

# Surveying, Survey Department and the Future Mission

Special Contribution from

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## Newer Roles in the Surveying Profession

Changed roles of Surveyors and the recent development of technology guided the Survey Department to engineer in the enhancement of surveying profession and its future mission. This paper tries to identify the activities of the future mission and sort out the list for institutionalization of effective and functional organizational framework of Survey Department.

Though Surveying was recognized as a profession centuries ago, it has still to establish itself as ethically sound and socially respected profession. Previously, The Civil Services Act and Regulations recognized Surveying as part of Miscellaneous Services. It was only in 70's that Surveying was recognized as a profession in itself being classified as Nepal Engineering Service Survey Group. The Fifth Plan (1975-1980), for the first time, identifies three levels of survey technical manpower: Surveyors (high-level) with a requirement of 59, Assistant Surveyors (middle-level) with a requirement of 372 and Amin (basic level) with a requirement of 1222 during the plan period. This amounts to nearly 6.8% of the requirement of all technical manpower in the country. This Plan recognizes, therefore, for the first time surveying as a profession in the country with three-tiers of its own. Today, Survey Department alone has a total strength of around 2000 Surveyors of different categories serving in different positions and specializations. The major fields of specializations in Surveying profession in the Survey Department are: Land Surveying, Topographic Mapping, Geodetic Surveying, Satellite Geodesy, Geophysical Surveying, Cartography, Photogrammetry, Remote-sensing, LIS, Land Administration, Land Management, Geomatics, GIS, Geoinformatics, Spatial Data Infrastructure, Spatial Database Management and many more.

With the advent of information technology, Surveying is no more limited to the science, technology and skill in the measurement and mapping of the features on the surface of the earth, but acquisition, processing and handling of all geo-related data and information. Therefore the scope has highly enhanced.

In Survey Department, our traditional scope of work was geodetic and other control surveys, cadastral surveying, and topographic mapping. Additionally, as a national mapping organization (NMO) regularization and coordination of all mapping work was also one of its main tasks. The newer roles of Survey Department in the changed scenario is the adoption of changed technology and fulfill the changed aspirations of the users in those fields: geodesy, cadastre, topographic and other national mapping and the enhanced role of NMO as the hub of geo-information infrastructure at the national level.

## Mission for the future

The mission of Survey Department for the future could be very elaborate and theoretical in nature. But we need to consider only those points which could be achieved or which should be achieved so that the survey department could serve for the people and ultimately to serve for the nation. In the following, few sectors as the mission of Survey Department for the near future are enunciated. These are practical or unavoidable the attention of all Survey professionals and other decision-makers are necessary to fulfill them:

- Cadastral Survey role
  - Land Ownership Certificate to all legal land-owners
  - Accurate parcel-based information based on numerical cadastre and adjudicated boundary markers
  - Operational Land Information System for reliable and current information on land-ownership and land-holdings
  - E-governance in cadastral maps and records maintenance and related public services
  - Adoption of Cadastre 2014
- Supporting in land administration and land management
  - One-door services in land administration
  - Surveying for better land management like spatial planning, land-use zoning and land consolidation
  - Custodianship in public and government land

- Geodetic Survey role
  - Development of appropriate Geoid for geodetic purpose.
  - Allocation of all control survey work to related Survey Units themselves
  - Development of dedicated Geodetic and Research Branch
- NMA role
  - More of a regulatory body
  - Periodic map updating
  - National coverage of large scale mapping e.g. 1:10,000
  - Focal organization for geographical names, national and international boundaries
  - National Atlas service
- NSDI role
  - Hub of NSDI
  - Availability of multi-resolution database 1:10,000 to 1:1 Million
  - Mandatory adoption of national standards and central clearinghouse for metadata
  - Data sharing through distributed clearinghouse and electronic data transaction
- of public and government land
  - A consolidated cadastral survey, land registration and land information department for land administration
  - A consolidated land consolidation, spatial planning, land-use zoning and land use planning department for land management
- Human Resource Issues
  - Enrollment of members qualified in the respective profession in Land Administration and Survey Service
  - Gradual upgrading of all Amin an Kharidar posts to non-gazetted Class I and consequently to Officer Class III level within five years
  - Systematic plan for periodic and continuous support like on-the-job orientation, training, higher studies for members of Land Administration and Survey Service
  - Systematic plan for recruitment and career development for members of Land Administration and Survey Service
- Professionalism in Surveying Profession
  - Enactment of Survey Council Act
  - All members of Land Administration and Survey Service to hold membership of Survey Council
  - Survey Council to enunciate the clauses and monitor the adherence to the Morality and Ethics of Surveying professionals
  - Co-ordinate with the professional societies such as Nepal Surveyor's Association, Nepal Remote Sensing and Photogrammetric Society, Nepal Surveyor's Society, Nepal GIS Society etc to enhance the activities of the department.

### **Institutionalization of effective and functional Survey Department**

The above mission cannot be achieved without an effective and functional organizational framework of Survey Department. Therefore the institutionalization of the following is necessary:

- Issue related to trimmed and functional organization
  - More of a regulatory body rather than a production organization
  - Public-private and public-public partnership in mapping and GIS
  - Improvement of professionalism in surveying and mapping
  - Services of licensed surveyors in cadastral maps and records maintenance
  - Trimming and gradual reduction of basic and medium level positions and creation of qualified specialized higher-level Surveyor positions
  - Creation of specialized mapping and geo-information centers at the center and regions
  - Creation of regional Survey Directorates and decentralization of authority
- Policy Issues
  - Development of National Land Policy, Survey Policy and Geospatial Data Policy
  - Creation of specialized Land Administration Service
  - Creation of Department of Land as a custodian

### **Conclusion**

All Surveyors belong to the profession of Surveying. Survey Department alone cannot and should not take all responsibility for surveying and mapping in the country. It can only play a facilitator and a regulatory body. The Surveying profession has so many specializations that Survey Department can be more effective when it can create an environment for public-private and public-public partnerships based upon capacity, capability and necessity. It is necessary that Survey Department adopts newer technology to fulfill the user needs and the organizational and institutional developments are made accordingly. Lot has to be done and some are practical while others are inevitable to meet the pace of time. The mission for future of Survey Department has a long list of policy intervention and activities to be undertaken. It is important that we take to the direction.