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## **Course Completion Report Application of GIS to Hydrogeology**

**Report on “GPS Training for Technical Staff of Faryab province”**

**From 29 to 30 June 2013**

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## 1. COURSE DATA:

Name of course:	Measurement of water points coordinates (Latitude and longitude location) using GPS
Number of participants:	15 trainees from FRRD, CHA, Faryab Economic department, INERSOS, Faryab Environmental protection Agency, Maimana Municipality and DACAAR
Location for training:	DACAAR north-west regional management office ( Faryab)
Date of implementation	29 – 30 June 2013
Course organiser	M. Hassan Saffi
Trainer	M. Hassan Saffi and Ahmad Jawid, Program/Technical Unit, DACAAR

## 2. COURSE OBJECTIVES

The main objective of this training course was to train Faryab province project staff for collecting correct coordinates (location) and elevation of water points using different types of GPS, enhancing participant's knowledge in dealing with GPS data, and technical capacity for using of GPS data sets for various purposes.

## 3. TRAINING FOCUS GROUP

In Afghanistan especially in Faryab province, the majority of the data from the water points have locational (longitude and latitude) problems. The water point data are not usable without coordinates in a GIS system or finding the water point with a GPS. Therefore is needed to enhance technical capacity of Faryab province staffs that collect data from the water points in field. Therefore, the GPS training course was held to enhance data collection capacity of project staff in Faryab province. The focus group of this training course were hydro-geologist, geologist, meteorologists, engineers (see table below).

S.NO	Name	Organization	Designation
3	Said Bahram	Faryab Water Management	Hydrologist
4	Mohammad Suhrab	Faryab Water Management	Meteorologist
5	Abdul Qadir	Economics Department	Monitoring Engineer
6	Mohammad Qasam	Faryab Municipality	Head of water supply
7	Matiullah	DACAAR	BSF Field Officer
8	Qader Mohammad	DACAAR	Supervisor
9	Mohammad Sarwar	CHA	Assistant Engineer
10	Eng-Namatullah	Environment Dep	Officer
11	Naqibullah Rezwani	INTERSOS	DRR officer
12	Mohammad Hadi	DACAAR	Geologist
13	Shah Mohammad	DACAAR	Assistant Engineer /WASH
14	Ziauddin	DACAAR	Field Officer/WASH
15	Saleh Mohammad	DACAAR	Field Officer/ WASH

## **4. THEORETICAL AND PRACTICAL WORK**

The main theoretical part of training course included geographical co-ordination systems (degree-minute-second, decimal degree and metric), location (longitude and latitude), location of Afghanistan in the geographical zones, evolution of GPS, data from satellite, type of GPS, GPS map, proper usage of GPS, GPS main properties (data management, map, compass, tracking, set up, store, retrieve, delete, export data), and field data transfer to GIS and Google earth.

The main practical part of training course included the measurement of location (longitude, latitude and elevation) in the field, record measured data in locally used format, plot the measured data in the map (manually), transfer data to the map by GIS and Quantum GIS, transfer recorded data to KML file and display in Google Earth. Practical activities conducted through sessions and team work using 7 GPSs, 4 computers, Quantum GIS and GPS software, field data collection format and Maimana city map. The participants practiced about getting, storing, removing, finding and transferring data from GPS. Besides, some of participants wanted to use their own GPS and computer, therefore, the Quantum GIS and GPS software were installed for them before starting practical sessions in the course. The practical work, the participants were divided in 5 groups, and measured and recorded data from the field. Participants were very eager to learn more and acquire experience during practical sessions.

## **5. SUPPORT, EQUIPMENT, LOGISTICS AND FACILITIES**

### **5.1 Training Hall**

The training took place in DACAAR north-west regional management office training Hall in Faryab province. The training room was furnished with chairs, tables, and training equipment's.

### **5.2 Training Timeline**

The theoretical part of training course started on 29 June, 2013 at 9:00 AM and it ended at 15:30 PM with 1 hour break for lunch and prayers and 15 minutes for tea break. The practical part of training course started on 30 June, 2013 at 9:00 AM and ended at 15:30 PM with 1 hour break for lunch and prayers and 15 minutes for tea break.

### **5.3 Training Equipment and Stationary**

The training material and stationary like Laptop computer, projector, projector screen, flip chart, markers, stationary, GPS, map, software, hard and soft copy of training materials, GPS and Q-GIS software and GIS shift file camera and video were provided by DACAAR and NORPLAN.

### **5.4 Training Methodology**

The methodology in the training included presentation, discussion, brainstorming, group assignments, group discussions and plotted measured field on the map (manually) and transferring data to Q-GIS.

### **5.5 Transport and Food**

The participant attended in the training course without providing any transportation for pick and drop, but NORPLAN compensated the transportation cost by paying \$10 per day per person. Tea breaks and lunch were provided by NORPLAN and facilitated by DACAAR during the training days.

## **6. EVALUATION OF THE TRAINING COURSE BY THE PARTICIPANTS**

The course evaluation form is available on the web in full with comments. In summary the questions for evaluation were as follows:

**Question 1:** Did the training course meet your expectations?

1=Completely, 2=Partially, 3= Not at all,

Response: Completely: 95%, partially 5%, Not at all 0%

**Question 2:** What do you think about the overall relevance of training course? Considering the limits on your time and the topics discussed?

1= Too Long, 2= Just right, 3 = Too short

Response: Too Long : 8%, Just right 66%, Too short 26%.

**Question 3:** How the relevant was the training workshop to your organization or project's need?

1= Very relevant, 2 = Somewhat relevant, 3 = Not relevant

Response: Very relevant: 80%, Somewhat relevant 20%, Not relevant 0%.

## **7. CONCLUSION**

During the training course, the trainees were provided with environment that encouraged participatory learning throughout the training sessions and team work in the field. The participants were encouraged to share their ideas, knowledge and experiences. The trainers used several different participatory methods that proved successful. The application of the training module was useful to the participants, which maintained their interest. The participants were also extremely appreciative of the training materials, sessions, teamwork in the field and in the training hall and thankful for the work done to run the courses. The participants were all extremely attentive, cooperative, positive and appreciative of the course and this was seen as partly an indication of the years of lack of professional development. The participants will be able to use the skill and knowledge to improve their work performance on their job.

## **8. RECOMMENDATIONS**

- A follow-up course is necessary in the future
- The training hall was not suitable for such kind of training course; it is needed to rent a better-suited training hall for future training courses.
- There is need for other technical training for enhancing knowledge, technical capacity building of Faryab province technical staffs for better implementation and data collection.
- The course duration of 2 days seems to be fine, but some of participants wanted more time and longer period.