Land Administration Education in Belarus: Past, Present, and Future

Marina VASKOVICH, Belarus

Key words: land administration, education, curriculum, Belarus, Russia, and Ethiopia.

SUMMARY

The paper elucidates the current structure of university education in Belarus and particularly emphasises available levels of education. Furthermore, the paper focuses on existing study programmes training specialists in the field of cadastre, land management, GIS, and real estate management in the Republic of Belarus. The overview is based on a survey of existing curricula of several Belarusian universities as well as on the National classifier of specialities. Recent development and future trends in land administration education of Belarus are partly addressed. The new study programmes in land administration in Russia and Ethiopia, developed in cooperation with Royal Institute of Technology (Stockholm, Sweden), are proposed as good examples of possible development of education in the field of land administration in Belarus. The advantages of such new integrated training of professionals for the individual and employer, the profession and society are noted.

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1. INTRODUCTION

The FIG Definition of the Functions of the Surveyor (FIG 2004) identifies a surveyor as a specialist with the academic background and technical expertise to conduct one, or more, of the following activities;

- to determine, measure and represent land;
- to collect and interpret land and geographically related information;
- to use that information for the planning and efficient administration of the land;
- to conduct research into the above practices and to develop them.

Thus, a professional profile of a modern surveyor consists all over the world of several activity fields, like measurement and mapping, cadastre, planning and development, valuation, property management, and building and construction. Mattsson (2000) indicates (based on Allan's report 1996) the fact that a surveyor in Western Europe is normally responsible for measurement and mapping. However, quite often surveying profession includes also property formation activities as well as planning and development, valuation and property management. One example of the countries with a wide spectrum of the surveying activities is the Nordic countries, where surveyors are widely involved in different fields and bear a high responsibility.

In response to the changes in the profession, surveying education is changing all over the world as well. It can be proven by the fact that the content and quality of surveying education are increasingly discussed by the scientific community over the last decade. More and more universities worldwide introduced or modernized existing surveying curricula. A wide range of the papers discuss various surveying BSc and MSc programmes, which are built upon a core issue of surveying, for example geomatics, land management and land administration (Gorte 2007, Lapaine 2007, Mattsson 2007, van der Molen 2007, Strauhmanis 2007 etc). Belarus, in spite of prevalence of technical surveying education, has several study programmes covering various areas of surveying activities. These study programmes are of a primary interest of this paper.

The overall goal of the paper is to identify and examine existing university programmes training the professionals for the land administration sector of Belarus and further to compare those programmes with the newly developed study programmes in land administration in Russia and Ethiopia.

The author does not claim a full coverage of existing surveying programmes in Belarus. The article mainly deals with the programmes related, to a greater or lesser extent, to land administration. Furthermore, all the courses are divided into the subject groups in accordance with their titles and not with the course content. However, the limited personal knowledge of

the course contents is also applied. Thus, the course division between the groups can be considered as of some subjective nature.

2. METHODOLOGY

2.1 System and levels of higher education

The Belarusian system of higher education is organised in accordance with the Law on higher education (2007). In particular, the higher education system consists of two levels and prepares thus two types of specialists. The first level lasts four-five study years and trains professionals with fundamental and specialized knowledge in a particular activity field of surveying. This level is a basic level of higher education and students graduate from the universities with a diploma of higher education. These study programmes can, to some extent, be equalized with the Bachelor study programmes in Western Europe. The second level of higher education is considered as an advanced level leading to the Master degree. It lasts from one to two years. The Master level is followed by the postgraduate studies with a three year study duration. However, the paper particularly focuses on the basic higher education and the corresponding curricula.

In short, Belarus with approx. 9 millions inhabitants has 44 state and 12 private higher educational establishments (2007)[1]. They train annually approx 340,000 students making 3,400 students per 100,000 inhabitants[2].

2.2 Land administration education in Belarus

Belarus has a wide range of surveying study programmes beginning from pure technical surveying and ending with the study programmes in real estate expertise. For the aim of this article four universities with five curricula close to land administration have been chosen for analysis, namely Belarusian State Agricultural Academy (agricultural academy in Gorki[3]) with two separate curricula in land management (LM) and land cadastre (LC), Belarusian State University (state university in Minsk[3]) with the curriculum in geographical information systems (GIS), Belarusian National Technical University (technical university in Minsk[3]) with the curriculum in real estate management (REM), and, finally, Polotsk State University (state university in Polotsk[3]) and its curriculum in land cadastre (LC).

All curricula are designed for five years of study. The total number of teaching hours varies from one university to another. After graduation, the students get a diploma of higher education in a particular area and corresponding qualification (Table 1).

[1] The Ministry of Education of Republic of Belarus
http://www.minedu.unibel.by/index.php?module=subjects&func=viewpage&pageid=103
[2] This figure is taken from the Review of higher education in Belarus (2002/03) at
http://ec.europa.eu/education/programmes/tempus/countries/higher/belarus.pdf
[3] For the sake of clarity, each selected university has been assigned with a short easy traceable name

At the beginning it would be useful to describe how a curriculum is formally arranged at any higher educational establishment in Belarus. In particular, the courses are divided into four general modules. Each module covers a special knowledge domain. The module of social and humanitarian courses is mainly taught during the first and second years of the study together with the module of general professional courses. They are followed by the module of special courses studied normally during the third and fours years of training. The fourth module consists of the optional courses. The courses of the optional module fairly differ from one university to another. For example, in technical university in Minsk the course in insurance law can be chosen by a student for further study, while at state university in Polotsk it might be the course in computer graphics.

Table 1 Belarusian universities and qualifications

University	Agricultural academy Gorki		State university Minsk	Technical university Minsk	State university Polotsk
Speciality	LM	LC	GIS	REM	LC
Qualification	Engineer	Engineer	Geographer, GIS specialist	Economist-manager	Engineer
Teaching hours	6380	7270	8536	7780	6830

For the aim of the paper, in order to easier identify the substantial differences between the curricula in question, all the courses have been divided into the following five subject groups:

- Basic/humanitarian courses
- Professional courses
- Legal courses
- Economical courses
- Other courses

It is worth repeating that the course division is rather subjective and the final figures might differ from those produced by another researcher. However, the general trends seem to be clearly identified. The course distribution for the Belarusian universities is presented in Table 2.

Basic courses build up a theoretical basis for further studies. They include, for example, higher math, physics, informatics, etc, i. e. the courses providing students with the basic initial technical knowledge. In turn, the humanitarian courses consist, among others, of history of Belarus, sociology, philosophy, foreign language, ethics and esthetics, Belarusian language, political science. Having finished these courses, the students obtain a broad outlook, however, lying outside of the professional scope.

Professional courses are defined as directly connected with future professional activities, namely for the land management and land cadastre specialities, the courses in geodesy, cartography, land monitoring and land protection, geodetical support of cadastre, history of land tenure, land use planning are identified as the professional ones. For the GIS speciality these courses are geoinformatics, geology, hydrology, introduction in GIS, land cadastre,

physical geography, photogrammetry, history of geographical science, etc. The professional courses of the real estate management speciality are identified as follows: fundamentals of marketing, theory of management, quality management, management on the real property market, risk management and theory of decision-making, advertising, mortgage systems and loans etc.

Furthermore, the attention shall be drawn to the fact that the paper separately distinguishes the legal and economical courses of each selected curriculum. It is done due to the importance of economical and legal knowledge in the everyday's work of surveyors (FIG 2004; UN-FIG 1996). Thus, *legal group of the courses* includes, among other, such course as the fundamentals of the state and the law, ecological law, civil law, land law, sometimes even labour and economic laws.

The economical courses address various aspects of the economic domain, such as, e.g., economical theory, real estate economy, investment analysis, and property valuation.

Other courses do not fit into any of the above mentioned groups. Theses courses, for example, are radiation safety, basics of energy savings, archiving activity etc. They are of minor interest and can thus be omitted.

2.3 Bachelor land administration education in Russian Federation and Ethiopia

The curriculum in land and real estate management (LREM) and that in land administration (LA) developed by State University of Land Use (Russian Federation) and Bahir Dar University (Ethiopia) respectively are employed here as examples of modern curricula meeting the requirements of the present-day society.

The newly developed Bachelor curriculum in land and real estate management at State University of Land Use Planning (Moscow university of land use[3]) has been developed by the teaching staff of the university in a close cooperation with the colleagues from Royal Institute of Technology (KTH, Sweden) within the framework of the successfully implemented project financed the Swedish International Development Cooperation Agency (SIDA). The study programme shall last five years and prepare specialists in the fields of land use planning, law, and economics. Moreover, the students shall get also acquainted with cadastre and GIS technologies, geodesy, mapping, and real estate management (State University of Land Use Planning 2006).

Another comparative example is the Bachelor curriculum in land administration at Bahir Dar University. The curriculum is also developed in cooperation with KTH and the SIDA financial support. It is developed for four years of study and after graduation, the students will get Bachelor of Science (BSc) in land administration. The first batch of the students was admitted to the programme from September 2006.

The courses of both curricula are divided into the different groups. In particular, the courses of the curriculum of Moscow university of land use are divided into the same subject groups

as the Belarusian ones, while the Ethiopian curriculum in land administration consists of five distinctive modules due to a lack of the relevant curriculum information:

- Basic
- Surveying
- Economic
- Legal
- Land administration

In spite of this inconsistency, the comparison of the curricula seems to be possible and trustworthy. The course distribution of the Russian university is illustrated in Table 3 and the course distribution of the university in Ethiopia is presented in
Table 4.

3. RESULTS AND DISCUSSION

This chapter presents the comparison results of the selected land administration curricula in Belarus, Russia and Ethiopia.

In all Belarusian universities the number of teaching hours assigned for the basic and humanitarian courses is rather equal, while that for the professional courses significantly varies. The detailed results of comparison are presented in Table 2. So, the GIS curriculum consists of 60% of professional courses and the REM curriculum at technical university in Minsk – only 42%. The legal courses compose a small part of the curricula at all Belarusian universities. For example, the legal courses at agricultural academy occupy 10% of the total teaching hours and the same at state university in Minsk – only 3%. The economic courses seem to be underrepresented at all Belarusian universities, except technical university. It is easy to explain by the fact that the REM curriculum is of a major economic background.

Table 2 Course distribution at selected Belarusian Universities

	Agricultural academy Gorki		State university Minsk	Technical university Minsk	State university Polotsk
Courses (% of total teaching hours)	LM	LC	GIS	REM	LC
Basic/Humanitarian	38	34	26	33	34
Professional	45	43	60	42	46
Legal	4	10	3	4	9
Economical	7	5	3	18	5
Other	6	8	8	3	6

The courses of the LREM curriculum of State University of Land Use Planning (Moscow) are more evenly divided among the subject groups. So, basic and humanitarian courses occupy 24% of the curriculum, the professional courses – 44%, while the legal and economical courses stand for 10% and 8% respectively.

Table 3 Course distribution at State University of Land Use Planning

Courses (%)	Land and real estate management
Basic/Humanitarian	24
Professional	44
Legal	10
Economical	8
Other	14

The subject groups of the LA curriculum at Bahir Dar University are most equally represented among all selected universities. In spite of the fact that they slightly differ from the above mentioned groups, the comparison could still be carried out. The largest part of the curriculum is occupied by the land administration and the basic courses (22% and 21% respectively). The legal courses, on the contrary, compose the smallest part of the curriculum but they are still rather significant (14%).

Table 4 Course distribution at Bahir Dar University

Courses (%)	Land administration
Basic	21
Surveying	20
Legal	14
Economic	17
Land administration	22

Since legal and economical knowledge is crucial for the surveying profession, the paper pays the main attention to the comparative analysis of these courses at all selected universities.

To analyse all the curricula in details, the following could be noted. The land cadastre curricula at agricultural academy in Gorki and state university in Polotsk seem to be quite similar. Indeed, both curricula include 10% respectively 9% of the legal courses and 5% of economical ones. The share of the legal courses in the curricula is higher than at other Belarusian universities in question. However, the basic technical and professional courses prevail in the land cadastre curricula at both universities.

The LM curriculum at agricultural academy differs a little from the LC curricula of the same university and state university in Polotsk. At first, it differs in a smaller number of the legal courses (4%), while the economical courses, to the contrary, are wider represented in this curriculum (7%). It is worth noting that in general LM curriculum still prepares the graduates for the agricultural sector. It means that a large part of the curriculum is filled with the courses kept from the Soviet time with a total domination of kolkhozes and sovkhozes. The following courses, for example, such as the basics of agricultural production, land melioration, land management of agricultural enterprises etc. compose a significant part of the LM curriculum. This in turn leads to a growing gulf between education and professional practice in Belarus.

The GIS curriculum at state university in Minsk includes many geographically related courses, while only some of them are technically oriented to GIS. If to look at the titles of the courses, it is easy to notice a large number of pure geographical courses like, for example, geomorphology, hydrology, soil science, geology, landscape science, physical geography etc. A distinctive feature of this curriculum is a larger share of professional courses (60%) with a very small part of the legal and economical courses (3%). For example, the legal knowledge is provided by the only course: basics of land legislation.

The curriculum in real estate management at technical university in Minsk is identified as a pure economic one. Indeed, it includes both general and specialized economic courses (i.e. those related to real estate). Totally they amount to 60% of the curriculum. The legal courses are underrepresented in the curriculum and compose just 4%.

The curricula of Moscow university of land use and Bahir Dar University in turn serve here as good examples of the study programmes responding to the needs of the modern surveying profession.

So, the LREM curriculum of the Russian university is distinguished, on the one hand, by an increased share of the legal and economical courses (18% totally). On another hand, the number of the basic and humanitarian courses is rather low (only 24%). This fact leads to a more equal distribution of the teaching hours among the different subject groups. In other words, the students obtain more specialized knowledge and less basic and humanitarian one. The teaching hours of the professional courses at the same university are on the same level (44%) as those of selected Belarusian universities (except state university in Minsk).

The LA curriculum at Bahir Dar University is a clear example of a pure land administration curriculum. In the first place, there is rather equal distribution of teaching hours among the subject groups, i.e. there is no prevalence of any group of the courses. The legal and economical courses compose 31% of the curriculum. If to add to them the land administration courses (22%), they totally compose 53% of the curriculum. Due to this large amount, it seems reasonable to suppose that the graduates of this speciality would be highly demanded by the labour market.

4. CONCLUSIONS

Changes occurred in the land administration sector in Belarus over the last decade (e.g., the Law on state land and property registration etc) led to the changes in the profession. However, it would seem that the universities failed to adapt their study programmes to the new requirements despite of an increasing demand for such professionals. For example, according to the above mentioned Law, to act as a land registrar in Belarus, a person shall have, among others, a legal or cadastral academic background. However, the relevant universities do not provide the graduates of the cadastral speciality with the sufficient level of knowledge in legal and economical domains. In other words, the Belarusian universities do not fully provide a

deep education needed by the practice. Thus, the students shall continue their education after graduation that in turn generates extra costs for the whole society.

In particular, having based on the comparative analysis of land management and land cadastre curricula in Belarus, one may conclude that the legal and economical courses related to land and real property are underrepresented in all the Belarusian universities. Thus, it might be stated that there is no pure land administration education in Belarus. The analysed study programmes are either specialized in one of the activity field of surveying like, for example, the GIS or REM specialities, or they provide the graduates with insufficient knowledge in land law and economy (LC and LM specialities).

For the foreseeable future, it might be noted that development of land administration education in Belarus would move to the direction of technical surveying education. In particular, in two years, the LC speciality at state university in Polotsk will be substituted by the speciality in geodetical support of cadastre. Judging from this title, (since the curriculum is not yet fully developed), one may conclude that the land administration component of surveying education in Belarus would significantly decrease.

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BIOGRAPHICAL NOTES

Marina Vaskovich is a researcher at the Division of Real Estate Planning and Land Law of Royal Institute of Technology (Stockholm, Sweden). She made her basic studies in Geography and holds MSc. in land management. She previously taught land management subjects at Polotsk State University, Belarus. Her scientific interests lie in the area of land administration with focus on legal issues.

CONTACTS

Marina Vaskovich
Real Estate Planning and Land Law
Brinellvägen 1
Royal Institute of Technology (KTH)
100 44 Stockholm
SWEDEN
Tel. + 46 8 7908616
Fax + 46 8 7907367
Email: marina.vaskovich@infra.kth.se
Web site: http://www.infra.kth.se/FV/