

# Land Governance for Surveyors: the VGGT in the Curriculum.

Liza GROENENDIJK, The Netherlands, Francis ROY, Canada, Chethna BEN, Fiji, Mohsen KALANTARI, Australia and Walter Timo DE VRIES, Germany.

**Key words:** Professional Education, Surveying, Curricula, VGGT

## SUMMARY

Strengthening land governance in professional surveying curricula and academic research has been an important theme at the FIG Academic Members Forum. A major tool to achieve good land governance are ‘*The Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security*’, the VGGT.<sup>1</sup>

During the FIG Working Week in Christchurch, New Zealand, in 2016, the FIG Academic Members decided to form a working group ‘*Exploring the VGGT in Practice*’. The aim of the working group is to identify and strengthen the role of the surveying and land professional in the implementation of the VGGT. One of the activities by the working group is a study on how the VGGT are represented in the surveying curricula in order to support the FIG community in the implementation of the VGGT in the professional surveying education.

This paper addresses the outcome of the study and gives a first picture of how the VGGT are being addressed in professional surveying education. Case examples of programs and relevant course units are presented, interpreted and analysed using the theory of Bloom’s taxonomy of cognitive processes<sup>2</sup>. The study will inform the FIG community on how the VGGT, and land governance in general, are being addressed professional surveying education.

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<sup>1</sup> FAO (2012). Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security. Rome, FAO. On-line: <http://www.fao.org/nr/tenure/voluntary-guidelines/en/>

<sup>2</sup> Anderson, L.W. & D. Krathwohl (ed.) (2001). A taxonomy for learning, teaching, and assessing : a revision of Bloom's taxonomy of educational objectives. See also: <https://cft.vanderbilt.edu/guides-sub-pages/blooms-taxonomy/>

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## 1. INTRODUCTION

Land Governance has been one of the main themes within FIG over the last 10 years. In 2009, FIG together with the World Bank hosted the conference on *Land Governance in Support of the Millennium Development Goals: Responding to New Challenges*. This resulted in FIG's policy statement on Land Governance (WB/FIG, 2010). Many FIG events and initiatives supporting good land governance followed and resulted in several publications such as the recent FIG publication 'Fit-for-Purpose Land Administration' (FIG/WB, 2015). Land governance continued to be an essential element in FIG's Work Plan for 2015 – 2018.

A major tool to achieve good land governance are *The Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security (VGGT)*. The VGGT promote secure tenure rights and equitable access to land, fisheries and forests as a means of eradicating hunger and poverty, supporting sustainable development and enhancing the environment. The VGGT were prepared through negotiations by governments of countries from all regions of the world. The negotiations included participation by representatives of civil society, private sector and research institutes including FIG. The Committee on World Food Security officially endorsed the Guidelines on 11 May 2012.

FIG works closely together with FAO within the framework of implementing the VGGT. During the FIG Congress in Kuala Lumpur, Malaysia, in June 2014, the Members of the FIG Academic Forum agreed that the academic bodies have a role to play in advocating, disseminating, and implementing the VGGT; in mainstreaming them into academic programmes and research and that they should recognize their role as change agents. At the same time, the Academic Members noted the need for guidance and support in doing this.

Therefore, during the FIG Working Week, in Christchurch, New Zealand, May 2016, FIG and FAO continued to work together. The session of the Academic Members Forum was dedicated to the VGGT with the intention to make a further step in their implementation in our surveying education programmes and research activities. The Academic Members decided to form a Working Group 'Exploring the VGGT in Practice' with the aim to identify the role of the surveying and land professional in the implementation of the VGGT and how this is reflected in the surveying curricula.

One of the activities by this Academic Forum Working Group is a study on how the VGGT are represented in the surveying curricula. This paper presents the outcome of an exploratory study involving cases from 8 universities and provides a current picture of how the VGGT are being addressed in professional surveying education.

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Land Governance for Surveyors: the VGGT in the Curriculum. (8602)

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## 2. METHODOLOGY AND CASES

### 2.1 Interpretive analysis

The study aims to explore how the VGGT are being addressed in professional surveying education. It was decided to do an interpretative analysis of a selection of cases. This would result in a first picture of the surveying curricula and if/and how they go about the VGGT in their programs. The theory of Bloom's taxonomy of cognitive processes has been proposed for the assessment of the level of complexity of the learning objectives of the programs addressing the VGGT.

### 2.2 Selection of cases

For the selection of cases, the members of the Academic Forum Working Group 'Exploring the VGGT in Practice' were invited to send a description of their education programs. A template was used to guide the case description. As we were interested in a more global spread of our cases, we invited some other FIG Academic Members with an interest in the VGGT in particular. This is of course a very biased group as they all have shown an interest in the VGGT in academic education.

Therefore, also the chairs of the FIG Commission 2 working groups were invited to contribute with a description of their programs and how the VGGT are addressed, using the template in table 1. Except one, they had not been involved in the work by the Academic Members Working Group on the VGGT.

Title of course/program Institution/university	
Aim of the program	<i>Aim and objectives of program Level of post-secondary education Rationale for including the VGGT in the curriculum of the course/program</i>
Level(s) the VGGT are being addressed in the curriculum	<i>The didactical level(s) the VGGT are being addressed (program/course, and/or specialization/or module/subject level; and/or lecture; and/or example in lecture. MSc research. Time involved/importance in the program</i>
Elements of the VGGT being addressed	<i>Elements/aspects of the VGGT being addressed Implicit and explicit VGGT in the learning outcomes.</i>
Teaching methods	<i>Indication of teaching methods/approaches applied for teaching the VGGT</i>
Lecture materials	<i>Lecture materials supporting teaching the VGGT. Main External resources: literature, exercises, videos, internet resources, guest lectures, etc. Internal teaching resources developed, lecture materials, exercises, handouts etc.</i>
Example exercise	<i>Description of favorite exercise or example exercise</i>

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Main references	<i>Key references for teaching the VGGT</i>
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Table 1 Template used for the case descriptions

### 2.3 Overview of cases

In total 8 academic members submitted a description of their programs according to the given template. The following overview presents the universities and their programs:

	<b>Country</b>	<b>University</b>	<b>Program</b>
1	Australia	The University of Melbourne School of Engineering Melbourne (UMelbourne)	Master of Engineering (Spatial) (MEng)
2	Canada	Université Laval Department of Geomatics Sciences Québec (ULaval)	Master of Geomatic Sciences (MSc) Doctorate of Geomatic Sciences (PhD)
3	Fiji	The University of the South Pacific School of Land Management and Development Suva (USP)	Bachelor of Commerce (Major in Land Management) (BSc)
4	Ireland	Dublin Institute of Technology College of Engineering & Built Environment Dublin (DIT)	Master in Geospatial Engineering (MSc)
5	Netherlands	University of Twente Faculty of Geo-information Sciences and Earth Observation Enschede (ITC)	Master in Geo-information Sciences and Earth Observation for Land Administration (MSc)
6	Russian Federation	Moscow State University of Geodesy and Cartography Moscow (MIGAIK)	Master in Land management and Cadastres (MSc)
7	South Africa	University of Cape Town School of Architecture, Planning & Geomatics Cape Town (UCT)	Bachelor in Geomatics (Surveying or Geoinformatics) (BSc)
8	Trinidad and Tobago	University of the West Indies Faculty of Engineering, Dept. of Geomatics Engineering and Land Management St. Augustine (UWI)	Bachelor in Geomatics (BSc) Bachelor in Land Management (Valuation) (BSc) Post-Graduate Diploma in Land Administration

Table 2 Overview of responding universities and their programs

### 2.4 Observations

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As explained, we invited also the chairs of the FIG Commission 2 working groups to send the description of their surveying programs. However, initially they did not respond. After contacting them it became clear that two of them did not respond because their programs did not include the VGGT's in their curriculum. One of them we had to explain what are the VGGT's. We invited them still to respond, even when the VGGT are not being addressed in their programs. One of them did.

Surprisingly not all our FIG Academic Members are aware of the VGGT, even when active in FIG Commission 2. Or they are aware, but never paid much attention as it is found not being relevant for their education programs.

### **3. AIM OF THE PROGRAM**

#### **3.1 Aim**

The received descriptions of higher education programs in surveying showed a variety of names ranging from Geomatics, Geomatic Sciences, Geomatics in Surveying, Geospatial Engineering, Spatial Engineering, Land Administration, Land Management, Land Management and Cadastre, and Commerce. After an analysis of the aims of these programs two main categories of programs in the surveying domain could be recognised:

- Geomatics oriented; or
- Land Administration / Land Management (including Valuation / Cadastre) oriented.

#### **3.2 Level of education**

The programs are offered at PhD, MSc or Master level, BSc level, or offered as courses (in the case of BSc in Commerce program. Most programs are offered in English; one in French and one in Russian. Some are typical national programs, other also focus on international students, or are regional oriented

#### **3.3 Rationale for including the VGGT in the curriculum**

All programs, except one, include the VGGT in their curricula. Both the geomatics and the land administration/land management oriented programs include the VGGT in their curricula. It is in the geomatics domain that one program does not address the VGGT for the following reason:

- Not included as program concentrates on new technologies in the capture and delivery of spatial data (DIT)

The other programs all cover the VGGT in their curricula and for the following reasons:

- To be eligible to register as a licenced surveyor with the Surveyors Registration Board of Victoria, students must complete a set of spatial subjects including land administration system, land law; land development; and cadastral surveying. The VGGT are part of land administration subject (UMelbourne)

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- The VGGT is an internationally supported guide that can serve as a benchmark for the national professional to review practices he/she is required to perform and to understand the role of the land surveyor in land administration (UWI)
- The VGGT is a synthesis of many different best practice statements and therefore a useful learning and thought provoking tool (UWI)
- Good governance, sustainable development, pro-poor and gendered responses to land are essential in our practice environment in Africa where legal pluralism has to also be accommodated (UCT)
- The VGGTs are part and parcel of teaching land policy in the course along with good governance indicators, SDGs etc. (UCT)
- Critical to practice in Africa. But only students who become cadastral surveyors, work for the state, or are involved in land reform and policy review may put it into daily practice (UCT)
- As part of broadening the mind of the otherwise technically-focused degree program, it is of great importance (UCT)

### 3.4. Observations

Higher education programs in the surveying domain can be categorised in two main categories: Geomatics oriented, or Land Administration/Land Management oriented.

All programs, except one, include the VGGT in their curricula. This high number was to be expected as most respondents showed already an interest in the VGGT. Still it is important to notice that both the geomatics and the land administration/land management oriented programs include the VGGT in their curricula.

However, it is in the geomatics domain that one program does not include the VGGT. Looking at the rationales for including the VGGT or not including the VGGT in the programs in the geomatics domain, there seem to be two different contradicting views:

- A. Not important: Not included as program concentrates on new technologies in the capture and delivery of spatial data (DIT).
- B. Very important: As part of broadening the mind of the otherwise technically-focused degree program, it is of great importance (UCT). A useful learning and thought provoking tool (UWI).

This observation needs further discussion within FIG involving a broader set of surveying programs in the geomatics domain. Also, the question pops up if geographical location could play a role in how important the VGGT is for the surveying professional and thus get a place in the educational programs, as viewpoint A) relates to Ireland and B) to South Africa and the West Indies.

## 4. LEVEL(S) THE VGGT ARE BEING ADDRESSED IN THE CURRICULUM

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The VGGT are introduced into academic curriculums in three different ways: it can be defined as a program's objective, a course's topics, or a student research project's item. According to the eight cases documented and compiled, the VGGT are mostly presented to students within specific courses, being generally the principal topic of one or two classes. They are not specifically defined as programs' educational objective. Also, the VGGT are being addressed mainly at graduate courses' level and oriented towards land surveyors and land managers' education and training.

#### 4.1 Graduate program level

According to the eight academic cases received, the VGGT are mostly introduced within graduate degree courses: ULaval (M.Sc. and Ph.D.), UMelbourne (M.Eng.), MIGAIK (M.Sc.), ITC (M.Sc.), and UWI (Post-Graduate Diploma). The VGGT topics are specifically addressed in some Land Administration and Cadastral Systems' graduate courses and training activities. In these courses, the VGGT (and generally its specific attributes) are addressed as follows:

- ULaval: Two classes (over a total of nine) of an elective *Graduate Seminar in Land Administration* are specifically dedicated to VGGT, specifically the responsible governance of land tenure and the implementation of the VGGT. Students must write a term-paper addressing a VGGT related issue.
- UMelbourne: Assisting material in preparing the assignments.
- MIGAIK: Integrated at program, specialization, and mostly at discipline (course) level, as well as at module or topic level. They are introduced, explicitly and implicitly, in the whole specialization program.
- ITC: Integrated at program, specialization, and module level. They are introduced, explicitly and implicitly, in the whole specialization program. Also, they are integrated in Continuous Professional Development activities, as separate modules (short courses).
- UWI: Part of two modules (Introduction to Land Administration / Cadastral Systems) out of seven, corresponding to one of about six topics in each of the two modules.

Otherwise, DIT indicated that the VGGT are not specifically addressed within their Master's program in Geospatial Engineering.

#### 4.2 Undergraduate course level

Three academic institutions (over 8 respondents) expressed that the VGGT are addressed at the undergraduate level, namely within bachelor's degree courses: USP (B.Sc. with a major in land management), UCT (B.Sc. of Geomatics in Surveying), and UWI (B.Sc. in geomatics, B.Sc. in Land Management (Valuation)).

More specifically, the VGGT are integrated as follows:

- USP: both courses are first-year level (one semester duration), focusing on land management and development, and GIS and cadastral survey techniques).
- UCT: Module dealing with Land Policy, where the aspects of good governance are included in either an assignment or in a workshop. These are also touched on and referred to in a workshop on conflict resolution relating to rural African communal land.

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- UWI – BSc in Geomatics: part of one module (Cadastral Systems) out of 33 included in the program, corresponding to one topic over 7 in that module.
- UWI – BSc in Land Management (Valuation): part of two modules (Introduction to Land Administration / Cadastral Systems) out of 33 included in the program, corresponding to one topic over 7 in each of the two modules.

### 4.3 Graduate Students' Research project

In all graduate programs, the VGGT are integrated within the fundamental references that could be used by students for their research project. Some academic institutions have clearly identified the responsible governance of land tenure as a field of research:

- ULaval: Students may choose a research problem embedded in good land governance and VGGT topics.
- ITC: Many students do their MSc project on a topic underpinning the VGGT.
- MIGAIK: Some master students do their MSc theses on a topic within the VGGT scope.
- UCT: Some research projects require students to know about, investigate, critique and extend various models such as the VGGT.

## 5. ELEMENTS OF THE VGGT BEING ADDRESSED AND LEARNING OUTCOMES

The VGGT are addressed as a whole (a general point of view on the responsible governance of tenure) or according to specific attributes (each content items taken individually). Those attributes are mainly related to Land Administration functions and structures, such as Land Tenure, Land Value, Cadastral Systems, Regional Issues, Urban Development. Those elements cover a large scope of concerns and they aim to specific learning outcomes:

- ULaval: The VGGT's objectives, issues and contents are presented in class. They are also analyzed within a wider scope, addressing good land governance, pro-poor land administration, formalization of informal land rights, poverty reduction and 'dead capital' legal recognition, gender equity, sustainable development, land information system, STDM. Specific cases of VGGT implementation are reviewed. Furthermore, the class is asked to discuss the issues raised by data quality in the application of the VGGT.
- UWI – all programs: Explicitly, the land administration structures are addressed in the module 'Cadastral Systems'. Implicitly land tenure, and all the other elements of the VGGT are addressed in topics such as 'Responsible governance in cadastral systems and cadastral reform - the concept and the process'. As learning outcomes, students should be able to describe the 'Best practice guidelines for Responsible Governance of Tenure in Land Administration' and to develop 'Responsible governance in cadastral systems'.
- UCT: The VGGT is one aspect of a broad range of related aspects – SDGs, New Urban Agenda, South African land policy, STDM, Land rights modelling, pro-poor land

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administration, gendered and scalable responses, etc. The learning outcomes are assessed through observing student interaction in class activities as well as through a formal test and examination.

- ITC: The VGGT are explicitly being addressed in modules related to ‘Land Policy and Land Management’, and ‘Transparency in Land Administration’. It is further referred to as part of the global agenda together with the SDG’s and the New Urban Agenda. Implicitly the VGGT are addressed by topics such as: land governance, LGAF, pro-poor land administration, innovative approaches and fit-for-purpose land administration, women and land rights, reliable and affordable land information systems, STDM.
- MIGAIK: The VGGT issues are covered by a special course dedicated to ‘Actual problems of natural resource law’. It aims to provide master students with integrated knowledge of the most urgent problems of legal regulation and law enforcement activities in the field of nature management. Explicitly, the VGGT are being addressed in two courses: Legal problems of origin and termination of the right to use nature; Legal problems of establishing and collecting environmental fees. Implicitly, all VGGT topics are also addressed as part of the global agenda within such courses as: Economic and legal basis for environmental protection and rational nature management; Legal protection of the environment; Administrative law; Land law; Forestry Law; etc.
- USP: The VGGT are addressed implicitly and explicitly, within the two following courses:
  - Principles and Problems of Land Tenure, where students are introduced to responsible governance of tenure issues, learn how to address disputes and conflicts over the tenure of natural resources, and acquire knowledge about monitoring and promoting policy changes on governance of tenure.
  - Introduction to Geomatics, where students examine spatial planning issues in the context of responsible governance of tenure, and develop skills in spatial information management.
- UMelbourne: The VGGT are provided to students as general guidelines particularly for assignments that deal with developing nations.

The integration of the VGGT within education activities demonstrates a clear engagement of academic institutions towards the responsible governance of land and its contribution to every human wealth, security, and prosperity. These Guidelines are introduced to students implicitly as a whole (a reference that they must know and learn), and explicitly as specific topics and issues related to land, people, nature, society, and institution.

## **6. TEACHING METHODS AND LEARNING APPROACHES**

### **6.1. Teaching methods**

A range of teaching methods is applied in the courses on the VGGT. Most of the programs do apply a combination of teaching methods. In the UM case, the VGGT are not taught directly; the

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document on the VGGT is provided to students as reading material in the topic land administration. The table 3 presents an overview of the variety of methods used in teaching the VGGT:

<p>Lectures</p> <ul style="list-style-type: none"> <li>• Lectures in class</li> <li>• eLearning platform with tutorials</li> <li>• Guest lectures by invited national/international specialists (face to face/ online)</li> </ul> <p>Notes</p> <p>Exercises and assignments</p> <p>Workshops and seminars</p> <p>Games and role-plays</p> <p>Quizzes</p> <p>Class discussions</p> <p>Research</p> <ul style="list-style-type: none"> <li>• Fieldwork and data collection</li> <li>• Small group investigations and reporting</li> <li>• MSc and PhD research</li> </ul> <p>Reading</p> <ul style="list-style-type: none"> <li>• Preliminary readings prior to class</li> <li>• Post-readings after class</li> <li>• Additional reading</li> </ul> <p>Student presentations</p> <p>Paper or essay writing</p> <p>Assessments</p>
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Table 3 Methods applied in teaching the VGGT in surveying programs

## 6.2 Learning approaches

One learning approach stands out when analysing the different programs. The VGGT are first introduced in class. This is done in various ways involving lectures, guest lectures by specialists, reading, class discussions, games, role plays and exercises. Often active formats are used such as a workshop or seminar, combining reading assignments with group discussions and plenary presentations. After the introduction to the VGGT, it is noticed that students do a kind of gap analysis or an assessment of the integration of the VGGT in their own country (ITC, ULaval, MIGAIK), their community (home town/villages) (USP), regional countries (UWI) or using a case study (ITC) (see table 4):

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- ..., the class must assess the degree of integration of the voluntary guidelines into Quebec's land tenure system (ULaval)
- The student is required to compare land policies with VGGT suggestions and guidelines (UWI)
- Most appropriate in the case of the VGGT are reading assignments in combination with group discussions and guided plenary discussions, aiming at gap identification, country analysis and comparison (ITC)
- The student is required to compare land administration systems and land tenure in regional countries with VGGT suggestions and guidelines (UWI)

Table 4. Examples of the Gap Analysis approach in teaching the VGGT as expressed by respondents

### 6.3. Observations

All programs use a remarkable variety of teaching methods. Most use a kind of blended learning approach combining different teaching methods including eLearning. Innovative teaching approaches are applied in teaching the VGGT in surveying programs.

Group work and group discussions seem to be common methods in teaching the VGGT. Students are triggered to think critically and reflect.

The learning approach for teaching the VGGT can be described as 1) introduction to the VGGT and 2) applying the VGGT in a practical situation (case study or country) and 3) assessment or gap analysis.

## 7. ORIGIN OF LECTURE MATERIALS/ REFERENCES

### 7.1. Lecture materials and resources

The main teaching resource is the original document on the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security (FAO, 2012). Even in the case of minimum attention in the curriculum (UMelbourne) it is recommended as reading material. The University of Laval uses the French and Spanish versions; MIGAIK makes use of Russian translation. The other programs use the English version. One program (USP) mentioned to use the FAO ELearning Courses on the VGGT.

Next to the VGGT original document and related eLearning resources, use is made of online learning material, from FAO, UN Habitat GLTN, FIG, ILC, World Bank, ESRI, the LandPortal, UKAid and other NGO's, you tube and online media (newsletters/ newspapers).

Not only use is made of particular VGGT resources but also of those referring to good land governance and related fundamental concepts such as land tenure, land rights (including women and

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land rights, indigenous land rights, customary and pastoral land rights), land law, land management and land reform, state registration of real property, large scale land acquisitions and economic development. For addressing general land administration topics, the book of Williamson *et al.* (2010), *Land Administration for Sustainable Development*, is considered a valuable resource.

The use of lecture material related to typical national issues are mentioned by UCT (various South African policy and legal documents, books and academic papers) and MIGAIK (Russian Legal Database Consultant Plus). Typical regional issues and resources: ULaval has Latin American students and use relevant learning resources in Spanish. Also UWI has regional focus.

The digital library of the university is important for searching for scientific references as mentioned by ITC, ULaval, MIGAIK. Although not mentioned specifically it is expected that this also is the case for all other universities.

Learning material is also developed by the universities themselves, such as lecture notes, handouts and exercises (almost all), games (ITC, MIGAIK) and quizzes (USP).

## **7.2. Observations**

It is obvious that the original VGGT document is used by all universities teaching it. The VGGT are often not addressed in isolation. Land governance related learning resources complement the VGGT.

Lecture notes, handouts and exercises are developed by the universities to fit their particular teaching requirements. Some also developed games, role plays and/or quizzes.

The Internet seems to be the main supplier of learning material. Important are the FAO and UN Habitat GLTN sites. But depending on the focus of the courses, the orientation (national, regional or international) and/or the language, the universities use a range of internet resources: documents, reports, books, training packages, (parts of) online courses, you tube, scientific papers, online media.

## **8. EXAMPLE EXERCISES**

Some Academic Members have presented examples of real exercises that their students must realize within their academic curriculum. These exercises show a broad range of learning objectives and cognitive processes, as identified in Bloom's Taxonomy (presented in section 9). Those exercises are generally focused on evaluating a specific land administration and tenure system using the VGGT as an analysis framework, for identifying forces and weaknesses, and proposing elements of solution. In some cases, students are asked to write an essay on a current problem or issue affecting the region.

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- ULaval – *Case study using VGGT as a framework*: This semester work aims to help the student to grab and describe the land governance system of a specific country, by defining, analyzing and explaining its main characteristics, weaknesses, problems and issues, and identifying possible solutions (ranging from politics, organization, and geomatics). This work must be carried out using the VGGT as an analytical tool: the outcomes are presented according to each principle set out in the VGGT. The analysis must be illustrated with specific examples (drawn from case studies). The proposed solutions must be justified and discussed. (translated from French)
- UWI – *Evaluation of one land related issues and recommendations*: Evaluate the land policy, land administration, land tenure, cadastral system, or other system in a particular country in the region against the guidelines in the VGGT for gaps, compatibilities. Recommend changes to the system to bring it in line with the VGGT.
- ITC – *Land development project evaluation in a specific country*: Consider one major land development project that resulted to expropriation in your country. Give an online link (to newspaper, you tube video, or other source) about the project. Use the cases in your team as basis for your reporting on the below questions:
  - Describe the reason for land expropriation.
  - How did the land expropriation/acquisition procedures adhere to FAO’s Voluntary Guidelines?
  - Answer by discussing 3 key issues in the VGGT that the expropriation process adhered to or did not adhere to. Maintaining a comparative approach to answering the question, indicate which key issues (in the VGGT) you are arguing about.”
- MIGAIK – *The procedure of granting and monitoring the use of the state lands as the main owner of land resources under the legislation of the Russian Federation*: Examine the project documentation of any major project related to the provision of land from the state land. Using the norms of the Land Code of the Russian Federation and other legislative acts, analyze the grounds, procedure, and conditions for granting a land plot, as well as subsequent control over its use and protection. Compare the key principles of the national legislation with the VGGT. (translated from Russian)  
 Answer the following questions:
  1. What are the grounds for the procedure for granting a land plot from the state-owned land on the right of ownership and other rights provided for by the land legislation of the Russian Federation?
  2. What are the powers of the state authorities exercising state land supervision when carrying out inspections of compliance with the designated purpose and permitted use of the land plot, as well as requirements for land protection?
  3. What are the grounds and procedure for the possible withdrawal of this land from the state authorities in view of non-compliance with the requirements for its use and protection?

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4. To what extent national provisions of the Russian Federation reflect the VGGT principles and ideas (explain your position)?
- USP – *Applying the VGGT and analysing a land related situation*:
    - Course ‘Principles and Problems of Land Tenure’: Looking at Pacific tenure system from your home country, examine the governance structure of the village/town you are from and analyze whether it constitutes of the five principles of responsible governance.
    - Course ‘Introduction to Geomatics’: Identify the tasks and responsibilities of a surveyor and how they can contribute to responsible governance?
  - UMelbourne – *Assignment in Land Administration*: As part of the assignments, students are required to design a land administration system for a given country. For a developing country, we recommend using VGGT.

Finally, the Academic Member from the University of Cape Town presented a comprehensive exercise that asks each student to write an essay on Aboriginal Land Tenure in South Africa and its Potential Reforms. Instructions to students are detailed as follows (table 5):

**Aims:** After completing this assignment, the student should have improved his(her) research methods and essay writing skills. The student will have further knowledge of land issues in Southern Africa and should be able to research and critique current policy and practice in a coherent and structured argument.

**Topic:** Aboriginal/indigenous land rights in South Africa

**Explore:**

- What indigenous/aboriginal means and which peoples in South Africa?
- Who would qualify as indigenous people in South Africa (in principle and the names of groups)?
- How aboriginal/indigenous claims (as included in the amendment act) differ from claims based on restitution for those dispossessed since 1913 (original act, un-amended)?
- Whether such claims are supported or not by:
  - Policy;
  - Statutes;
  - Case law.
- The essential elements of a successful claim are:
  - e.g. Group vs individual claims, history of settlement, tradition/culture, proof of indigeneity etc.
  - Include a comment on whether the claimants can retain a nomadic lifestyle or whether they have to be settled on a particular land area.
- The role of Geomatics in indigenous/aboriginal claims and the evidence which may be presented in support of such claims.

**Instructions:**

- Length: 2000 word ( $\pm 200$  word) excluding title, name and references.
- It may be helpful to start off looking up some definitions so that you have a better understanding before reading further (definitions do not need to be included in the essay although the first two may be helpful):
  - Indigenous and aboriginal;
  - Indigeneity: <https://johansandbergmcmguinne.wordpress.com/official-definitions-of-indigeneity/> ;
  - Tradition vs Culture vs Customary land rights and tenure vs Communal land rights and tenure (NB: don't get confused between customary tenure systems and indigenous tenure/rights – indigenous rights can be customary/traditional, but not all customary/traditional rights/tenure is indigenous – see definitions above.);
- Indigenous land and natural resource rights vs western concepts of land ownership.

**References:** A list of references is provided.

Table 5 Example of exercise in the framework of teaching the VGGT at UCT

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## 9. TEACHING THE VGGT AND BLOOM'S TAXONOMY

### 9.1. Blooms taxonomy of cognitive processes

The way the VGGT are being addressed in the surveying curricula under study, has been analysed against the framework based on the theory of Bloom's taxonomy of cognitive processes, commonly known by education specialists as Bloom's Taxonomy. The framework consists of six major categories: Knowledge, Comprehension, Application, Analysis, Synthesis, and Evaluation. While each category contains subcategories, all lying along a continuum from simple to complex and concrete to abstract, the taxonomy is popularly remembered according to the six main categories. In 2001, a revision of Bloom's Taxonomy has been published (Anderson & Krathwohl, eds., 2001). In the revised taxonomy, knowledge is at the basis of these six cognitive processes, but its authors created a separate taxonomy of the types of knowledge used in cognition.

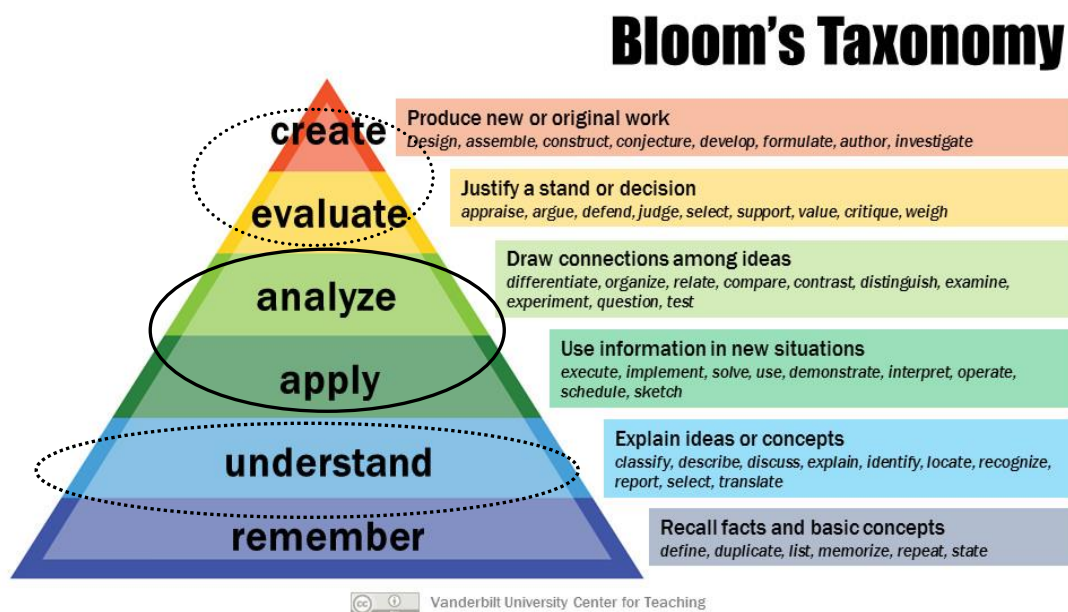


Figure 1 Learning objectives and learning approach assessed against Bloom's Framework of Cognitive processes. (Picture from Vanderbilt University Center for Teaching, accessed 31.03.2017).

### 9.2. Teaching the VGGT and Bloom's taxonomy

Bloom's taxonomy serves as a useful framework to analyse the learning objectives and learning approaches applied in implementing the VGGT in the surveying curriculum. The learning objectives and exercises of the different programs have been assessed against the six cognitive levels of Bloom's Framework (figure 1). The circles in figure 1 provides an indication of the level

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of complexity of the learning objectives for teaching the VGGT in surveying education. We noted the following:

1. *Remember*. Required knowledge of underlying concepts such as: land tenure, land rights and land law, land governance, land policy, sustainable development. Not in all courses; for some it assumed students already know, for others it is part of teaching the VGGT. Memorising or repeating the VGGT does not seem to be part of the learning objectives.
2. *Understanding*. Fundamental for all courses; first step in learning about the VGGT. Students should be able to explain and discuss the principles and objectives of the VGGT.
3. *Apply and Analyse*. Typical exercise, gap analysis, assessment cases using VGGT. Apply the VGGT in a real situation or case study, followed by critical analysis. These are the levels of cognition that the majority of universities intend to achieve when teaching the VGGT.
4. *Evaluate and Create*. Evaluate relevant parts of the VGGT and provide suggestions for inclusion in policies, land law or geomatics and cadastral practices. This level of cognition is intended to be achieved in MSc and PhD research related to the VGGT.

## 10. SUMMARY OF FINDINGS

All programs, except one, include the VGGT in their curricula. This high number was to be expected as most respondents showed already an interest in the VGGT.

The programs are offered at PhD, MSc or Master level, BSc level, or offered as courses.

Most programs are offered in English; one in French and one in Russian. Some are typical national programs, other also focus on international students, or are regional oriented.

Both the geomatics and the land administration/land management oriented programs include the VGGT in their curricula.

It is in the geomatics domain that one program does not address the VGGT.

The VGGT are introduced into academic curricula in three different ways: it can be defined as a program's objective, a course's topics, or a student research project's item.

The VGGT are mostly presented to students within specific courses, being generally the principal topic of one or two classes. They are not specifically defined as programs' educational objective.

The VGGT are being addressed mainly at graduate courses' level and oriented towards land surveyors and land managers' education and training.

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The VGGT are addressed as a whole (a general point of view on the responsible governance of tenure) or according to specific attributes (each content item taken individually).

The VGGT are addressed in the context of good land governance and its consequences for data quality, cadastral systems, spatial information management, and/or law (administrative law, land law, forest law).

All programs use a variety of teaching methods. Most use a kind of blended learning approach combining different teaching methods including eLearning. Innovative teaching approaches are applied in teaching the VGGT in surveying programs.

Group work and group discussions seem to be common methods in teaching the VGGT. Students are triggered to think critically and reflect.

The original VGGT document is used by all universities teaching it (English, French, Spanish and Russian versions). Land governance related learning resources complement the VGGT.

Lecture notes, handouts and exercises are developed by the universities to fit their particular teaching requirements and context. Some also developed games, role plays and/or quizzes.

Internet is main supplier of learning material. Important are FAO and UN Habitat/GLTN sites.

Exercises are generally focused on evaluating a specific land administration and tenure system using the VGGT as an analysis framework.

The VGGT in the surveying curricula are addressed at all levels of cognition as in Bloom's Taxonomy of cognitive processes. But in particular at the advanced levels of Applying and Analysing.

## **11. CONCLUSION**

The VGGT were adopted and published by FAO in 2012. Since then, many academic institutions have shown a keen interest in this publication, and specifically for its education scope and potential. It can be used to reach each level of Bloom's taxonomy, in order to present, understand, question, and renew a wide range of land related issues. Five years after the launch of the VGGT, its content is getting integrated and addressed progressively within academic curriculum and research activities.

## **12. IDENTIFIED DISCUSSION ITEMS**

Higher education programs in surveying show a variety of names.

- Is this a problem?
- How should it be addressed?

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Higher education programs in the surveying domain can be categorised in two main categories: Geomatics oriented, or Land Administration/Land Management oriented.

- Do you recognise this?
- This should be acknowledged by FIG.

Not all FIG Academic Members are aware of the VGGT.

- Is this generally true?
- And what should be done about it?

Looking at the rationales for including the VGGT or not including the VGGT in the programs in the geomatics domain, there are two contradicting views: a) not important to address the VGGT and b) very important to address the VGGT.

- What is the position of FIG and its professional members about the VGGT as part of the surveying curriculum?

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a private company as a specialist in land management. He participated in several projects of cadastral reforms in Latin American countries.

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