

# CAPACITY DEVELOPMENT FOR GEODETIC SURVEY ORGANISATIONS

LEADERS OF GEODETIC SURVEY ORGANISATIONS MUST DISCOVER AND DEFINE THE CASE FOR CAPACITY DEVELOPMENT PROGRAMMES. **ROBERT SARIB** EXPLAINS HOW AND LOOKS AT THE FOUR ELEMENTS NECESSARY FOR SUCCESS

In Asia and the Pacific region, geodetic survey organisations (GSOs) have re-evaluated their identity, role and function to cope with today's growing and constantly changing "location intelligence or ubiquitous positioning" landscape, the demand for greater integrity of national foundation data, and providers of spatial analytics. As the geospatial reference system (GRS) or geodetic reference frame or datum underpins such activity, GSOs are modernising their GRS to better manage digitisation, the impacts of disruptive technologies, the sustainability of our natural and built environment, earth movement, disasters and emergencies. This

situation is indicative of a dynamic working environment and affects the organisation's operational effectiveness and efficiency, delivery of service and business objectives.

Consequently, to maintain performance and meet public expectations, GSOs are compelled to review the capabilities of their workforce and make the necessary organisational changes to implement a capacity development programme (CDP). To establish CDPs, FIG's Asia Pacific Capacity Development Network (AP CDN), together with other like-minded organisations, have assisted GSOs with this process, and used capacity building to reduce the technical

and digital divide between the developed and emerging geospatial economies.

Our analysis shows successful CDPs using the United Nations Development Program (UNDP) approach are multi-level and incorporate the interrelating needs and objectives of the individual, the institution and society in general. These CDPs are also characterised by realistic outcome frameworks that enable the organisation to measure or monitor them for improvement and possible shortcomings.

However, while change management strategies are part of most CDPs or organisations' plans for managing people,



they have had mixed results. This is due to the change agent's lack of ability and the absence of ownership and/or acceptance by the CDP's stakeholders. To implement change, the CDP must have the political will and support of leaders, be clearly understood by the organisation's participants, and involve skilled champions of change.

### The case for CDPs

To gain the impetus and support of CDPs, leaders of GSOs should discover and define the case for CDPs, who and what skills need to be enhanced, and who needs to be empowered to facilitate change. We also recommend the CDP's objectives be aligned with the nationwide strategic agendas or regional initiatives, such as establishing 'fit for purpose' geodetic and geospatial infrastructure and systems to: support location intelligence activities; reform land governance, administration, titling and registration; build resilience with respect to disasters; manage the impacts of climate change and sea level rise; measure and monitor the dynamics of the earth for global science; or attain or leverage various United Nations initiatives such as its Sustainable Development Goals or the Global Geodetic Reference Frame.

Case studies suggest strategic agendas or organisational objectives are obtained incrementally over time. CDPs should be similar and an ongoing organisational commitment, not just for specific purposes or projects.

Ideally, a CDP should be built for long-term gain and to withstand changes – that is to be agile, flexible and adaptable to strengthen capabilities and ensure ongoing development. We therefore recognised that to have sustainable CDPs, organisations need to:

- Own, design, direct, implement and maintain CDPs themselves
- Empower their workforce and engender ownership of CDPs
- Use local resources, including people, skills, technologies and institutions, to implement CDPs
- Have greater diversity and inclusion in the workforce
- Enshrine CDPs into organisational policies,
- Link CDPs to industry standards / guidelines
- Collaborate and engage with industry, professional surveying and geospatial bodies, the scientific and academic sectors, and the general community.

### Four elements to success

GSOs must also appreciate the four key elements that will influence the success of the organisation's CDP.

#### 1. Institutional arrangements

This includes geodetic survey legislation, regulations, policies, standards, code of practices, guidelines, memorandums of

understandings, agreements, licences, and can also include also community, social or industry "norms or expectations". From a management perspective, it involves frameworks associated with financing, resourcing, accountability, performance management, human resource management and employment.

Overall, it is about ensuring clarity of structure, roles and responsibilities in the geodetic information data cycle and management; and interaction in the "supply and user chain" of geospatial information.

#### 2. Leadership (management)

Leaders must be able to provide clear vision and direction, and with integrity, influence, inspire and motivate others to achieve both organisational and personal capacity development objectives. They should use different management styles and approaches to a diverse range of audience – this also includes liaising with decision-makers and politicians, as well as 'traditional' or 'customary' stakeholders.

To ensure the sustainability of CDPs, leaders need to actively oversee change management and risk strategies, identify champions of change, collaborate with community groups, and build networks with likeminded agencies.

#### 3. Knowledge

This is about recognising and understanding the existing capabilities of individuals and teams, and how these will influence or determine capability development. It will involve discovering present and future technical, administrative, management and "soft" capabilities of the people – their knowledge, experiences, skills, qualifications and competencies. It is also about examining "how" knowledge is ascertained and facilitated through local agencies, professional associations, international agencies, scientific community, academic institutions and networks involved with geodesy and earth sciences.

#### 4. Accountability

Organisations are obliged to account for CDP activities and provide legitimacy to decision-making. This can be through systems that obtain feedback from stakeholders and the analysis, evaluation, monitoring, measurement and reporting of inputs and outputs through performance indicators. These systems also augment and reflect an organisation's responsiveness to change and will provide greater transparency both 'upwards' and 'downwards', support ethical organisational and individual behaviour, and thus integrity to the process.

### Our recommendations for the future

The geodetic survey community is at an interesting juncture. To determine a sustainable role in a rapidly transforming

## AP CDN'S RECOMMENDATIONS

We recommend GSOs consider:

- Obtaining national support and ownership to drive the planning and implementation of the CDP
- CDPs to be led by both organisational and national leaders who are empowered and willing to change structures and processes to improve GRS performance and overall organisational efficiency and effectiveness.
- A common understanding of the CDP's purpose, scope and objectives, and agreement on the end outcomes.
- An objective assessment process (inclusive and diverse) to reach a consensus view of CDP needs, recommendations and activities.
- Adapting a capacity development "participatory" approach that suits the GRS environment and accommodates circumstances of other organisations or nations involved.
- Clarity of CDP roles and responsibilities, including who is accountable for implementing, evaluating and delivering CDP activity.
- CDP planning, budgeting and resourcing should be part of the initial programme development to support modernisation of GRS.
- Integration of realistic and incremental (phased) CDPs with existing organisational (and national) plans and strategies, rather than being seen as separate programmes.
- Include participating donors, development partners and stakeholders at the planning stage to ensure coordination of various capacity development initiatives and cost- and resource-sharing.
- Through a structured evaluation mechanism, regularly review and update the CDP to monitor progress and make necessary changes.
- Ongoing and transparent communications and collaboration with 'all stakeholders' regarding the CDP and its progress.

geospatial landscape, changes are required in GSOs, especially in capacity-building and the development of suitable mechanisms and frameworks to support related activities. We will continue to assist countries involved with capacity-development and provide programmes for geodetic and geospatial surveyors.

**Robert Sarib is chair of the FIG Asia Pacific Capacity Development Network (AP CDN) ([www.fig.net](http://www.fig.net))**