Chapter 7 Training in Remote Sensing

Audit Objective 5: To assess whether adequate training on remote sensing was imparted to ensure effective usage of data products.

Indian Institute of Remote Sensing, Dehradun

7.1 Indian Institute of Remote Sensing (IIRS), Dehradun, a unit of NRSC, is the focal point for long and short-term courses and refresher courses for training in remote sensing. It conducts customised courses for professionals, for the period ranging from four days to 24 months. The main function of IIRS is capacity building through education at post-graduate level in the application of remote sensing and geo-informatics for natural resource management. In addition to the training at IIRS, NRSC at Hyderabad campus provides short term training to the users of data products, as a part of its promotional activities.

The users of remotely sensed data require technical expertise to utilise the same for their applications. Therefore, training and continued customer support is an integral part of the remote sensing data utilisation programme. To meet this, NRSC provides capacity building in remote sensing through education and also provides short term training to data users. In the area of capacity building, we observed that there were shortages in planned enrollment due to stricter evaluation criteria. In short term training programmes, we observed that the involvement of private users in the programmes needed to be improved.

Enrolment at IIRS

7.2 The various courses offered by IIRS include:

- Masters in Technology (M.Tech)course of 24 months duration in Remote Sensing & GIS Natural Resource Management (Mapping & Monitoring),

- Two Masters in Science (M.Sc) courses in Geo-informatics and Geo-hazards of 18 months duration each,
- Eight/nine Post Graduate Diploma courses of 10 months duration,
- Eight certificate courses of four months duration in various disciplines of remote sensing applications,
- Post Graduate courses of 9 months duration for Centre for Space Science and Technology Education (CSSTE) in Asia Pacific region,
- Special courses at the request of the users, and
- Various short term courses of duration ranging from 4 days to 8 weeks.

The details of number of participants planned/enrolled and percentage not enrolled in these courses are detailed in **Annex-6**.

7.3 With regard to the enrollment of students in various courses conducted by IIRS, we observed that:

- The total number of students enrolled in all courses during 2003-04 to 2008-09 showed an increasing trend wherein the number of students increased from 249 in 2003-04 to 522 in 2008-09. The increase in number of students was mainly due to increased number of students in short term courses.
- Though courses were conducted as planned, there were shortages in number of participants by 10 to 35 *per cent* during 2003-04 to 2008-09 for M.Sc courses.
- In Post Graduate Diploma courses, the shortages in enrollment were 16 to 59 *per cent* during 2003-09
- In Certificate Courses, the shortages in enrollment were 24 to 76 *per cent* during 2003-09.
- In CSSTE courses, the shortfall in enrollment was 5, 10 and 25 *per cent* during 2005-06, 2007-08 and 2008-09.

While the increase in the overall enrollment would go a long way in enhancing capacity building in the area of remote sensing, there is a need to ensure that the slots allocated for various long term courses like M.Sc, M.Tech and Post Graduate Diploma do not remain unutilised.

DOS replied in July 2009 that there were large numbers of applicants for M.Sc. programmes and that these programmes had eligibility criteria and strict evaluation system and hence the slots remained unutilised.

Training at Hyderabad Campus

7.4 The Standing Committee of Parliament on DOS recommended that more and more private entrepreneurs should be associated in the process of remote sensing data utilisation programme. NRSC, at its Hyderabad campus, conducted three to eight short term courses of 16 to 26 weeks duration for 85

to 180 participants during the period under review. These courses were planned for promoting the sale of data products. The details of such courses conducted are given in **Table 8**.

Table 8
Courses conducted at NRSC, Hyderabad during 2003-08

Year	Course Type		Total Courses	Number of Participants from			Total Participants
	Regular	Customised		Government	Private	Academic	
2003-04	4	0	4	46	15	24	85
2004-05	4	1	5	77	31	30	138
2005-06	3	0	3	45	18	23	86
2006-07	4	4	8	117	9	25	151
2007-08	5	3	8	128	20	32	180
Total	**20**	**8**	**28**	**413**	**93**	**134**	**640**

It could be seen from the above table that the percentage of private persons trained against total number of trainees was only 14.53 *per cent*[51].

There is, therefore, a need to conduct more short term courses for promotional activities with enhanced participation of private persons keeping in view the fact that these short term courses would, in turn, promote sale of data products.

Conclusion

There was an overall increase in the number of students trained by the IIRS. However, there was shortfall in the enrolment in long term courses. Further, the number of private persons trained for promoting the sale of data products was lower than participants from the Government sector. As a result, the objective of promoting the sale of data products to more and more private entrepreneurs was not fully met.

Our Recommendations	Action proposed by NRSC on recommendations
10. NRSC may ensure planned level of enrolment in customised courses to fully utilise its training facilities. It should also encourage more private participants in its short-term courses, which would encourage sale of its data products to them.	*Agreeing that it would make all efforts to comply with the recommendations, NRSC stated in February 2010 that it planned to advertise more widely the details about the short-term courses. NRSC would also ensure that more private participants were encouraged to attend the short term courses as well as if needed, conduct specific customised courses for them.*

[51] 93x100/640 = 14.53 *per cent*.