TO NEW SOLUTIONS AND NEW TECHNOLOGIES IN TERRITORIAL PLANING IN LITHUANIA - TEN YEARS OF EXPERIENCE OF THE SURVEYING WITH ISSUES OF THE URBANISATION AND RURALISME

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ABSTRACT

The last decade of the 20th century for Lithuania, as well as for other Eastern and Central European nations, was the time of major strategic change.

In surveying and territorial or spatial planning, the change manifested itself in a number of aspects, including the:

1. political and social,
2. economical,
3. legal,
4. technological and
5. ethical aspect.

As Lithuania recovered its sovereignty in 1990, the essential catalyst of the progress and change in surveying and territorial or spatial planning has been the transition from a totalitarian (occupational) regime to public administration and market economy.

The decade was distinctive by overall engagement in formation of a legal framework, a great volume of assignments (including land reformation, real property cadastre transformation, spatial planning, restitution and establishment of a property register) and a demand for new approaches and technology.

The great volume of work was the essential impetus that made the surveyors seek implementation of new technologies and tools made available by the information society. A number of international institutions, economical and technical assistance foundations and programs (PHARE; EU; Swedesurvey, World Bank, etc.) provided a significant support towards this end.

Extensive inquires are made in the report to the experience of land reformation and land management, the strengths and the weaknesses in urban and rural areas. An emphasis is placed on the sustainable development of the processes of spatial planning, valorization, and reasonable use issues in Lithuania.

The demand for GIS / LIS and the application of new technology in Land Use Planning and Land Cadastre and Register has grown in Lithuania over a few recent years. The

first phase of the designing of land reformation projects for rural area, completed in the late 2000, has shown a sharp demand for technological novelties. The new Law on Real Property Cadastre will make an additional impetus to employment of the latest technology for the management of information banks of spatial planning.

1. THE CHANGES IN THE TENURE AND PROPERTY OF LAND AREAS AS A BASIS FOR DEVELOPMENT OF MARKET ECONOMY AND A NEW SPATIAL PLANNING

As the independence of the Republic of Lithuania was restored in 1990, the resulting political and social changes invoked the changes in the legal and economical framework. Resolution of the issues of the ownership rights in respect of land and other real estate required a consolidated and a consistent approach of politicians and experts. However, the expectations the general public had in respect of private property during the transition period had to be satisfied immediately.

As the Law on Peasant Farm was adopted in 1989 and the Government (the Council of Ministers) approved the regulations on private building, residential blocks started appearing in numerous suburbs around the country. The chaotic development of these residential blocks over 1989-1992 invoked most of the problems in spatial planning. Legal instruments of building and spatial planning failed to be enacted in time to provide a necessary regulation for the outburst of private initiative and private ownership development.

Allocation of 2-3 hectare sized parcels to rural residents to be used and controlled by them (1991), an expression of social support for rural people, brought an enormous disharmony into the process of spatial planning in rural areas. Both agrarian and land reformations left aside the issues of consolidation and addressed restitution of ownership and its distribution among the heirs, which meant focussing on breaking up rather than consolidation. The establishment of a network of small properties matched with the aim of the government in the field of social development and politics, i.e. the establishment of the institute of private ownership as the fundament for market economy. On the other hand, as the breaking up of properties was not supported with adequate legal instruments (that would stipulate such issues as the change in land-use, spatial planning on the basis of a zone instead of a detailed plan of an individual parcel) it has prevented the owner of a small property, whether located within an urban or a rural area, from becoming a full-functioning market entity.

The outburst of development of private ownership and private building furthered the need for a land information system and the development of a network of land management. The essential precondition for a land management network was perceived: the reliability and protection of legal status of land as well as any other real property is a factor which is of utmost importance to spatial development. The investors in a market economy need a reliable data on properties, the planning of the use of the areas of land, building development opportunities, etc., that is generated by a reliable land information system.

The initial stage of preparation of land reformation projects in Lithuania (1991-1993)

was based upon legacy methods, meaning paper documentation and graphical work. The experience gained in spatial planning in the eighties allowed to accept major undertakings which, however, invoked inadequacy of legal framework and organisational arrangements.

Land management during the soviet period had some features specific to a process-based approach. It was employed to make the best possible use of land resources, to provide necessary regulation for farming, utilisation of natural resources, management of property, physical planning of urban and rural areas and development of the infrastructure.

The arrangement of spatial planning and the enormousness of the scope of work facilitated the perception of the importance of advanced technology, in particular a digital one, as well as a proper institutional and financial procurement. Since 1994, these issues have been focused upon significantly in Lithuania.

2. SPATIAL PLANNING IS IN A NEED OF ADVANCED TECHNOLOGY

Spatial planing in the Republic of Lithuania is regulated by the Land Law, the Territorial Planning Law, the Building Law, the Law on Protection of Cultural Heritage, as well as applicable rules and regulations. The Territorial Planning Law defines the goals, the entities in charge, the documentation of planning, its content and the processes of preparation.

By its importance planning is classified on one hand under national, province or municipality, and on the other hand on the legal or physical entity level. By its content planning is classified under master, special or detailed categories.

Master plans are prepared in respect of the entire area of the country, each province and municipality. They include at least a 20 years forecast. A master plan has no fixed expire term and may be revised by the approving institution from time to time.

The following objects are eligible for special planning: the stock of forest land and inland waters; social, cultural or economic activity within the area subjected for the planning, the improvements or parts of infrastructure, protected areas, their networks, natural values and landed cultural values.

The subjects of detailed planning include parcels, forest holdings or their groups, urban areas, agriculture holdings, rural settlements. Detailed planning is undertaken by land owners, users, managers of public land and municipalities.

There is a number of institutions engaged in spatial planning in Lithuania. Overall guidance of the process is delegated to the Ministry of Environment and the Ministry of Agriculture. There is an unnecessary competition between these two institutions rivaling since the very beginning of the process for guidance issues, provision of technical facilities, compatibility of data banks and corporation setup. For the time being, the Ministry of Environment is in charge of preparation of the Master Plan of the country, the Department of Land Management and Law under the Ministry of Agriculture is in

charge of the land reformation work, and the two institutions are collectively the founders of the corporation of Land Cadastre and Register. The operations of the State Land Survey Institute are supervised by the Department of Land Management and Law.
All the above listed and some additional institutions undertook implementation of the technology of orthophoto mapping and digital technology since 1995. An extensive support has been provided by the experts and financial foundations of Nordic countries (Sweden, Denmark, and Norway) as well as other countries (France, Canada, etc.). The support has enabled a rapid taking over and adoption of advanced technology and establishment of data bank facilities. However, there is no uniform approach adopted for spatial planning and practical land management that would embrace the entire country. Therefore I would like to discuss the technology and guidance issues by class of territories.

2.1. Land reform in rural areas

The level of technology is far from being adequate in this field, as advanced technology is hardly, if ever, applied for the land reformation work. Preparation of the land management and spatial planning projects the land reformation encompasses is based on paper documentation and graphical work. The hardcopies of the documentation are filed into the folders of legal documents pertaining to the restitution of ownership. It is only afterwards, in the stage of precise geodetic survey, that a digital plan may emerge, which is filed with the land cadastre and register and is usable in a land information system.
The State Land Survey Institute, possessing the advanced digital technology facilities, engages in preparation of topic-specific maps of the rural as well as the entire area of Lithuania. The Map of Soils of Lithuania (1997), the Map of Forests of Lithuania (1999) as well as some additional maps scaled M 1:300 000 have been issued.

The first stage of the land reformation completed in 2000, has left many spatial planning issues unresolved. Restructuring of rural development and agrarian production development in rural area should be resolved by 2010. For this to happen the local regions (municipalities) should provide land management schemes scaled M 1:50 000. Preparation of these schemes was to be undertaken back in 1996. The preparation process of such schemes is defined by governmental decree No 837 of 15 07 1996 and the regulations for preparation of land management schemes of regional or municipal areas adopted by the respective decrees of the Ministry of Agriculture and the Ministry of Building and Urban Development (the Planning Regulations Code reference 92-961, effective since 01 01 1997). The schemes are applied to implement the adopted policy of land use. Before the masterplan of a municipal area is delivered, the municipal board uses a land management scheme of a municipal area which is incorporated in the masterplan later. Spatial planning solutions incorporated in the scheme serve as a basis for preparation of detailed projects and internal land management projects.

A regional land management scheme incorporates a M 1:50,000 map of use-specific land, and a M 1:50000 map of agriculture land use explanations.
Financial resources must be sought to prepare these plans in a digital form.

2.2. Urban and suburban planning

The suburban areas of the major cities and towns of Lithuania are subjected to the most intensive development of real property market and, as a result, spatial planning. A special development status granted to these areas in 1992 has initiated a building invasion. However, the investments were made to individual parcels only. Urban development and infrastructure planning were not financed adequately and thus failed to comply with the principle of partnering between public and private sectors. The spontaneous valorization of these areas on the market in 1993-1998 prevented the process from being adequately controlled, not to speak of application of a firm process for resolution of spatial planning issues. Digital information on these areas currently is very much needed for local government institutions, urban planners and the real property owners themselves. It means such information is required by all the members of land management activity and land market, as well as the developers of such areas.

The Council of the Vilnius Municipality approved the master plan of Vilnius on 18 December 1998. The master plan is comprised of an exhaustive overview of the city's area and its different sectors (17 volumes of the survey materials), the master plan solutions (the textual part of 14 volumes, about 900 pages), and the drawings (about 25 pieces). The information which is of an importance to the city's inhabitants and the investors is submitted in the textual part, the section entitled "The City's Structure and the Land Use Regulations", as well as the Main Drawing and the Regulations Drawing. The master plan of Vilnius has been delivered in a digital form (Arcwiew, Arcinfo). The materials of the master plan are available from the Vilnius municipal government web site at http://www.Vilnius.sav.lt.

All the phases and instruments of spatial planning adopted in Lithuania are relevant for urban and suburban areas. These phases have been very complicated over the last decade of the 20th century. The Law on Building, currently under revising, should invoke a new edition of the Law on Spatial Planning. Appropriation of land for the needs of general public, coordination of other private and public interests within these areas, the issues of land value (these areas are expensive ones) make implementation of digital maps and geodetic survey by using GPS and total stations desired and necessary.
As the digital information is made available, the efforts in spatial planning, mass valuation and other fields of land management and spatial development might be improved.

2.3. Coastal area

Lithuania has about 100 kilometers of the coastline of the Baltic Sea including the frost-free seaport of Klaipëda. The sandy beach is an important asset of the country as it is perfect for leisure. This is why spatial planning involves certain specific issues and legal regulations on the coast of the Baltic Sea. Sea and land maps must meet the needs of management of important transport infrastructure and recreational resources. Orthophoto mapping as well as the techniques of remote assessment of land and water areas are necessary, inter alias, due to the sensitivity of the nature. The Baltic Sea, being an isolated natural system due to its deep penetration into the continent, is a sea of not only the Baltic countries, but also of Poland, Russia, Germany and Scandinavia, and it

hosts the transport flows of all the above countries.

The complex of technological and environmental systems is a constituent of the information environment of the continued spatial planning process. Therefore this local environment should be integrated with the spatial planning systems of the rest of the local regions of the Baltic Sea. An active process of development of private residential properties and the infrastructure is currently taking place in this part of Lithuania.

3. A NEW PARADIGM FOR LAND USE PLANNING

Over the decade concerned an efficient framework for spatial planning, in terms of legislative and regulatory instruments, as well as technical processes, failed to appear in Lithuania. The extensive tasks have mostly exceeded the financial resources available. A rigid departmental approach, inherited from the soviet era, has been preventing for the time being the establishment of a uniform network of areas whereas a surveyor would be assigned an important role. Adoption of technology in the field of surveyorship is important as it brings precise data on coordinates and cadastral maps.
The new paradigm for the entire process, which is apparently and irreversibly emerging , might be outlined as follows:

- from issues of the urbanization and ruralism to sustainable development covering the entire area of the country;
- from the regional scale to individual parcels and inside planning.

For adoption of these solutions data is necessary covering the entire cycle starting with an individual detailed site down through the general plan of an area and a regional map, and vice versa, from the general scale down to the detailed-map level. The entire process of spatial planning and land management should be engaged in establishing and maintaining such links. The process needs to be equipped with the up-to-date technology. The coverage of the land information system must be adequate and relevant.

The new Law on Real Property Cadastre of the Republic of Lithuania will make an additional impetus to employment of the latest technology in the management of information banks of spatial planning. However, an explicit framework and the documentation of technical specifications is required for establishment and maintenance of the individual data communication links and the entire process. Thus Lithuania shall face the necessity of implementation of the up-to-date technology in spatial planning, in addition to the challenges of urbanization and rural restructuring in the first decade of the 21st century.

4. THE CONCLUSIONS AND FINAL REMARKS

As the conclusion, I have outlined the following basic issues and general trends prevailing in spatial planning and land management in Lithuania:

- There will be a need for practical solutions, new legal instruments and technical tools for consolidation of land, land valuation and taxation, land use planning and land information systems.
- The need for land information and land use planning will grow in the banking sector, in particular as relates lending / mortgage and financial investments.

- Digital maps are becoming a vital part of the Cadastre and Register, and start serving as a versatile LIS used for spatial (and regional) planning.
- Surveying will – and should be – based on GPS, and digital technology, which requires financial support and the partnering between public and private sectors so as to assure a rapid technical development.

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Steponas Deveikis, Dipl. Eng. (1978), Vice President of Corporation "Matininkai", a member of the Lithuanian Association of Surveyors and of the Lithuanian Union of Land and Water Management Engineers; a member and Board member of the Lithuanian Association of Property Valuers (since 1994), present position – President of the Association.

Born 18.11.1955 in Lithuania. 1973–1978 studies of Forestry Engineering at the Lithuanian Academy of Agriculture; 1986–1989 post-graduate course at Lithuanian Institute of Construction and Architecture; a short-term post-graduate course (6 months) at Jean Moulin University in Lyon (France).

He has worked from 1978 until 1984 in Botanical Garden of the Vilnius University, from 1984 until 1991 in State Land Survey Institute; 1992–1994 in the Ministry of Agriculture of Lithuania, Land Management Department.

Professional experience in the field territorial planing and land management, historical and cultural heritage inventory, environmental systems development, consulting and legislation, 7 years experience in property and business valuation.

Since 1992 various publication, legislative works and lectures in the area of urban and rural land regulation and property valuation. He has also published 8 reports at International Conferences, about 12 working guidance notes and 20 newspapers.