



THE SURVEYOR'S ROLE IN REDUCING RISK

FIG PRESIDENT CHRYSY POTSIOU LOOKS AT THE ROLE FOR SURVEYORS IN HELPING POPULATIONS TO RECOVER FROM DISASTER

According to the Sendai Framework for Risk Reduction, more than 700k people have lost their lives, worldwide, over the past 10 years, and approximately 23m have been made homeless by various disasters. So what role is there for the surveying community in 'recovery from disaster'?

Where dense populations of people are settled in communities of homes and businesses, there is risk – in some places, there is the risk of natural disasters. Good planning, building and permitting practices minimise cultural risk. Risk of disease epidemic grows as populations increase in number and density.

One of the surveyor's roles is in the geographic-demographics of risk. Engineers and geo-technical experts may identify certain risk, such as ageing bridges or poorly administered earthquake codes. Surveyors will measure and demonstrate the proximity of these risks to population centres in an application of GIS technology.

Geographic-demographics is important in devising emergency rescue measures. For instance, following the Katrina hurricane that devastated New Orleans in the United States 10 years ago, it was discovered that more than half the people who died were 65 or more years old.

Knowing where the most vulnerable people are is vital for emergency personnel during natural disasters; making the connection is a job for the geospatial professionals and is a classic example of risk assessment.

The surveyor's role in assessing risk involves more than the geographic-demographic element. Hydrographic surveyors are uniquely involved in the more esoteric activity of sea-level calibration and tidal range as the world attempts to track climate change and its effects. Engineering surveyors are already measuring settlement and deformation of public works elements such as dams, bridge structures and landfills. These, too, are examples of risk assessment.

The Sendai Framework for Disaster Risk Reduction makes the obvious point that 'reducing disaster risk is a cost-effective investment in preventing future losses' and 'contributes to sustainable

development'. But risk reduction can only follow risk assessment.

Disaster calibration

An example of disaster calibration is in the use of scanning technology in the recent Himalayan earthquakes in Nepal in which the volume of earth movement was calibrated, while GPS technology was used in measuring the horizontal and vertical movement of the earth's surface and the underlying continental plate.

Analysis of the cause of any disaster, whether natural or cultural, follows the calibration process and is necessary for future risk assessment, which will lead to risk reduction and mitigation, all a part of the disaster management process.

As for prevention of recurrence, the Sendai report contains several global targets for the reduction of disaster risk (see Box). These goals invariably raise the issue of population centres and their proximity to disaster risk. The relocation of large populations out of risk areas everywhere around the world, either from informal settlements built on risk areas or from coastal settlements in areas of high sea level risk, may prove impractical.

The Sendai goals must be met by the development of specific new tools and local measures.

The role of the surveyor

In all of this, what is the role of the surveyor? It will be a matter of measurement, analysis and tool development; a calibration of the relationship of populations to the Earth; and the natural singularity of different regions. To put it another way, it is the role of our professionals in geospatial data analysis applied to the interface of culture and nature.

It is not a new role, however – it is what surveyors have been doing for centuries. It is what energises us. It is what the world expects of us.

FIG is looking to address professional involvement in disasters

from a broader perspective than recovery. Surveyors are committed to making a global change happen quickly.

Surveyors need to improve their role in developing the tools for the resilient development and good management of urban areas, land and natural resources, their uses and functions, land administration, land-use planning, property valuation, climate-smart agriculture, landscape restoration, forest conservation and reforestation, which indirectly affect our efficiency in dealing with disasters.

We live in an era of urbanisation that has seen millions moving from the rural areas to the cities of the world. This urbanisation is further exaggerated by the escalating number of displaced people migrating to new lands as a result of wars, oppression and starvation.

How will the cities deal with these new populations?

It will be a challenge not only for the politicians of the world, but also for the professions, as well. Infrastructures must be expanded while protecting the environment. New and greater urban services must be provided, including educational and medical services. All public institutions must grow to meet the demands of this historically unprecedented population expansion. But perhaps most of all, housing must be provided and at every level of income, including low income as well as moderate and above average income levels.

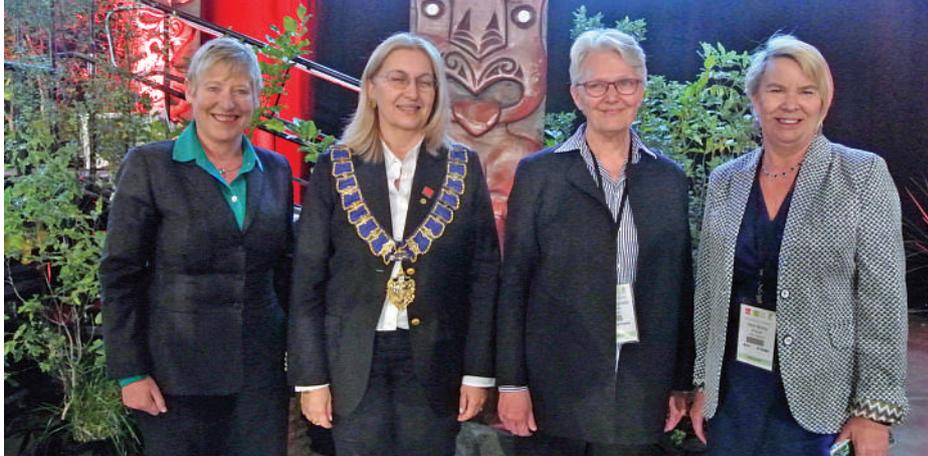
This urbanisation presents both challenge and opportunity to our geospatial professionals – our surveyors, hydrographers, geodesists, cadastral surveyors, valuers and planners. Whether in academia, government, industry or private practice, our members are faced with an exciting and challenging future.

Our vision is for a world free of poverty, fear and inequality, where life is safe and growth is resilient and sustainable, where everyone has clear and secure property rights,

THE SENDAI REPORT TARGETS

The Sendai report contains several global targets for the reduction of disaster risk:

- The reduction of global disaster mortality.
- The reduction of the number of affected people.
- The reduction of disaster-caused economic loss.
- The reduction of disaster-caused damage to critical infrastructure.
- An increase in the number of countries with disaster risk reduction strategies.
- An enhancement of international cooperation.
- An increase in multi-hazard early warning systems.



From left to right: the Mayor of Christchurch Hon Lianne Dalziel, FIG president Chryssy Potsiou, UN special representative of the secretary general for disaster risk reduction (UNISDR) until end of 2015 Margareta Wahlström, Hon Nicky Wagner, associate minister supporting Greater Christchurch regeneration

where sustainable land use practices are the norm rather than the exception.

How do we get there?

We need to move toward more holistic, multi-sector partnerships to more systematically address the global challenges among them to achieve secure land rights for all by 2030. FIG has developed a close relationship with United Nations Agencies, the World Bank, the EU and other important international institutions. It is important that FIG build on these relationships. It is important for FIG to lend its collective expertise to all aspects of disaster management for the betterment of societies everywhere. It is also important that FIG be directly involved in these activities for the growth and vitality of its members and their activities in this era of globalisation.

We strongly believe in the power of joint research with the UN and the World Bank in advising people and partners on making smart, evidence-based solutions that shape the development agenda. We, our member associations, academic members, affiliate members, corporate members, our commissions, task forces and networks, need to coordinate more of what we do so that we are more strategic in our collective actions and ensure that priority goes to activities with the highest returns.

We need to do more to build on new technologies, create new opportunities for surveyors, and capitalise on more affordable high-resolution spatial data.

Chryssy Potsiou is president of FIG (www.fig.net). This article is an extract of the opening address she gave at the FIG Working Week held in May

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