

# **Human Resource Provision and Capacity Development: Recent Initiatives at Lantmäteriet in Sweden**

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## **SUMMARY**

Securing human resources (HR), building capacity, and implementing the potential of existing staff are vital for the development of any organisation or company, including the land surveying, cadastral and land management sectors. This raises questions concerning how to compete with others and what is the necessary level of capacity among current and future employees. Let us ask ourselves: who wants to become a surveyor today, and what makes him or her stay within the business? These issues seem to be familiar to many of the authorities and companies in our professional field around the world. There is likely a range of different answers depending on country-specific aspects.

Lantmäteriet (the Swedish mapping, cadastral and land registration authority) alone estimates a need for a hundred new employees annually over the next years in order to manage the ongoing change of generations and the increasing demand for services within certain areas. In addition, most municipalities and various regional and national authorities having land surveyors in their workforce are looking for new staff to their organisations. Besides this demand from the public sector, private companies within the property business are also in need of new staff. A major challenge is hence finding efficient ways to recruit new cadastral surveyors, geodesists, geodata specialists, lawyers, etc., and to keep them for a significant period of time. Lantmäteriet has therefore taken various initiatives during the last few years. Some activities target the whole organisation, while others are tailor-made to fit particular branches.

This paper presents several current and recent initiatives regarding HR provision and capacity development affecting Lantmäteriet's personnel. Examples are promotion activities at schools, teaching support to universities, internal training for new staff, continuous learning for experienced staff, mentorships, talent development programmes, and networking with other authorities. The paper also touches upon impacts so far and what is anticipated for the coming years.

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## 1. BACKGROUND

Securing human resources (HR), building capacity, and implementing the potential of existing staff are vital for the development of any organisation or company, including the land surveying, cadastral and land management sectors. This raises questions concerning how to compete with others and what is the necessary level of capacity among current and future employees. Let us ask ourselves: who wants to become a surveyor today? And what makes him or her stay within the business? These two questions seem to be familiar to many of the authorities and companies in our professional field around the world, and there is likely a range of different answers depending on country-specific factors.

The first question is closely related to educational aspects, and must be taken into consideration in strategic planning for employing young people. The universities and other educational institutions are of course key players too, as they provide the actual academic programmes or training. However, the public and private sectors need to clearly describe and communicate their demands to the decision-makers, whether those are general politicians or e.g. deans within the schools, in order to secure a sufficient number of students in the relevant branches.

The second question is another type of challenge, as it to a large extent concerns actions taken by the management in order to make the staff satisfied with their work situation. Different people are likely to appreciate different things, but for many of today's employees in Sweden components such as independent work and possibilities to develop professionally count as highly important. A stimulating work environment and flexible working hours are also generally mentioned as beneficial working conditions in surveys among staff.<sup>1</sup>

### 1.1 Recruitment challenges

In Sweden, Lantmäteriet (the Swedish mapping, cadastral and land registration authority) alone estimates a need for a hundred new employees annually over the next years in order to manage the ongoing change of generations and the increasing demand for services within certain areas. On top of that, municipalities, regional authorities and other governmental agencies involved in land surveying or land management are competing with Lantmäteriet for quite the same type of staff. Besides this demand from the public sector, private companies are also out there hunting, often offering higher salaries.

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<sup>1</sup> Author's experience from trade union engagement.

Another, broader challenge is the lack of land surveyors in parts of Europe that has been noticed by the European Union (EU). As a response to the problem the EU has initiated the GEoSkills+ project, running 2013-2015, to enhance the exchange of best practices and innovation between European countries regarding the differences in Europe’s (national) geospatial vocational education and training and the geospatial labour market.<sup>2</sup> The large number of non-standardised land surveyor educations in Europe makes comparison between them difficult and thus the recruitment of an otherwise available and movable workforce.<sup>3</sup>

**1.2 Lantmäteriet’s education profile**

The majority of Lantmäteriet’s employees of slightly more than 2,000 persons have an education background of 2 years or more of college/university studies. The second largest group has upper secondary school (high school) background. The third largest group implies some uncertainties in the statistics, since educational background of those employees are not registered at the HR unit. However, they are presumed to mainly have upper secondary school education, which would add to the previous group. Among the remaining slightly more than one tenth of the staff, there are those with compulsory school only, or college education shorter than 2 years. Lastly, a small number hold PhD degrees or have other research background.<sup>4</sup> See figure 1.

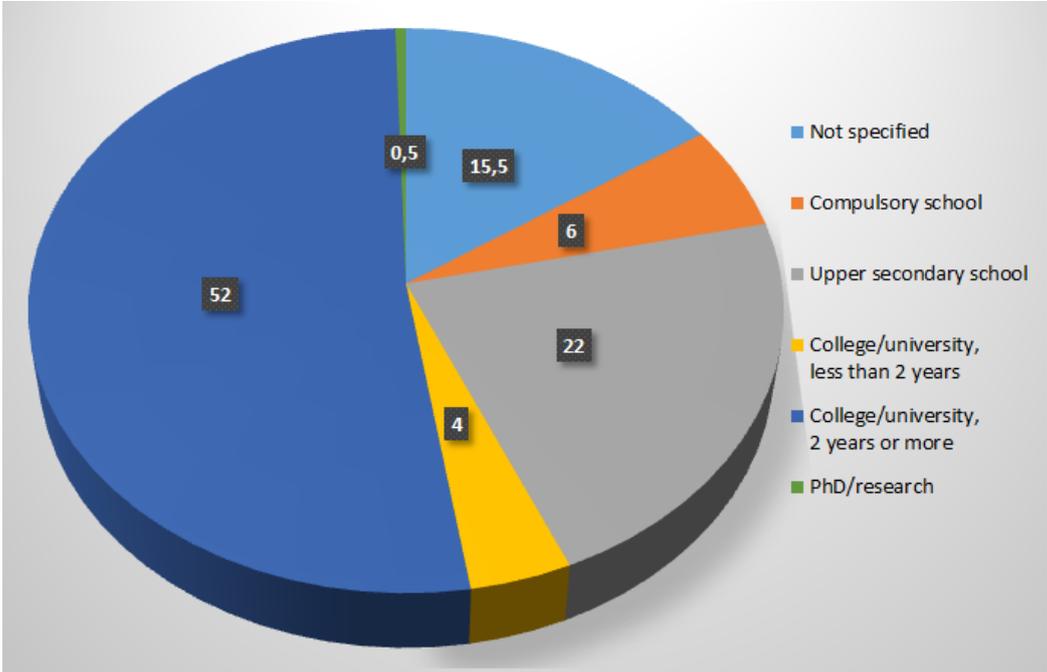


Figure 1. Levels of education at Lantmäteriet, January 2015. Source: Lantmäteriet’s HR unit

<sup>2</sup> See [www.geoskillsplus.eu/](http://www.geoskillsplus.eu/)  
<sup>3</sup> Information provided during the GeoSkills+ workshop in Haderweck, the Netherlands, 21-22 May 2014.  
<sup>4</sup> Lantmäteriet’s HR unit, email 2015-01-25. The statistics date from January 2015.

Despite the statistical uncertainties mentioned, more than half of the work force hence have 2 or more years of college/university education. Among younger employees, 5 or 3 year programmes are most common, as a consequence of educational reforms in Europe. The relatively large number of graduates is likely to be the result of the later years' tendency to mainly employ staff with master or bachelor degrees due to the increased complexity and use of geographical and cadastral data in connection with other data. It is expected that this focus on college/university education will continue.

### **1.3 Surveying education in Sweden**

Today, four colleges/universities offer MSc or BSc programmes in surveying, geomatics, land management, etc.: KTH Royal Institute of Technology (in Stockholm), Lund University, University West (in Trollhättan), and the University of Gävle. Furthermore, Karlstad University offers a two-year education in land surveying and cartography, and Chalmers University of Technology (in Gothenburg) offers a new BSc education in business development and entrepreneurship in the built environment, starting in autumn 2015. In addition, other colleges/universities run shorter programmes or single-subject courses in the same field.

As for law, computer science and other subjects that are also of interest for Lantmäteriet, there are various programmes and courses available at many colleges/universities around the country. Many of the programmes of interest to us are at master or bachelor levels.

## **2. RECENT INITIATIVES AT LANTMÄTERIET**

A major challenge for many employers in our field is to find ways to recruit new cadastral surveyors, geodesists, data specialists, lawyers, etc., and to provide them with further training and career opportunities in order to keep them for a significant period of time. Lantmäteriet has taken various initiatives during the last few years. Some activities target the whole organisation, while others are tailor-made to fit particular branches or tasks.

### **2.1 Activities for students at school and university**

#### **2.1.1 “Ambassadors” raising awareness**

Quite few young people are familiar with Lantmäteriet as an authority, our role in society and what career opportunities we can offer. For about a decade, until 2012, Lantmäteriet therefore used to allocate 15-50 mostly younger employees to act as “school ambassadors” a few days per year, visiting a wide range of schools. Their aim was to raise awareness of the authority among the pupils and students, and to inform them about our broad business activities and the ways to get a job with us.<sup>5</sup>

Since 2012, employer branding and marketing have been identified to be of even more explicit strategic importance. In order to reach a bigger number of young people, and to

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<sup>5</sup> Email from HR department, 2015-01-25.

coordinate and improve the marketing communication, two full-time “ambassadors” were employed in 2012. At some major events they are assisted by other colleagues, including management representatives, but most of the time they work on their own, following a detailed annual work plan. For example, during autumn 2013 to spring 2014 the “ambassadors” visited more than 130 compulsory and upper secondary schools, colleges/universities, conferences and other arrangements of interest. Two-thirds of the visits were carried out at compulsory schools throughout the country.<sup>6</sup>

For older students, the educational institutions sometimes arrange exhibitions to which they invite private companies and public sector actors. One such major example where Lantmäteriet recently participated was an upper secondary school exhibition in Stockholm, visited by approximately 22,000 students from the region who were soon about to choose what education to pursue in the future. Lantmäteriet had an exhibition stand manned with 6 “ambassadors”, together with 6 colleagues from municipal cadastral authorities.<sup>7</sup> A brochure labelled “You are needed!” (Lantmäteriet, 2014a) had been sent to all schools beforehand, as advertising. The students appreciated the authority’s on-site appearance, which enabled them to discuss various issues and get their questions answered.<sup>8</sup>

Regarding students at higher level, the “ambassadors” focus more directly on potential recruitment. Every year, Lantmäteriet participate in major exhibitions at the for our business most strategic colleges/universities. At such occasions we are normally represented by employees, managers and staff from the HR unit. The discussions touch upon opportunities for summer jobs, trainee posts, and ordinary employment positions. Another topic that many students are interested in is the chance to write their MSc or BSc theses in cooperation with us.

### 2.1.2 Master and bachelor level thesis projects

Lantmäteriet has a tradition of supplying research topics and providing spatial and other data for MSc and BSc thesis projects to students to work with. In such cases, an expert at Lantmäteriet normally also acts as a contact person for the student(s) and thereby complements the university supervisor. It is also possible for Lantmäteriet to supply a thesis supervisor, if agreed by the university. However, our experts cannot act as thesis examiners unless being (part-time) employed by the university due to Swedish regulations (Högskoleförordning, 1993). No costs are normally charged for being contact person, or for supplying data to students. This provision of free data is regulated in the Swedish national agreement of supplying spatial data for research and educational purposes (Lantmäteriet, 2014b).

The purposes for our engagement in thesis projects are many. It is a way of getting students acquainted with the geographical and cadastral data we supply and our role in society. Furthermore, our engagement presents Lantmäteriet as an interesting and attractive future

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<sup>6</sup> Email from HR department, 2015-01-25.

<sup>7</sup> In Sweden, 39 out of 290 municipalities are mandated to conduct cadastral procedures within their respective administrative area.

<sup>8</sup> Report on Lantmäteriet’s internal website 2014-12-02.

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employer and thereby secures our recruitment base for new cadastral surveyors, geodesists, geo data specialists, lawyers, etc. Our engagement is even a way to ensure continuous contact with the universities thus allowing knowledge transfer to our employees.

Our participation in thesis work is also a way of conducting (limited) investigations on themes of interest that do not fit within Lantmäteriet's own short term work plans. The internal resources allocated as contact persons and experts are normally less than what would be needed to carry out the investigations ourselves. In addition, it is beneficial for us to receive an external view on the topic that is looking on the task from a different angle.

Every term, a variety of thesis topic suggestions are published on Lantmäteriet's external website for students to apply.<sup>9</sup> Students are also encouraged to suggest topics for their thesis themselves. The students' expenses in regard to the thesis work, e.g. for study visits and other travel, are normally covered by Lantmäteriet. We usually also pay the students a fee when the thesis is approved by the university and handed over to us. Thesis reports are published on our website.<sup>10</sup> Finally, the students are expected to give a presentation of their results at Lantmäteriet to ensure a broad knowledge transfer into the organisation. During the last five years, we have been engaged in more than 70 master and bachelor level thesis involving more than 90 students.

### 2.1.3 Lecturing at universities/colleges

Lantmäteriet has a long tradition of cooperating with universities and other higher educational institutions. One way of cooperation is to supply experts lecturing in their field of expertise. An example is Lantmäteriet's participation in the University of Gävle's master level course in spatial data infrastructure (SDI) in the autumn of 2014, where seven experts lectured on the principles of the national Swedish geodata cooperation, data quality, metadata, data harmonization and the INSPIRE<sup>11</sup> directive.

The compensation charged by Lantmäteriet depends on the volume of preparation and teaching involved, e.g. whether it is a one-time participation in a course, lecturing in a series of courses, or planning/being responsible for a course (Lantmäteriet, 2014c). The compensation is not fully cost recovering, since the main purpose is to maintain good relations with the universities and initiate development within our areas of responsibility.

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<sup>9</sup> <http://www.lantmateriet.se/sv/Om-Lantmateriet/Jobb-och-framtid/Studerande/Examensarbete/Aktuella-examensarbeten/> Accessed 2015-02-15.

<sup>10</sup> <http://www.lantmateriet.se/sv/Om-Lantmateriet/Jobb-och-framtid/Studerande/Examensarbete/Avslutade-examensarbeten/> Accessed 2015-02-15.

<sup>11</sup> INSPIRE: Infrastructure for Spatial Information in the European Community (INSPIRE, 2007).

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## 2.2 Training for new employees

### 2.2.1 “Lantmäteriet Academy”

Internal training in the form of short courses, e.g. a couple of days, up to longer programmes of weeks or months, have for a long time been offered to new employees at Lantmäteriet, in order to introduce them to the routines and official tasks of the authority. Due to the increase in diversified educational backgrounds of the staff, and the development of new technologies, administrative systems and work processes, a great effort has been made in recent years to provide suitable training for all new employees.

This has been a particular challenge for the Cadastral Services Division, which is the biggest organizational group of approximately 800 people in some 60 offices around the country. Over the last decade, about 650 new employees in this Division and the 39 municipal cadastral authorities have passed a special programme sandwiching theoretical courses mainly at Lantmäteriet’s headquarters and practical work in the local office under supervision of a more experienced colleague. The aim of this programme – from 2012 called Lantmäteriakademin [Lantmäteriet Academy], stretching over 3.5 to 5 years – has been to make a syllabus for each cadastral surveyor, putting together a set of offered courses to meet his/her needs. In the planning of a person’s syllabus, his/her superior has the final word, as the training programme is a matter of both time and funding.<sup>12</sup> The great number of employees participating in the majority of the elements offered in the programme indicates that it is considered a good investment for someone who comes straight from college/university. Thanks to the programme, the employees get a well-structured initial work period, helping them to become efficient and confident officials in a relatively short time. During the later phases of the programme, the theoretical courses are fewer and the practical work in the form of handling cadastral procedures become more complex. Hence, the role of the supervisor is also changing along the way.

Within Lantmäteriet, a parallel process in the cadastral surveyors’ professional development is a recently introduced career ladder of four steps, relating to different levels of competence and hence authority to take legal and economic decisions (see Swensson, 2015).

### 2.2.2 Mentor programme for international export services

Lantmäteriet and the state owned consultancy company Swedesurvey have been involved in international cooperation projects since the 1980s; many within the frame of Swedish aid to developing countries. Many long-term project managers, short-term experts and other project staff have been recruited from the internal work force for these international export services projects. In order to meet the challenges of many experienced project managers’ retirement, and to secure a broad basis for future recruitment, Lantmäteriet has run three Mentor programmes over the last six years. The aim has been to offer a number of younger employees an experienced mentor each, to learn from and to possibly join in some short-term mission abroad. Besides that practical element, the trainees have been offered to partake in courses

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<sup>12</sup> Email from HR department, 2015-02-10 and 2015-02-12.

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provided by Sida (the Swedish International Development Cooperation Agency), adding more theoretical aspects of working with aid projects.

The first and second Mentor programmes, ran in 2008-2009 and 2011-2012 respectively, engaged 45 trainees and 30 mentors. An evaluation showed that the aims of the programmes were not quite reached, and that the impact was smaller than expected (Lantmäteriet, 2013). Therefore, a third programme with a modified scope and methodology was started in the autumn of 2014. This time there are nine trainees only, selected after a thorough process including interviews, and nine mentors, all active within Lantmäteriet's international export services. The activities are now focused on at least one compulsory mission abroad for each trainee during 2015. So far, the concept seems to be successful, and many of the trainees have already been involved in minor assignments such as study visits by foreign delegations.

### 2.3 Continuous learning

Training of staff is a continuous task assuring the right competence for the tasks to be carried out. Most training is carried out on a daily basis involving participation in internal and external courses. Lantmäteriet has e.g. during 2014 received additional state founding for competence increasing activities in the following areas:<sup>13</sup>

- Specification and quality assurance in procurement of areal photography
- Specification of IT development
- Employee exchange programs with municipalities and government agencies
- New techniques for automatic generalization and 3D visualization
- Data services
- Quality development in cadastre

We have for 2015 received additional funding for staff education in standardization and web-based cartography.<sup>14</sup>

The participation in relevant distant learning courses at universities is encouraged. An example is a distant learning course in SDI at the University of Gävle in autumn 2014, where specific arrangements were made for selected staff. Lectures could be attended during work hours, but homework should be done in the individuals' spare time.

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<sup>13</sup> Email from Lantmäteriet's HR-unit 2014-11-07.

<sup>14</sup> Email from Lantmäteriet's HR-unit 2014-11-07.

## **2.4 Professional development for experienced employees**

### **2.4.1 Talent development programme**

Talent management is a relatively new trend within strategic HR work, at least in Swedish public sector. In 2013, Lantmäteriet launched an internal initiative in order to highlight and offer a special development programme to twenty of the organisation's employees, identified as particular talents. Those employees, most of them between approximately 35 and 45 years old, had been selected through a procedure involving group managers, HR specialists and eventually the directorate. The aim of the programme was to secure future needs of competent managers and specialists, by providing those talents ways of professional and partly also personal development within the organization. The contents of the programme was a mix of external lectures about e.g. coaching and the importance of feedback, thorough assessments of the participants' professional and social skills, and group-work across the organisation. The final element was to report to the directorate about the findings and recommendations from the group-work, which touched upon issues of e.g. HR challenges, the need for improved internal communication, and the impact of new technologies.

### **2.4.2 PhD education**

Lantmäteriet has a tradition of financing industry employed PhD students being assigned to conduct research at Swedish universities. In 2013 it was decided as part of our research strategy to finance 4 employees as PhD students on a continuous basis. When such a position is open, a call of interest is announced within the organization for employees to apply. If a suitable person is found, the matter is discussed with a relevant university; the applicants must of course fulfil the university's formal requirements for becoming a PhD student. When approved, the research can be conducted full-time or part-time, depending on the wishes and needs of the parties involved. The employee is during his/her research still employed by Lantmäteriet, but devotes his/her time to research. Specific conditions may apply, e.g. that the student is exempted from lecturing at the university which is often a task for usual PhD students. The costs for e.g. literature, travels, and conference fees are normally covered by Lantmäteriet. The university's internal costs for e.g. supervision and the student's participation in PhD research courses are normally covered by the department where the research is taking place.

## **2.5 Institutional cooperation**

Recently a "network for learning" was established, consisting of some of Sweden's governmental authorities working with international export services. Much of such work is funded by Sida, but there are also projects done under the framework of the EU, the United Nations and the World Bank. Various task forces are now taking shape in this new network, one of which focuses on capacity development in practice and the need for tailor-made education among the Swedish authorities involved. The aim is to identify and clarify common needs of specific training for those employees who work for the various cooperation projects abroad, and to initiate such education. The course subjects may include project management,

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change theory, gender issues, and methods for successful project implementation in developing countries. Among the authorities in this task force are Lantmäteriet, Lund University, the Swedish Police and the Swedish Environmental Protection Agency. (Myndighetsnätverket, 2014)

### **3. CONCLUDING REMARKS**

Lantmäteriet's main resource is the capacity of its employees. There has during recent years been a wide range of activities to secure recruitment of new staff and to maintain a high level of knowledge among existing staff in order to be able to fulfil the tasks within our responsibility as a governmental authority. This strategic work is likely to continue, and possibly even evolve into a deeper cooperation with other authorities regarding educational initiatives.

### **4. ACKNOWLEDGEMENTS**

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## BIOGRAPHICAL NOTES

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Jesper M. Paasch is a researcher and developer at Lantmäteriet, the Swedish mapping, cadastral and land registration authority. He holds a MSc degree in Surveying, planning and land management, a Master of Technology Management degree in Geoinformatics, both from Aalborg University, Denmark, and a PhD degree in Real Estate Planning from KTH Royal Institute of Technology, Stockholm, Sweden. His thesis concerned the classification of real property rights and public regulations. He is chairman of the Swedish Standards Institutes technical committee on metadata for geodata and member of the FIG Joint Commission 3 and 7 Working Group on '3D Cadastres'. He is a Swedish delegate to FIG, Commission 3, and was a national delegate in the drafting team of the ISO 19152:2012 (LADM) standard.

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