a. The effort to create a functioning Immovable Property Registration System (IPRS) is one of the most ambitious and successful large-scale projects in Albania. This system creates the basis for the development of a legally secure land market, expected for so long by the majority of Albanian people. In order to fulfill this purpose, the increase of the number of people that should and could use this system becomes a priority. The policies for data sharing and open public access to information of IPRS will be instrumental for assuring equal rights of individuals to public data, one more condition for the movement toward a democratic society.

b. From the beginning of the project, IPRS was designed to be independent of politics. Keeping the land registration system far from politics is a necessary condition in order for the system to function properly in the long run. Besides other measures, one way to reduce the impact of political changes in Albania is for the registration system to be open to public. Otherwise it could become a source for improper actions by political forces.

c. One of the unfavorable consequences inherited from the old system is the lack of cooperation and coordination among different institutions in Albania. Such cooperation is hard to achieve even in a democratic society. However, because IPRS data could and will serve interests of many other ministries and public and private institutions in Albania, policies for data sharing are very important. Data sharing is not simply the "giving out of data" by the IPRS. Instead IPRS, as other geographic information production entities, could use data sharing to benefit from the work of cooperating entities to improve the geographic information contained in the IPRS. For example, the Ministry of Finance is interested on land ownership data as a means to ease the process of tax collection. One way that IPRS could profit from sharing data with this Ministry would be to arrange an agreement that the Ministry of Finance reports back to IPRS all the discrepancies in ownership or identification found or reported by taxpayers. This would serve IPRS offices to update their data with a minimal cost.

d. Continuous improvement in the accuracy of registration data is the premise on which the IPRS can begin thinking about the creation of value-added information products, which could be sold to state or private buyers, and so generate income for the institution. For example, road construction companies need information on the ownership of land along the highway. IPRS could produce these (value-added) data and eventually sell them to the private, interested parties at a market price.

e. Because IPRS is one of the first institutions to produce massive data for which broad categories of users are interested, policies for the implementation of open, free access will have to be flexible in order to respond to market changes that may occur in the future.

f. By applying policies of data sharing and open access to information, the number of users of this information would increase. Having more participants in data sharing initiatives would help to create better ideas for the creation of spatial data standards and GIS, which will consider the opinions of a larger group of data users and providers.

g. In the process of sharing data with other agencies, the IPRS would enrich its own databases as well, which constitutes the basis for the creation of different GIS coverages. Creation of such
relationships with other agencies would create also the potential for collaboration in the foundation of a National Geomatic Association in Albania.

h. Only if led by a policy of data sharing and open access to information, can an investigation of economic and legal aspects of land information, such as copyright, privacy, or liability be performed. The results of such analysis could then be used to implement appropriate legislation related to the issues of land information.

The importance of information sharing, as well as, the need to avoid duplication of record keeping was also recognized at the U.N. WPLA Workshop, which offered the following recommendations:

“It is recommended that organizations maintaining land records should examine possibilities to improve their operations by sharing information and coordinating land information services they provide to users. The objective should be to reduce costs and to improve services to the public. The aim should be to enable users to get access to all publicly available land information from a single place of enquiry.“

“To achieve these aims and objectives it is recommended that countries should establish a national coordination board with representatives from all organizations holding public land information.” (UN, 2000, p. 8)

5.4 Public Access to Land Registration Data

Section 30 of the Law No. 7483, 13.07.94, "On Immovable Property Registration", states that "Any person can examine and consult any register and can request a certified copy of it, a part of the Registry Index Map, any filed instrument or survey plan deposited in the Registry, by presenting a written request and by paying the appropriate fees.” It would benefit Registration Offices in the Districts to set up a facility, either computerized or manually managed, to allow the public to come into the office and search for the information that they are seeking.

One option is to scan all documents entering the Registration Offices, and to place such documents into a facility which is easily accessible to the public. Such a facility could be managed by a private company in cooperation with the IPRS.

Another option would be to simply open the Registration Offices for searches after the public service hours. This would not only generate income for the registration offices (fees for such searches have to be defined), but it would also ease the registration process for the customer that will need to register a transaction. At the same time, employees of a Registration Office that would assist customers in their searches could also advise on the kinds of documents that they will need to perform a transaction in the future. Such assistance to the public would reduce the workload in the Registration Office during the public service hours.

6. CONCLUSIONS

Access to land information in transitional countries, in this case Albania, is a topic which has received scant attention. As the period of privatization of properties works its way to
completion and consolidation, new needs for land information in a market-economy context are emerging, both from private parties and from government users with changing mandates. In the face of these developments, the questions of access to what land information, for whom and at what cost, are becoming more urgent. These questions are closely linked with fiscal issues, conceptions of the role of geographic information in economic development, and the role of geographic information in the creation and maintenance of democratic institutions.

The discussion presents examples of the propositions we offered at the outset, which characterize land information institutions in transitional economies as being restrictive in the face of emerging new demands while simultaneously facing difficult financial challenges. To avoid the potentially large social and economic costs which we view as likely consequences of the further institutionalization of current arrangements of land information production, we first present an economic argument for information pricing policy which stresses regulation of pricing by government land information monopolies and the encouragement of competition for non-core land information products among public, public-private and private entities. Recapitulating the differences between US open access and European restricted access traditions, we argue in favor of a variant of open access policy which is balanced by the need to keep institutions financially viable through a minimum level of revenue generation. Public funding of raw data collection, coupled with intra-governmental data sharing and the encouragement of a fair market for secondary data products appears to be a course which can work, but only if actions are taken in the near future to encourage this development path.

Copyright and privacy concerns become increasingly important as more original informational products are created and more personal data is collected, while becoming more easily reproduced and accessed through electronic means. We recommend that basic principles for preserving privacy should be incorporated into the geographic information policy that we are advocating. This argument is linked in practice to the proposal to carry out consensus-building activities about land information access, conduct further research on data needs and the real costs of these data, and to create a National Geomatic Association as a coordinating body for work on legislation, standards, formats and pricing regulations for geographic information.
APPENDIX A

THE COPYRIGHT-CONTRACT APPROACH

Copyright is the internationally recognized form of intellectual property rights "available to owners of databases and compilations" (Lopez, 1993). A copyright has two main purposes: (1) to afford authors a degree of monopoly over the protected work, thereby encouraging useful human endeavor and that investment in productive pursuits; (2) the more subtle, yet equally important; to encourage publication and distribution of information” (Holland, 1994).

In Europe copyright protection for GIS databases is “generally reserved for the original supplier or arranger of the raw digital data” (Lopez, 1993). Copyright systems throughout Europe fall generally in three categories:

- the droit d'auteur system - Continental Europe;
- the common law system - UK, USA and common law countries; and
- the socialist system - Former Soviet Union (FSU) and, to a large extent, Eastern Europe.

European government agencies generally claim copyright on their public information holdings. In the United Kingdom for example, Ordnance Survey (OS) maps and GIS databases are protected by Crown Copyright. Users of OS mapping products must apply for a license to use the data, while complying with the Crown copyright regulations. The license fees or charges vary from a minimum marginal cost necessary to cover the costs of data dissemination, to substantial charges designed to recover the total costs of database development (Lopez, 1993). In most EC countries, ‘creative expression’ is required for a work to classify for copyright. However, the interpretation of “creative expression” may not always be the same, especially in the case of maps and GIS, where the distinction between the expression and the factual information seems to be even harder.

In the US, the 1976 Copyright Act provides the legal frame for the protection of databases. There is a difference between the definition of copyright in the United States and in Europe. Instead of ‘creative expression’ of European Copyright Law, another ambiguous term is used in the US law: ‘original work of authorship’. Moreover, while copyright protection for databases in the US is becoming narrower, “the proposed legislation within Europe points to broadened copyright protection” (Lopez, 1993).

Terms such as ‘creative’ and ‘original’ allow for misinterpretations that often require the interference of courts in resolving sophisticated cases of copyright conflicts over physical inventions. It is even harder to define copyright in the case of maps and/or GIS. For example, ‘originality’ is a requirement for copyright of maps, just as for databases. While maps as a whole can be original, each specific feature on a map may not. Under such an interpretation, map copyright could extend to maps as a whole, but not to specific features such as roads, water bodies, and vegetation. Johnson notes that “digital maps could easily be manipulated, similar to databases, to produce new, copyrightable maps” (Johnson, 1995).
In Albania the idea of copyright is new. In the past, all published work has been produced for the government, which had full control over any product, regardless of the level of ‘creativity’ or ‘originality’, sometimes even confiscating the cash prizes given to Albanian figures during international competitions. In May 1992, the Parliament approved Law 7564 on “The Author’s Rights”, which was based on a European model. This law defines the moral and financial rights, and the life duration of copyright. However, no section of this law deals with the copyright of computer databases in general, and computerized mapping and surveying data, or GIS, in particular. Special legislation related to computer databases is needed. Attentive drafting of legislation is required, because extremely broad copyright might make data less accessible as information becomes more proprietary. Beyond looking at American and Western European experiences of copyright, Albanian officials would profit from a careful investigation of copyright laws, enforcement procedures, and their subsequent results in other Eastern European countries.

Copyright alone may not be sufficient to avoid illegal actions by irresponsible individuals and to hold them accountable. Recently, contracts or licenses have been used in addition to copyright provisions:

“By contract, the provider may ensure a broader scope of protection than copyright would afford…. Moreover, by contract, the information provider may secure protection for material that may not be copyrightable. From the provider’s point of view, contract may therefore prove a more attractive means of obtaining the same, or more, protection than that available under copyright” (Ginsburg, 1994).

Parties to the contract can, and should, specifically define the rights of the original author, the rights of the buyer, the limitations on secondary uses, and the penalties in case of default. Nevertheless, Johnson points out that, “the one-sided nature of the contract (usually drafted by the GIS agency) could be an hindrance to the enforcement of the agreement” (Johnson, 1995). How strongly courts will enforce issues of copyrights and contracts, regarding new forms of land information in Albania, is still an unanswered question.
APPENDIX B : PRIVACY

The rapid development of technology, information, and large databases also has important implications for individual privacy. Legislation related to privacy written years ago is often made irrelevant by new technological developments. As Onsrud points out:

“Although the search capabilities and provided databases [are] extremely valuable to small businesses, they also [are] valuable to those wishing to engage in burglary, fraud, sexual harassment, and a host of other illicit purposes” (Onsrud, 1994a).

In The United States, the major federal privacy statute is the Privacy Act of 1974. Onsrud describes the key provisions of the act:

This privacy Act: (1) allows individuals to determine what records pertaining to them are being collected, maintained, or used by federal agencies; (2) allows individuals to prevent records obtained for a particular purpose from being used or made available for another purpose without their consent; (3) allows individuals to gain access to such records, make copies of them and make corrections; (4) requires agencies to ensure that any record which identifies individuals is for a necessary and lawful purpose, and (5) requires agencies to provide adequate safeguards to prevent misuse of personal information (Onsrud, 1994a).

However, critics argue that the provisions of the act have been poorly enforced and adhering to privacy protection guidelines has not been a priority for federal agencies (Flaherty, 1989). There are other acts that regulate the privacy issues under specific circumstances such as the 1988 Computer Matching and Privacy Protection Act. Post contrasts this US legislation with similar European laws:

“Instead of imposing the consent requirement of individuals for personal information that the commercial sector may collect, as in Western Europe, legislative attempts in the US intend to ensure the accuracy of the data collected or to impose other conditions concerning the use of the information.” (Post 1989).

The European Community is currently considering even stricter rules on the protection of personal data, although there is diversity from one country to another. One of the more visible examples in which privacy concerns have altered government actions is the recent cancellation of national censuses in the Netherlands and West Germany. Because these governments were unable to accommodate their citizens’ concern over privacy and the potential misuse of personal information, public resistance forced cancellation of the censuses and the many substantial benefits of census taking were lost (Flaherty, 1989). Raab points out that privacy protection concerns have accompanied the fall of the socialist bloc:

“Among the members of the EU, Italy and Greece have not yet adopted a national data-protection law, and until very recently there was no Belgian legislation of this sort. It is interesting, however, that the dramatic changes occurring since 1989 in Europe, including the dissolution of the Former Soviet Union and the overturning of
Communist regimes in its former satellites in Eastern Europe, have been paralleled by significant attempts to legislate privacy in those countries….Hungary and the Czech and Slovak Republic, for instance, now have national laws, and they are being considered in other countries as well”. (Raab, 1994).

In the areas of privacy and data protection, Albania has been behind the other Eastern European countries. Legislation concerning personal privacy and freedom of information has been drafted and passed (Law No. 8517, 22 July, 1999), but implementation has been lagging. Since no large databases for individuals have been created, privacy protection has not yet been a concern for Albanians. The creation of the IPRS will soon change this situation. Nevertheless, Albania is experiencing an increase in the number of searches, sometimes for data on politicians.

The land information community should not wait for privacy issues to reach crisis levels before taking action. Knowledge of the principles for privacy protection related to the land information community (Onsrud, 1994a) will be helpful not only for future legislation in transition countries but also to serve as guidelines given the current lack of formal law. Some of these principles are:

“Collection Limitation Principle: There should be limits in the types and extent of personal information collected for, contained within, or used in conjunction with geographic information systems. Collection should be lawful, fair, and with the knowledge and consent of the individual.

Data Quality Principle: Personal data should be relevant to the purposes for which they are to be used.

Purpose specification principle: The purposes for collecting personal information should be stated upon collection.

Use Limitation Principle: Personal data should not be disclosed to others, made available to others, or used for purposes other than for which the data were collected without the explicit consent of the subject data or by the positive authorization of law.

Security safeguards principle: Personal data should be reasonably protected by the data controller/administrator.

Openness principle: Developments, practices, and policies, with respect to personal data, should follow a general policy of openness.

Individual Participation principle: Data subject should be allowed to determine the existence of data files on themselves and be able to inspect and correct data at no cost or marginal cost.

Accountability principle: GIS data controllers, whether in the public or private sectors, should be held accountable for complying with these guidelines” (Onsrud, 1994a).
REFERENCES


