Key Recommendations and Discussion points for Group 5

The Group discussed regarding building of capacity for adoption of Geospatial Governance Systems.

The participants introduced themselves at the beginning of the session. It was discussed that capacity building for GIS can be categorized into the following three components-

1. Human Resource Development with a focus on technical and professional personnel
2. Organization and Institutional Strengthening
3. Strengthening of policy, legal and regulatory frameworks for implementing GIS

The group thereafter worked together to identify the capacity building requirements for each of the major e-Gov roles. The group discussed and came up with the below recommendations-

Target Participants	Knowledge Area	Skill/Training	Courses Available	Course to be developed
Leadership Level	Best Practices (creating spatial awareness) National/International (Sources- GEOSPATIAL world, Directions Magazine, My coordinates, GIM international)	Sensitization programs	NA	One day sensitization program
Policy Level (Strategy and Design) (CIO , CTO)	IT geography and associated domain knowledge	Capability to understand and think Spatially	Courses available at ISRO, IIRS Dehradun, Anna University, C-DAC, NIST etc.	Short Course on Geo informatics (2 to 3 days)
Implementation Level (eg. future state definition, Bid management. Vendor management etc)	Market Knowledge, Geospatial industry, Latest Survey Technologies	Project Management, Public Procurement for Geospatial Technology, Bid Management, Vendor Management,	Courses available at ISRO (RRSSC, SRSAC IIST) NIFM, Anna University,	Short term course for 5 days on Geospatial application

Target Participants	Knowledge Area	Skill/Training	Courses Available	Course to be developed
		Program Management, Change Management	IIRS Dehradun, C-DAC, NIST etc Project Management Certification	
Technical Resources (Under Strategic Control of Govt.)	Geospatial, Domain Knowledge and IT	Geoinformatics, Remote sensing Programming, Mapping & cartographic, Field surveying	10 months PG Diploma in GIS and IT 4 Year BE degree by IIRS 2 year MTech in Anna university etc.	More PG Level Courses to be developed including short term national and international courses
Students	MHRD National Task Force on Geospatial education, can be referred	General awareness and hands on GIS technology so that GIS studies can be pursued at graduate and post graduate levels	Strengthening of Institutions like Anna University etc.	GIS Education may be taken up Class 11 onwards an optional paper Industry participation should be encouraged for offering internship, research opportunities to students

Further the group deliberated on building capacities at the institutional and organizational level and came up with the below recommendations for strengthening the private and public sector institutions-

- Existing Geospatial education infrastructure in academic institutions should be strengthened.
- Skill up-gradation programmes should be conducted for faculty in order to align their knowledge base to current and new GIS technologies.
- Capacity building should be undertaken at departmental training institutions like FTI, NPTI etc. so that they can further conduct refresher courses for serving officers.

- Engagement with the private sector should be undertaken continuously and proactively for augmentation of GIS resources.
- Institutional arrangement need to made in order to facilitate production and exchange of harmonized Geospatial datasets
- Institutes working on GIS skill training in the fields of agriculture, mining, disaster management etc. should be strengthened
- Using available connectivity through NKN, a national Geospatial research and training grid should be established for sharing case studies, training material etc. so that virtual GIS training capacities can be built.
- Various E-Courses and modules need to be developed.

The group also discussed about the various steps Government can take to strengthen Geospatial capabilities at Government Organizations and came up with the following recommendations-

- A GIS index needs to be created
- Guidelines for usage of GIS in Government Projects should be developed to resolve implementation issues
- The Government organizations in India need to be educated so that they are able to consume services hosted on the GIS platform.
- A separate cadre for Geographic Information Officer (GIO) should be created to build and retain geospatial competencies in the departments.
- A Policy framework should be prepared to support the development exchange and application of Geospatial data existing in some countries
- A hub and spoke model for GIS capacity building can be undertaken up to the district level
- Provision to depute Govt. officers for post graduate GIS courses can be made.
- A body for registration/certification of GIS engineers should be institutionalized by the Government

It was suggested during the GIS workshop that at the graduate level, students should be provided the opportunity to pursue papers on GIS, Mathematics and Geography simultaneously which would help in building international quality Geospatial talent in India.

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