

# **Opportunities for fostering development of academic networks in Asia and the Pacific through the FIG Asia Pacific Capacity Development Network**

**Robert SARIB, David MITCHELL, Australia, and Dimo TODOROVSKI, Netherlands**

**Key words:** surveying education, regional networks, knowledge sharing, Asia, Pacific

## **SUMMARY**

In many regions, higher education in surveying faces capacity challenges, and have limitations in access to information. It is well established that regional networks of higher education institutions are proven platforms for knowledge sharing and improved education experiences. In 2015 the FIG Council established the Regional Capacity Development Network to "Ensuring the Rapid Response to Change Ensuring the Surveyors of Tomorrow" by establishing a global network operationalised on a regional basis. The mission of the FIG Asia Pacific Capacity Development Network (AP CDN) is to enable an environment of land, marine and "space" professionals to effectively provide innovative, reliable and best practice solutions to address the regional, social, economic, environmental and technological challenges associated with global geospatial trends, our rapidly changing and complex world. This paper explores opportunities for the FIG Asia Pacific Capacity Development Network to help support and foster further development of academic networks in the Asia and Pacific region.

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## **INTRODUCTION**

The 1948 United Nations Universal Declaration of Human Rights recognised the importance of higher education as a human right stating: “higher education shall be equally accessible to all on the basis of merit” (UN 1948, Art. 26, paragraph 1). Later, the 1976 International Covenant on Economic, Social and Cultural Rights makes a similar commitment to equal access to higher education “on the basis of capacity, by every appropriate means, and in particular by the progressive introduction of free education” (UN 1976, Article 13 2c).

Higher education in the global south is achieving renewed attention, as recognised in the post-2015 Sustainable Development Goals (SDGs). The SDGs include a specific higher education target that calls for States to: by 2030 “ensure equal access for all women and men to affordable quality technical, vocational and tertiary education, including university” (UN 2015). Adding to the renewed emphasis on higher education is better understanding of the benefits of higher education to individuals and the contribution to economic development and poverty reduction (Ilie and Rose, 2016).

However, surveying higher education in the Global South faces capacity challenges, and has limitations in access to information and knowledge sharing. Challenges identified in a 2008 paper focusing on surveying higher education in Asia included “lack of qualifications in academic staff, very low faculty pay, poor infrastructure, limited equipment, and a lower standard of secondary education than in many developed countries”. In these case studies in South-East Asia the level of pay in academic institutions was less than equivalent positions in government, and many people had additional jobs to make ends meet. It was very difficult to recruit and retain staff. Academic staff were also under-qualified with few having Masters qualifications or higher (Mitchell and Enemark, 2008).

A recent review on land tenure in Asia and the Pacific found that stakeholders in the land sector considered knowledge sharing one of the key priorities for improved land governance and called for multi-stakeholder partnerships to do this (Mitchell et al, 2015). Experience has shown that regional networks of academic institutions supports knowledge sharing in areas of education, research and capacity development. Regional networks of higher education institutions are proven platforms for knowledge sharing and improved education experiences. Recent establishment of regional academic networks in the land sector such as the Eastern African Land Administration Network (EALAN) and the Latin American Land Administration Network (LALAN) are evidence of this.

As with many aspects of capacity building in the Global South effective governance is a central objective in the development of improved higher education institutions (Mitchell and

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Enemark, 2008). Masum et al, (2017) also found that, limited opportunities for professional education in Surveying in the Global South is creating a gap in terms of quantity. Therefore, if the human rights-based aims mentioned above are to be achieved, attention needs to be paid to making places in higher education available to all, and this paper focuses on the capacity challenges of this aim. The question today is "how" this can work but this is what needs to be explored with the geospatial community and this paper considers how the FIG Asia Pacific Capacity Development Network and Commission 2 can help.

This paper explores opportunities for FIG through Commission 2 and the FIG Asia Pacific Capacity Development Network to help support and foster further development of academic networks in the Asia and Pacific region. In the following section we discuss the role of FIG and higher education, including Commission 2 Professional Education, and also describe the FIG Asia Pacific Capacity Development Network.

## **FIG AND HIGHER EDUCATION**

The International Federation of Surveyors (FIG) was established in 1878 and developed into a Federation with 105 member-associations from 91 countries, as well 86 higher education institutions from 52 countries as academic members. In addition, FIG has partnerships or agreements with leading multi-lateral organisations such as the World Bank, UNFAO, UN-Habitat and aligned professional association. This represents a very significant network of surveying stakeholders and a strong foundation for the development of regional partnerships.

Surveying education has been a major consideration for FIG and this is reflected in Commission 2 focusing on professional education. FIG publications have also discussed the evolving role of the surveyor and therefore the role of higher education. For example, the 2000 Delft FIG/CLGE seminar on Enhancing Professional Competence of the Surveyor in Europe, developed a profile of surveying education in the future combining the technical aspects of surveying (such as surveying and mapping) with the judicial or managerial disciplines associated with land management. The authors see no reason why this is not also relevant to Global South countries (Mitchell and Enemark, 2008).

### **FIG Commission 2**

FIG Commission 2 is the domain of professional surveying education. Traditional core areas for the commission are: 1) curriculum and core surveying body of knowledge, 2) teaching and learning methodology, 3) marketing and management of professional education and 4) accreditation and quality assurance. During the 2011-2014 term Frank (2008, 2012) and Greenfeld (2010, 2012) centered on the understanding of the surveying core body of knowledge. Developments and discourse broadened the scope of FIG Commission 2 from surveying education to educating the land professional (Enemark & Williamson, 2004; Enemark, 2008, 2009, 2010; Magel et al. 2009; Mitchell & Enemark, 2008).

During the 2015 -2018, FIG Commission 2 built on the above work focusing on the following themes (i) Becoming an active Commission, (ii) Professional education world-wide, (iii) the chain of professional surveying education, and (iii) towards educating the land professional. A

key publication from this term was Masum et al (2017) focusing on Bridging the Gap between Demand for and Supply of Professional Education.

For its new term, 2019 -2022, FIG Commission 2 will continue to build on the work carried out by the former commission chairs. FIG Commission 2 has developed for the term 2019 – 2022 the following focus areas:

- WG2.1 Developing academic networks – regional approaches (discussed below)
- WG2.2 Innovative teaching and learning
- WG2.3 Evolving learning styles and needs

### **Working Group 2.1 Developing Academic Networks**

Experience has shown that regional networks of academic institutions supports knowledge sharing in areas of education, research and capacity development. Accordingly the 2019-2022 workplan for FIG Commission 2 includes a focus on capacity building and knowledge transfer in the mission statement in relation to academic networks:

*‘Supporting capacity building for surveying education in the developing world, through strengthening knowledge transfer (including collaboration with UN-GGIM, GLTN, RICS and academic networks)’ (FIG Commission 2 Work Plan 2019-2022).*

Knowledge sharing involving ‘promoting sharing of advances in professional education, research in surveying education and training and initiate joint projects (curriculum development, educational material development, joint courses, quality assurance etc.). Improving dissemination of information on educational theory and practice to the members across the world via existing academic networks’.

This is reflected in the inclusion in the workplan of Working Group 2.1 ‘*Developing academic networks for knowledge sharing*’. This working group is chaired by dr. Dimo Todorovski, from Faculty ITC, University Twente, the Netherlands, and its objectives are to:

- share knowledge and good practices in surveying curricula and programs across educational institutions and across countries – especially through existing and newly created academic networks;
- seek feedback from these academic networks on changes in curricula and approaches to professional education that respond to the changing nature of the surveying profession;
- discuss and describe core competences (knowledge, skills and attitudes) for the education of future land surveyors and land professionals;
- explore the needs of society and higher educational organizations to develop mechanisms and processes that will help to meet those needs;
- facilitate knowledge sharing. Promoting sharing of advances in professional education, research in surveying education and training and initiate joint projects (curriculum development, educational material development, joint courses, quality assurance etc.).

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Improving dissemination of information on educational theory and practice to the members across the world;

- support capacity building for surveying higher education in the developing world, through strengthening knowledge transfer (including with UN-GGIM, RICS and regional academic networks); and
- engender cooperation with other professions. Reinforcing cooperation with Educational Commissions of International Organisations on the related professions

## **FIG ASIA PACIFIC CAPACITY DEVELOPMENT NETWORK**

In 2015 the FIG Council established the Regional Capacity Development Network with the theme: "Ensuring the Rapid Response to Change Ensuring the Surveyors of Tomorrow" by establishing a global network operationalised on a regional basis. The mission of the FIG Asia Pacific Capacity Development Network (AP CDN) is to enable an environment of land, marine and "space" professionals to effectively provide innovative, reliable and best practice solutions to address the regional, social, economic, environmental and technological challenges associated with global geospatial trends, our rapidly changing and complex world.

Over time the AP CDN has modified its mission to accommodate the present day issues and be more outcome focused, as a consequence a statement of intent was developed:

*"Responsible governance frameworks and integrated administrative systems of tenure (rights and interests) for land and marine, are underpinned by sustainable fit for purpose geodetic / geospatial infrastructure and information management"*

To obtain this, surveying and geospatial professionals will need to -

- Develop and enhance relevant capabilities to address the regional and national social, economic, environmental and technological challenges;
- Resolve challenges through a regional, unified, coordinated and collaborative approach;
- Ensure activities and initiatives have progressed through alliances and relationships with relevant likeminded bodies and / or development partners; and
- Create a culture of self-reliance, and an environment of learning, innovation, comprising of a blend of mature and young professionals, and a gender equity base.

Higher education institutions are key stakeholders in these responses.

### **FIG Asia Pacific Capacity Development Network Definition of "capacity development"**

According to the FIG AP CDN, capacity building or development can be described as a process of identifying the challenges or obstacles that impede an individual, organisation, or community from accomplishing their objectives. It also involves identifying and developing

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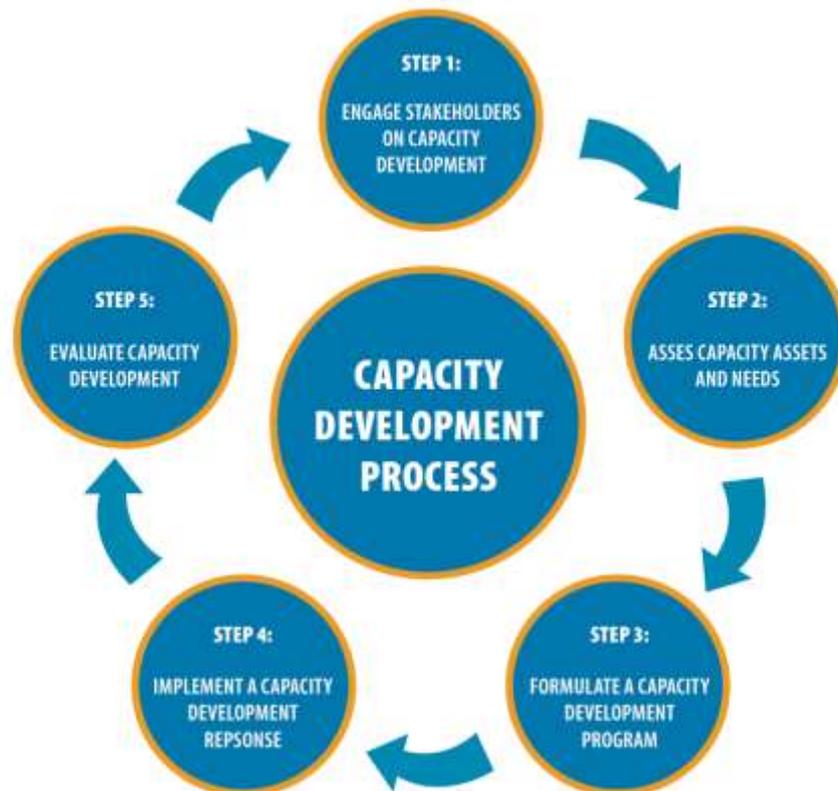
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the relevant knowledge, skills, competencies and frameworks to achieve the objectives. The AP CDN also considers capacity development involves learning to adapt to change (or shifting paradigms); understanding how decisions are made; and that to implement and sustain change it must be owned by the participants, supported by resources, and have the political commitment to achieve results.

To consolidate the AP CDN network, Asian countries may need to consider the United Nations Development Program (UNDP, 2009) approach to building capacity by analyzing the state of play, following a process, and establishing framework to monitor and measuring capacity development.



**Figure 1 The capacity development process (UNDP, 2009)**

As illustrated in Figure 1, the UNDP (2009) capacity development cycle contains 5 steps involving engaging stakeholders, assessing capacity assets, formulating a capacity development program, implementing the capacity development program, and evaluating capacity development.

The questions posed by this UNDP report are:

1. To what end do we need to develop this capacity? What will be its purpose?
2. Whose capacities need to be developed? Which groups or individuals need to be empowered?

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3. What kinds of capacities need to be developed to achieve the broader development objectives?

### **The future for the AP CDN**

Since its inception the AP CDN's initial focus has been in the Pacific. The work in these islands and territories has enabled countries to take a regional approach to building their geospatial and geodetic capability through the establishment of the Pacific Geospatial and Surveying Council (PGSC). With a collaborative attitude, the will to succeed and desire to participate the Pacific nations prepared the strategy "Positioning the Pacific for the Future" over a 2 -3 year period. This unique document is now being used as the foundations for each Pacific country to develop their own geospatial and surveying strategy to accomplish their nation's goals.

From a capacity development perspective, the AP CDN, in conjunction with likeminded network partners from agencies such as the United Nations Global Geospatial Information Management Asia Pacific (UN GGIM AP), International Association of Geodesy (IAG), and the Pacific Community, have provided an independent advocacy role to the geospatial and surveying community. This role included the provision of technical, administrative and professional support and information; organisation, facilitation and actively participation in discussion forums, meetings, seminars, workshops, and technical sessions; and also the advocacy of collaboration. More specifically in relation to building capacity the AP CDN advocated the importance to develop implementation and action plans that –

- Recognize continuing professional development is an integral part of the geospatial and surveying culture;
- Foster and develop the young geospatial and surveying professionals through sponsorship and mentoring programs;
- Recognise the important contribution of the Pacific Island Countries and Territories' (PICTs) women in the geospatial and surveying industry, and create opportunities to expand their involvement;
- Critically evaluate the status of geospatial and survey capability in academic institutions, and determine immediate needs, future core capabilities, educational and training requirements;
- Promote and create an awareness of the geospatial, surveying and geoscience profession to secondary school institutions through an effective technology-based marketing campaign;
- Developed mechanisms to exchange information and experience amongst PICTs, in key areas such as technical developments, data management and geospatial or survey techniques; and
- Engage and form alliances with academic and relevant development partners (both regional and local) to formulate and implement suitable and sustainable geospatial and surveying curriculum.

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More recently the AP CDN has also been operating in Asia. The impact and messaging of working collaboratively to develop a regional capacity development plan however is more of a challenge in this region. Without being too controversial, it has been hindered by the diverse cultures and the different political environments, nevertheless the geospatial and geodetic challenges being experienced in this region are the same. To move forward the “face to face” interaction by the AP CDN will remain the same however the concepts and ideology around capacity building will need to take a more structured and institutional based approach. That is utilise existing mechanisms which have a more formal basis.

Ultimately the keys for future success of the AP CDN in Asia will be to –

- Ensure a collaborative approach to capacity building,
- Utilise UN initiatives such as the Integrated Geospatial Information Framework (IGIF),
- Work with likeminded agencies,
- Identify the wants, needs, core competencies and challenges,
- Investigate who can provide the required professional or capacity development,
- Examining mutual recognition of professional qualifications or accreditation, and
- Assist with formulating a capacity building strategy, framework and implementation plans for a country / sub regions that are linked to the needs / priorities / objectives of the nation or broader community.

## DISCUSSION

Masum et al (2017) who argued that the role of the surveyor is increasingly changing from ‘a traditional role’ to ‘a pragmatic role’ working with other professionals involved in land and natural resources management. They further highlighted the big gap between demand for and supply of professional education in terms of quality and quantity. While learning requirements of a surveyor vary from country to country, they argued the approach to acquiring these skills is still very traditional thus widening the gap between demand for and supply of quality education to enhance capacities of land professional/surveyor. The author’s paper suggested that broadening the scope of professional education would enhance the professional capacities of surveyors in managing and governing land to meet the challenges posed by the emerging changes in the land profession (Masum et al, 2017).

Masum et al (2017) argued that for surveying educational institutions to meet the new challenges and requirements of the surveying profession they should adapt curricula and provide continuous professional development / Life Long Learning, as well as a plan including internationalization and networking, new teaching approaches and ways to achieve the new teaching approaches (See Box 1).

***Box 1: Future direction for long-standing professional education (Masum et al, 2017).***

### **Internationalization and Networking**

- Increased mobility of students and teaching staff
- Study program in English language and joint study program
- Individual and institutional capacity building in developing countries
- Joint research activities
- Knowledge exchange (conferences, workshops, cooperation in national and international professional federations, e.g. FIG)
- Harmonization of curricula and education /training

### **New teaching approaches**

- From teaching to learning
- From on-site lectures to off-site lectures
- From self-contained studies to life-long-learning

### **Ways to achieve the new teaching approaches**

- Modern teaching and learning methods
- Quality Management
- Continuous Personal Development and Life Long Learning Program

Masum et al (2017) highlighted the importance of networks and partnerships in Box 1 above. Under the heading of 'Internationalization and Networking' they emphasised the need for:

- Individual and institutional capacity building in developing countries;
- Joint research activities;
- Knowledge exchange (conferences, workshops, cooperation in national and international professional federations, e.g. FIG) ; and
- Harmonization of curricula and education /training.

Enemark (2005) argued that capacity building is an ongoing process that must be based on national priorities and an analysis of the contribution higher education may make to the social, economic and political development. The higher education institutions and courses must be developed in accordance with the unique national priorities. Graduates must possess a strong understanding of these national priorities and how they may contribute" (Mitchell and Enemark, 2008)".

All of these can be more easily facilitated through partnerships formed through the development of effective regional academic networks.

Overall, FIG can play a supporting role in the capacity building needed in three ways:

- 1) Professional development – through providing a forum for discussion and exchange of experiences and new developments.
- 2) Institutional development – FIG provides support in developing basic capacity to member countries through providing guidance and guidelines.
- 3) Global development – Cooperation with international NGO's such as the United Nations agencies and the World Bank allows FIG to provide a forum for global

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development. This cooperation provides an opportunity for joint efforts in addressing the issues facing Global South countries.

### **Professional development through regional academic networks**

The AP CDN, in collaboration with FIG Commission 2 working group 2.1, can contribute to professional development through regional academic networks by:

- Sharing knowledge and good practices in surveying curricula and programs across educational institutions and across countries – especially through existing and newly created academic networks;
- Discussing and describing core competences (knowledge, skills and attitudes) for the education of future land surveyors and land professionals;
- Recognizing continuing professional development is an integral part of the geospatial and surveying culture;
- Fostering and developing the young geospatial and surveying professionals through sponsorship and mentoring programs; and
- Recognising the important contribution of women in the geospatial and surveying industry, and create opportunities to expand their involvement.

### **Institutional development through regional academic networks**

The AP CDN, in collaboration with FIG Commission 2 working group 2.1, can contribute to institutional development through regional academic networks by:

- Seeking feedback from these academic networks on changes in curricula and approaches to professional education that respond to the changing nature of the surveying profession;
- Facilitating knowledge sharing. Promoting sharing of advances in professional education, research in surveying education and training and initiate joint projects (curriculum development, educational material development, joint courses, quality assurance etc.). Improving dissemination of information on educational theory and practice to the members across the world;
- Supporting capacity building for surveying higher education in the developing world, through strengthening knowledge transfer (including with UN-GGIM, RICS and regional academic networks);
- Critically evaluating the status of geospatial and survey capability in academic institutions, and determine immediate needs, future core capabilities, educational and training requirements;
- Promoting and creating an awareness of the geospatial, surveying and geoscience profession to secondary school institutions through an effective technology based marketing campaign; and
- Developing mechanisms to exchange information and experience amongst countries, in key areas such as technical developments, data management and geospatial or survey techniques.

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## **Global development through regional academic networks**

The AP CDN, in collaboration with FIG Commission 2 working group 2.1, can contribute to global development through regional academic networks by:

- Exploring the needs of society and higher educational organizations to develop mechanisms and processes that will help to meet those needs;
- Engender cooperation with other professions. Reinforcing cooperation with Educational Commissions of International Organisations on the related professions; and
- Engaging and forming alliances with academic and relevant development partners (both regional and local) to formulate and implement suitable and sustainable geospatial and surveying curriculum;

## **CONCLUSIONS**

This paper aimed at exploring opportunities for the FIG Asia Pacific Capacity Development Network to help support and foster further development of academic networks in the region of Asia and Pacific. Initially FIG and Higher Education, FIG Commission 2 and its Working group 2.1 on Developing Academic Networks are elaborated. In addition emphasis placed on FIG AP CDN and its future. In this paper we argued that FIG can have a supporting role in the following three ways: Professional, Institutional and Global development.

The FIG Asia Pacific Capacity Development Network, working with FIG Commission 2, and partnering with other networks in the surveying sector can make a significant contribution to the professional, institutional and global development of higher education institutions in the region. The benefits include improved knowledge sharing, access to information, staff development, and improved capacity.

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## BIOGRAPHICAL NOTES

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**David Mitchell** is an Associate Professor at RMIT and a licensed cadastral surveyor. He has a PhD in land administration. David is chair of FIG Commission 2 Professional Education. At RMIT University he teaches cadastral surveying and land development and undertakes research focusing on the development of effective land policy and land administration tools to support tenure security, improved access to land and pro-poor rural development. He also has a strong research focus on land tenure, climate change and natural disasters

**Dimo Todorovski**, is Portfolio Holder Education of PGM department and M-GEO Masters coordinator of land administration specialization at Faculty of Geo-Information Science and Earth Observation (ITC), the University of Twente, in Enschede, the Netherlands, and he is FIG Commission 2 Chair Working Group 2.1: Developing Academic Networks (term 2019-2022). He holds a PhD from University of Twente and he obtained MSc degree in Geo-Information Management at ITC, in 2006. Over the 19 years of professional engagement (1992-2011) in the Agency for Real Estate Cadastre in the Republic of Macedonia, last 12 years were on different managerial positions (Digitizing, GIS and Geo-ICT departments), and the final year he was Head of the Department for International Cooperation and European Integrations. His research interest focuses on land administration and land management, and on land administration in post-conflict contexts.

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