Ministry of Forests and Soil Conservation
REDD Implementation Center

Develop National Database of Basic Attributes of all Forest Management Regimes and Develop National REDD+ Information System or Registry

Contract No: (FCPF/REDD/S/QCBS-24)

Technical Working Document n. 13 to Final Report

Report on training on GIS Component of NFD/NFIS conducted at Central and Regional level (Kathmandu and Pokhara)

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Table of Contents

1. Introduction

The present report briefly describes the outcome of the training sessions for the GIS NFID/NFIS component held on March, 11 2016 at Central level (Kathmandu) and from 20 to 22 March 2016 at Regional level (Western Region) in Pokhara. The Regional training was attended by around 50 participants. The present document mainly refers to the Regional workshop, given the scope and nature of the NFD/NFIS Project.

The training went in a smooth way, despite of the initial power cuts and internet speed problems. The officially registered participants arrived on time. Some of them came with their own laptop, and a GIS software with evaluation license was installed and our IT experts (programmers) were around all the time in order to make sure that all the computers where functional.

People from Regional Center and District Forest Office spontaneously joined in. Support from regional forest office at Pokhara helped a lot for managing venue, facilities, food and tea management during training sessions.

Participants were very interested, and it was difficult to convince them to take a break or to have lunch. It was therefore good to have lunch outside building so that everyone could relax for a while and enjoy the lake shore during lunch break. In general, logistics with bus, restaurant and hotel went smoothly.

2. Training contents

The initial training manual was prepared and distributed to training participants.

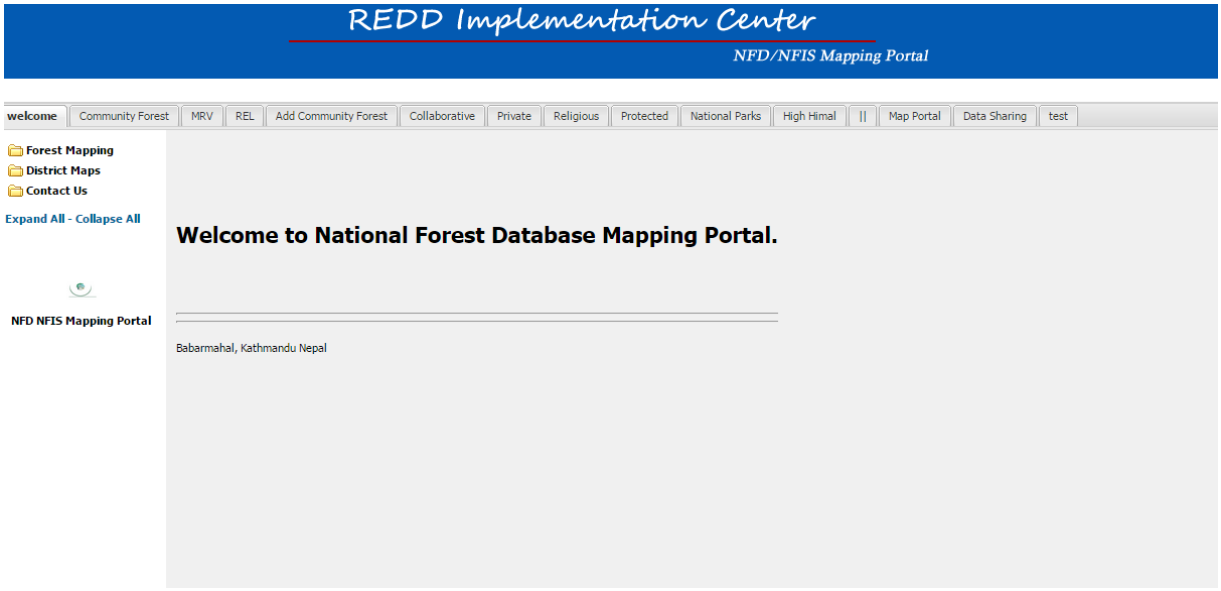
Presentation and training mainly focused on

- Publish maps online (Mobile, laptops, computer) without mapping software
- Automcally updates based on online database
- Sharing maps online
- Able to overlay with Google, bing and other maps
- Desktop client use to prepare their own map (ArcGIS, QGIS)
- Central repository of mapping products

2.1 Viewing map layers

Interface of NFD/NFIS Mapping Portal can be opened clicking GIS menu of main page of NFD/ NFIS portal.

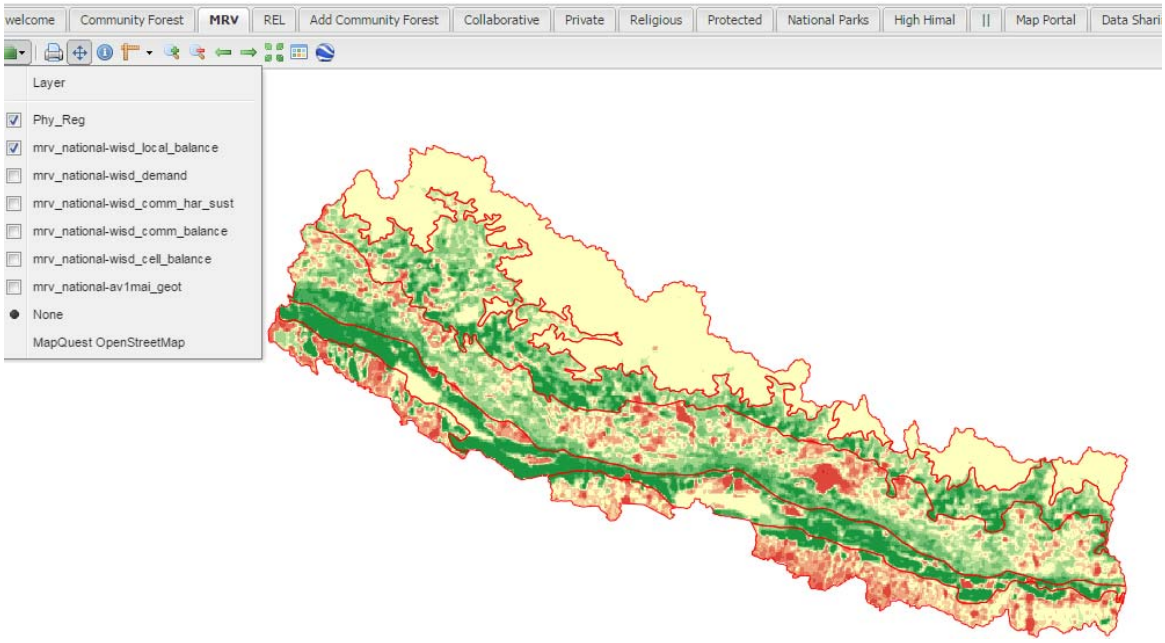
Menus and Icons are arranged on left and top of the intrface.



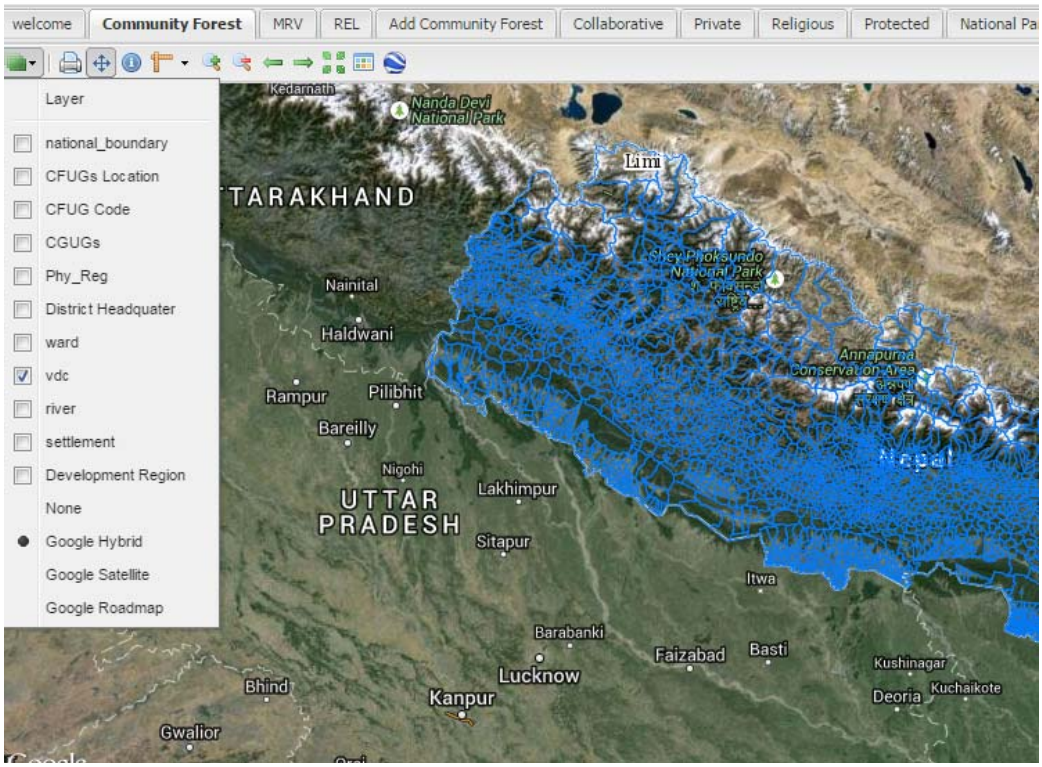
Çlick left panel to see desired map. There are different options on top of each interface for

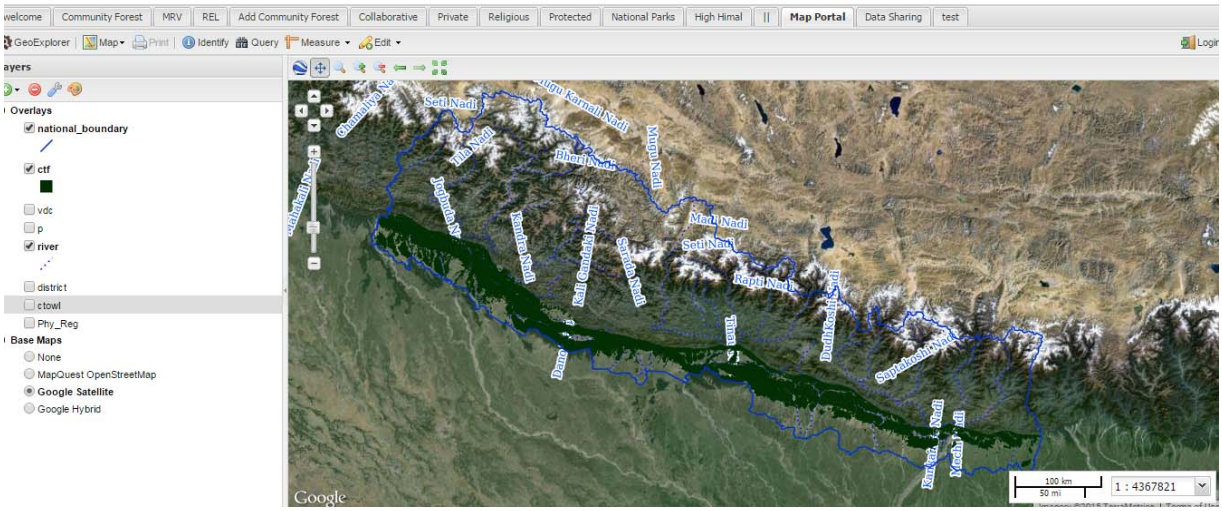
- Selecting layers
- Panning
- Zoom in and Zoom out
- Legend

Select check box to visualize required layer.



Multiple layers and background layer can be selected





Maps with Google background

2.2 Adding and Uploading spatial data

For uploding existing shape file click add button on the menu. It will require user authontication to upload.

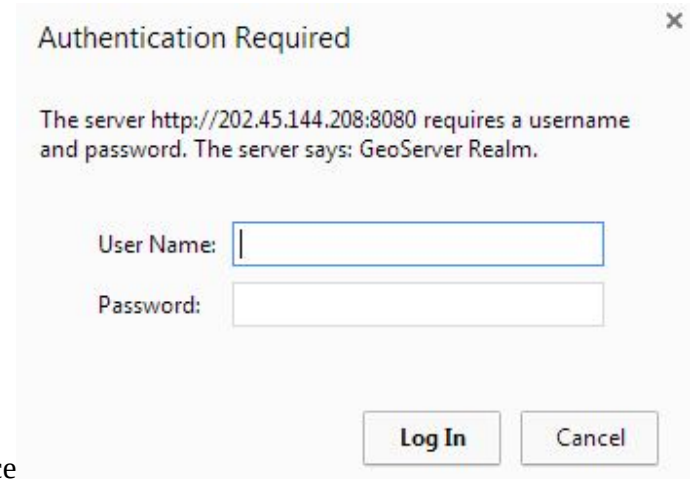
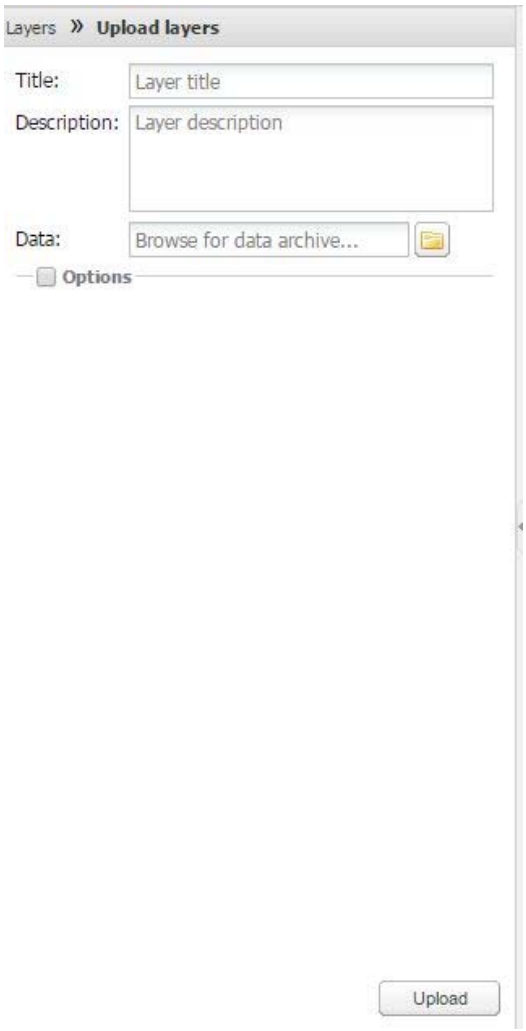
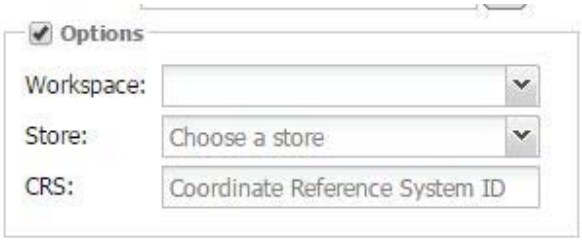


Fig login interface



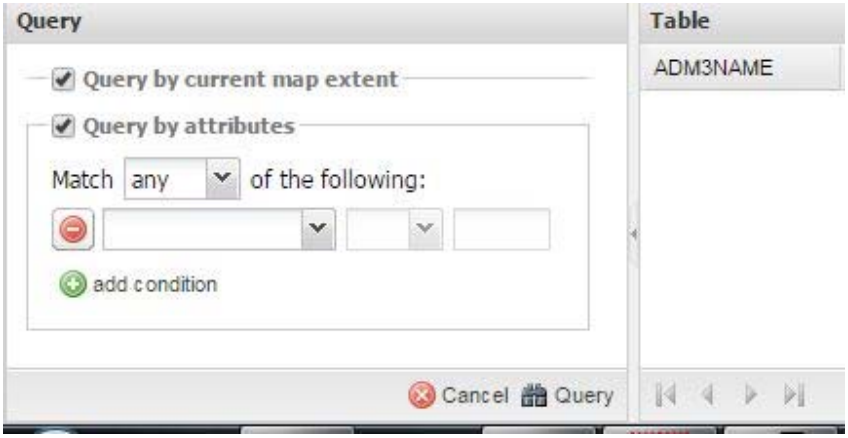
Browse the required file and click upload.



Click option to select workspace, data store and reference system.

2.3 Querying spatial maps

Querying is possible by providing different search criteria. Select the layer to query and provide required query statement. You can query more than one condition. To select multiple condition select add condition.



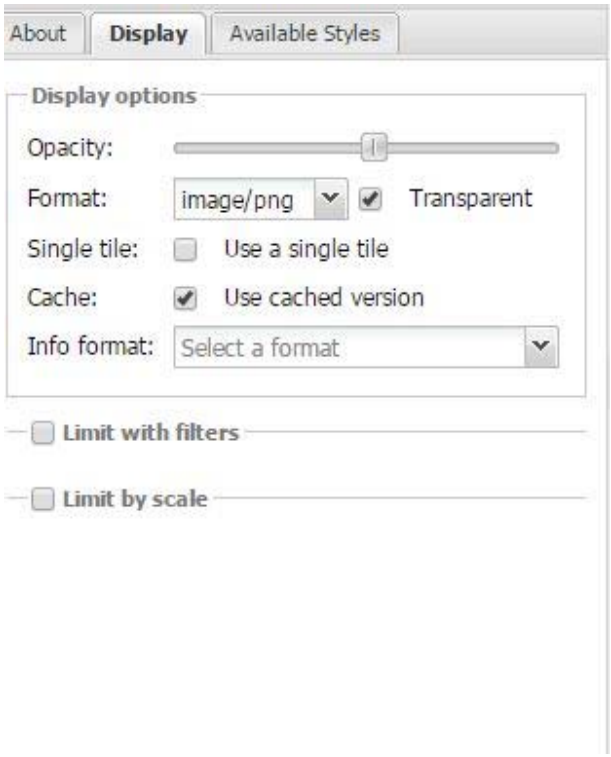
2.4 Measuring tool

You can measure area, length of map online. Click measuring tool

2.5 Styling

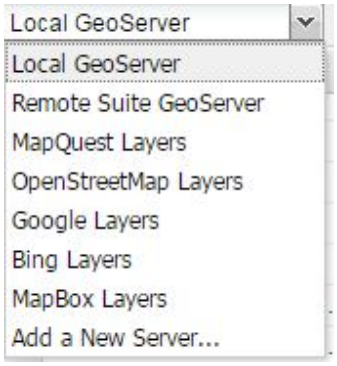
To change color and text automated styling tool is available. Select fefault style to view the the current style. Click edit icon to change the current style.

On display section you can change opacity so that you can see underlaying layers when they are overlapped.



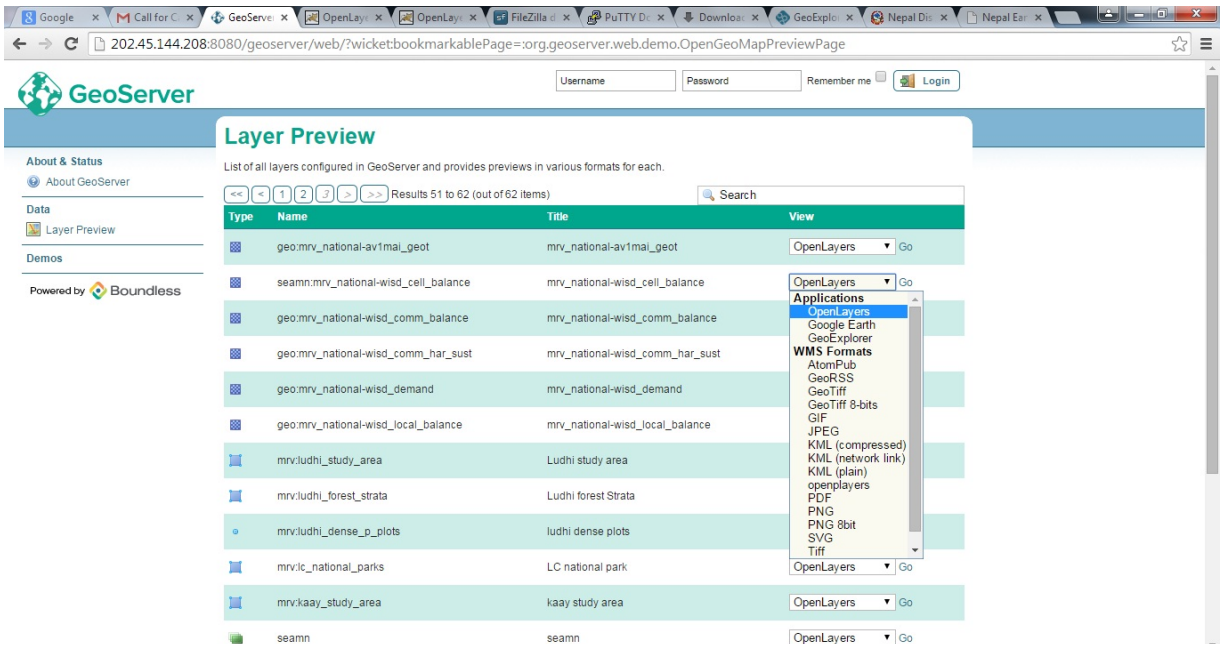
2.6 Adding base layers and remote servers

You can select Google, Bing and other base layers. If you have other Geoserver location you can add the Remote Geoserver layers in your current map interface.



2.7 Exporting map layers

For exporting Map layers in other formats like pdf, jpeg, kml and shape file, log on the geoserver main page and select layers preview. On view drop down menu select the desired format. While clicking it automatically downloads the required format of map.

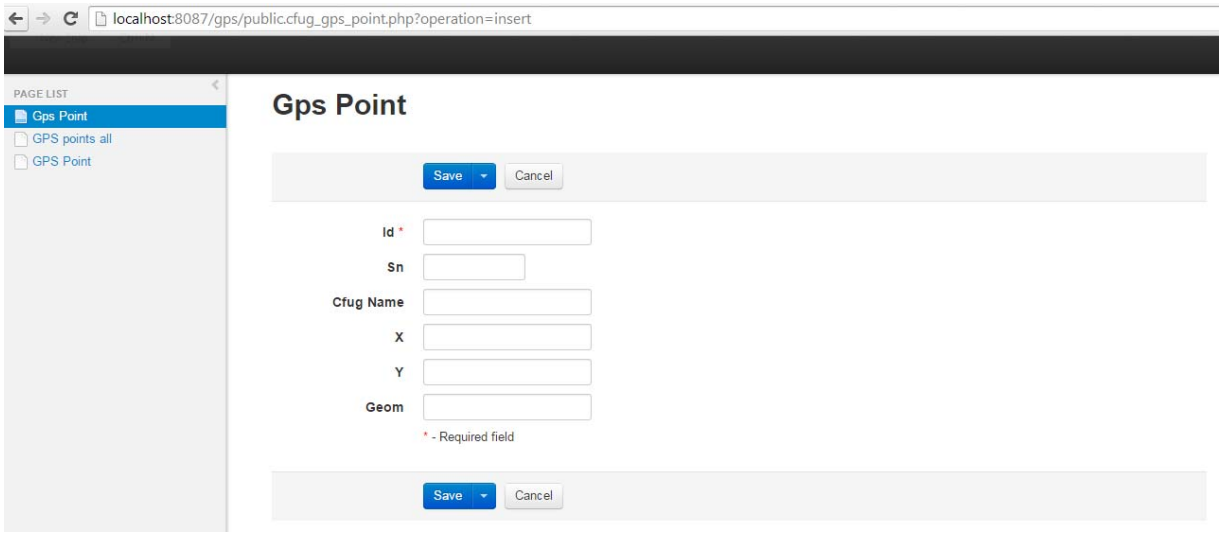


2.8 Adding GPS points

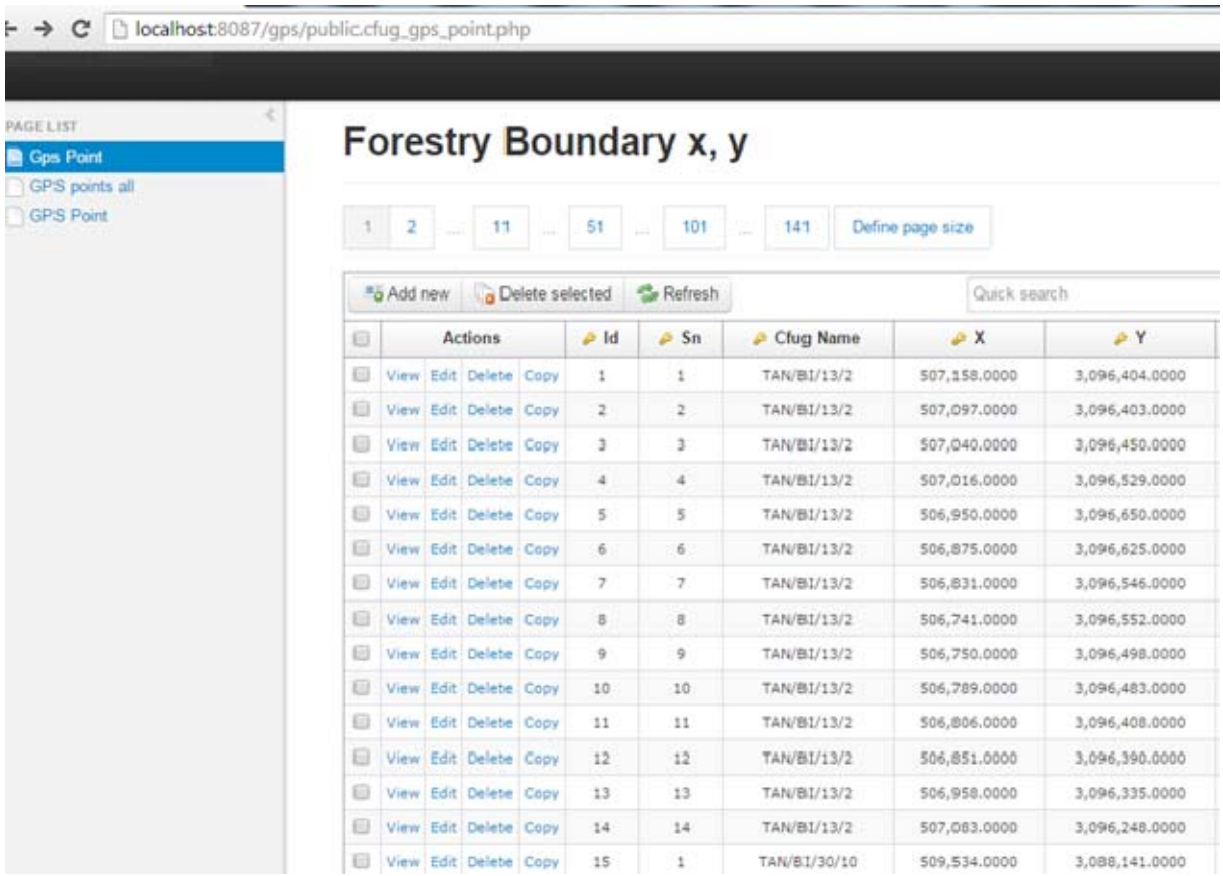
Mostly forest boundaries are measured by using GPS survey. This GPS data require processing to create boundary and GIS skills and software, which are commonly not available, especially at local level. For this purpose, NFDNFIS has developed a user's friendly interface that can easily upload GPS points in the central database. It automatically create GPS location on a map, even for users with limited GIS experience.

2.8.1 Single cooridinates

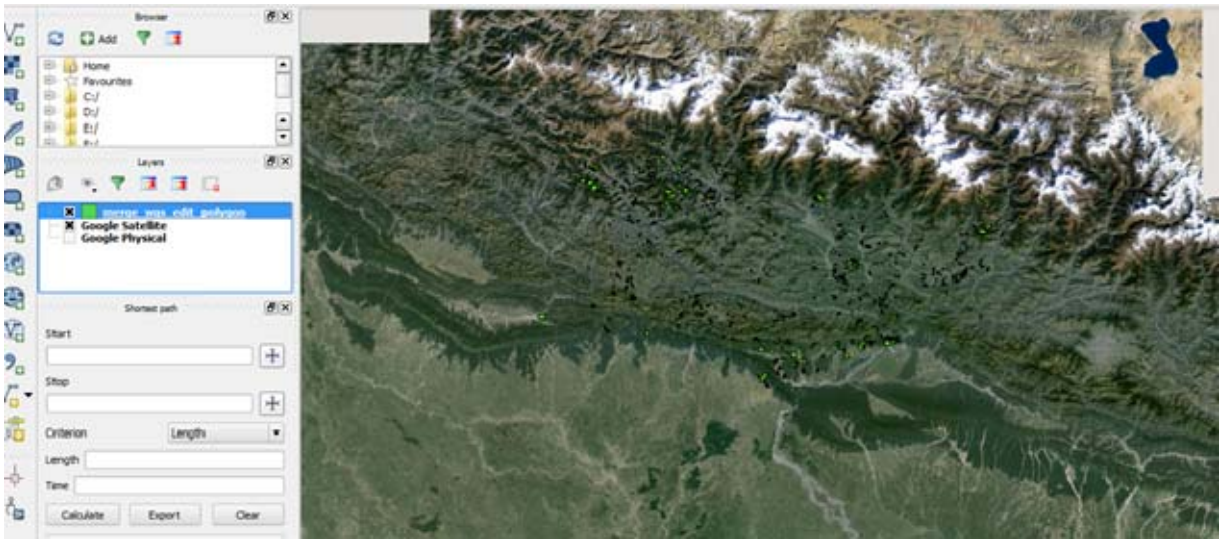
For individual GPS point click GPS point on left pane and it will show data input form where you can enter X and Y. coordinates.



Single points (GPS Point Option from PAGE LIST), can be used for forest boundaries or for other typical point location like wells, water sources, buildings of interest, nursery locations and so on, in for visualizing the generated point map in desktop QGIS or online in NFD/NFIS mapping portal, as in the example below.

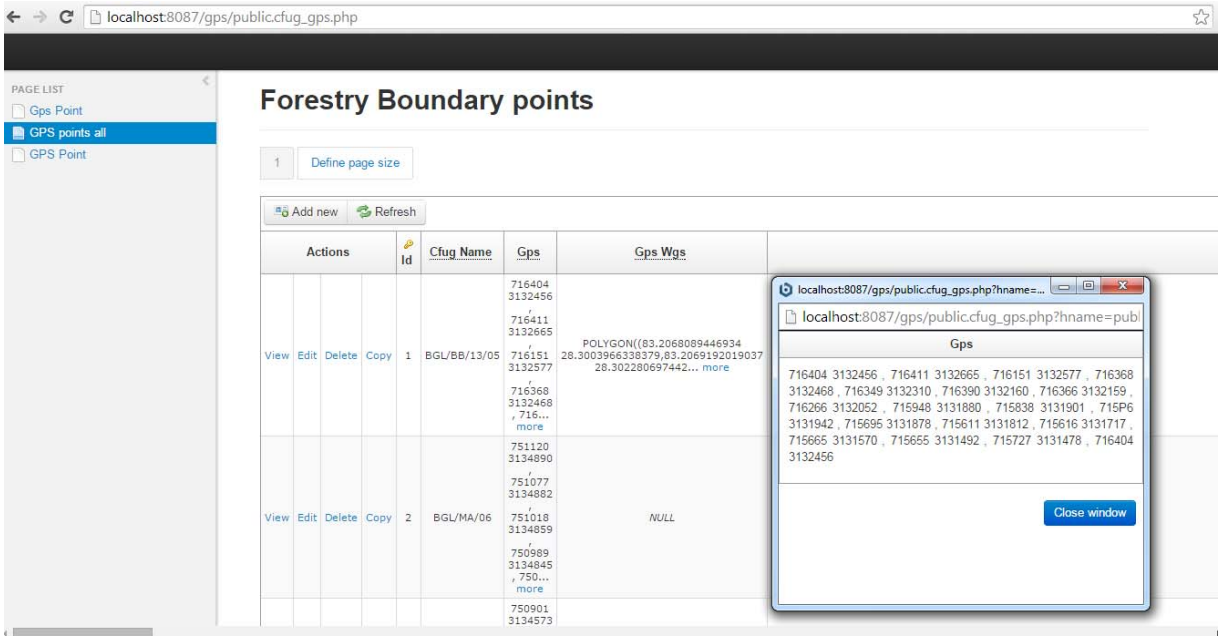


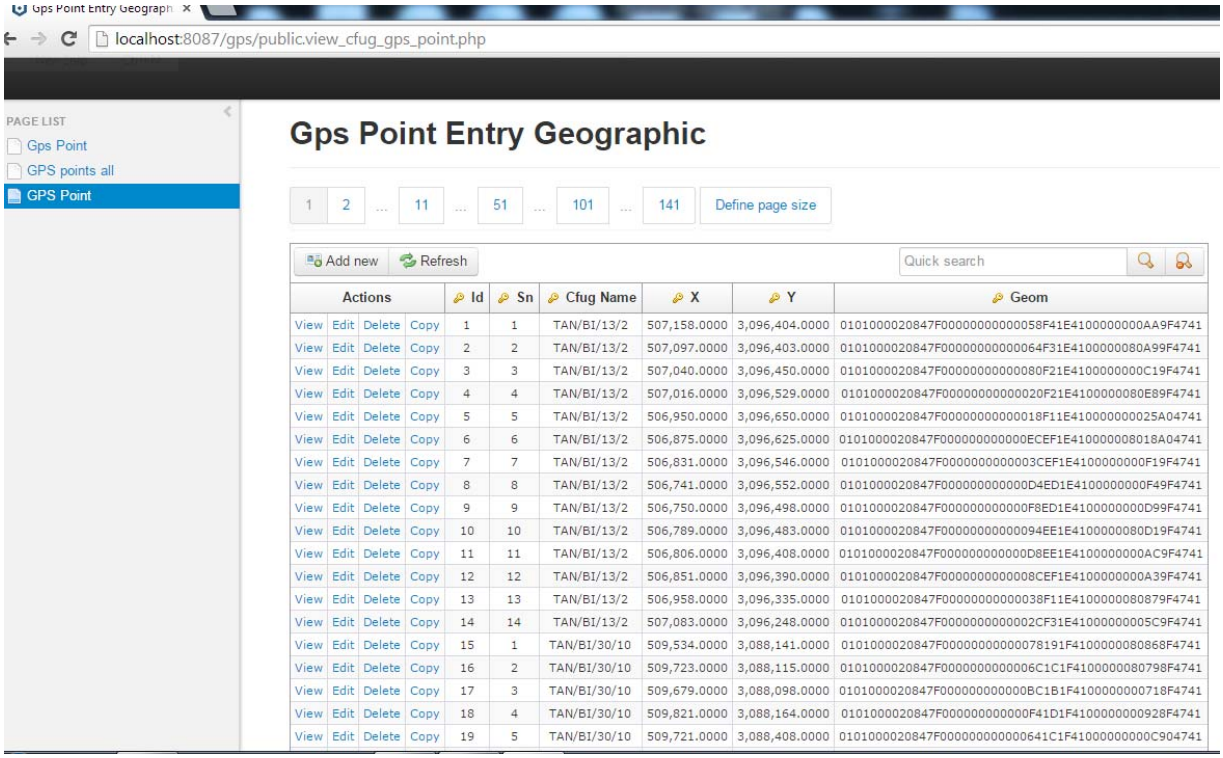
Actions	Id	Sn	Cfug Name	X	Y
View Edit Delete Copy	1	1	TAN/BI/13/2	507,158.0000	3,096,404.0000
View Edit Delete Copy	2	2	TAN/BI/13/2	507,097.0000	3,096,403.0000
View Edit Delete Copy	3	3	TAN/BI/13/2	507,040.0000	3,096,450.0000
View Edit Delete Copy	4	4	TAN/BI/13/2	507,016.0000	3,096,529.0000
View Edit Delete Copy	5	5	TAN/BI/13/2	506,950.0000	3,096,650.0000
View Edit Delete Copy	6	6	TAN/BI/13/2	506,875.0000	3,096,625.0000
View Edit Delete Copy	7	7	TAN/BI/13/2	506,831.0000	3,096,546.0000
View Edit Delete Copy	8	8	TAN/BI/13/2	506,741.0000	3,096,552.0000
View Edit Delete Copy	9	9	TAN/BI/13/2	506,750.0000	3,096,498.0000
View Edit Delete Copy	10	10	TAN/BI/13/2	506,789.0000	3,096,483.0000
View Edit Delete Copy	11	11	TAN/BI/13/2	506,806.0000	3,096,408.0000
View Edit Delete Copy	12	12	TAN/BI/13/2	506,851.0000	3,096,390.0000
View Edit Delete Copy	13	13	TAN/BI/13/2	506,958.0000	3,096,335.0000
View Edit Delete Copy	14	14	TAN/BI/13/2	507,083.0000	3,096,248.0000
View Edit Delete Copy	15	1	TAN/BI/30/10	509,534.0000	3,088,141.0000



2.8.2 Multiple coordinates for boundary

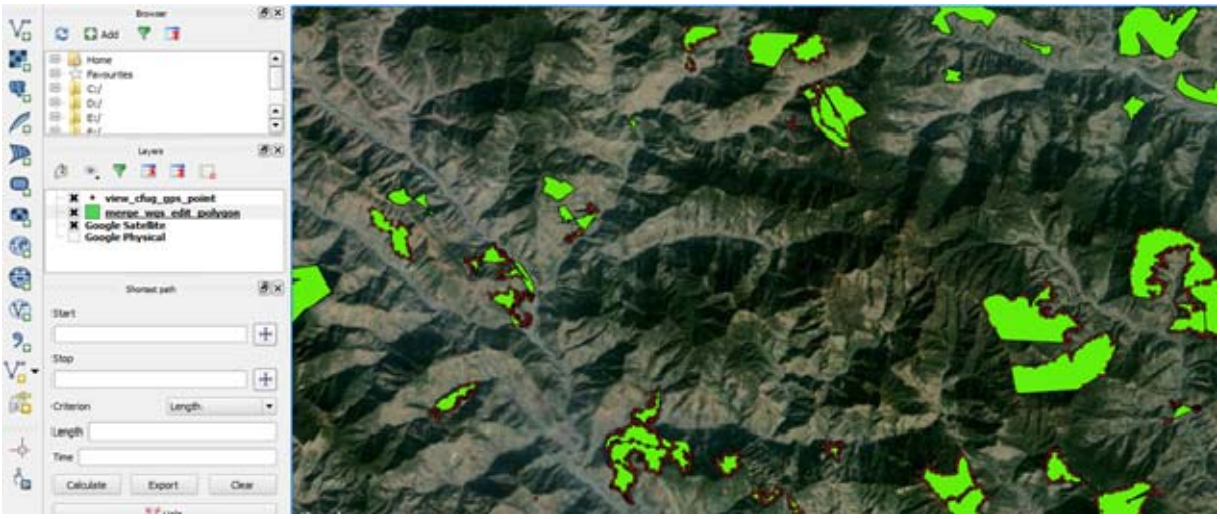
For complete boundary you can add all point once (Starting and Ending Point) from GPS Point all sub-menu. It requires reference system and it creates forest boundary.



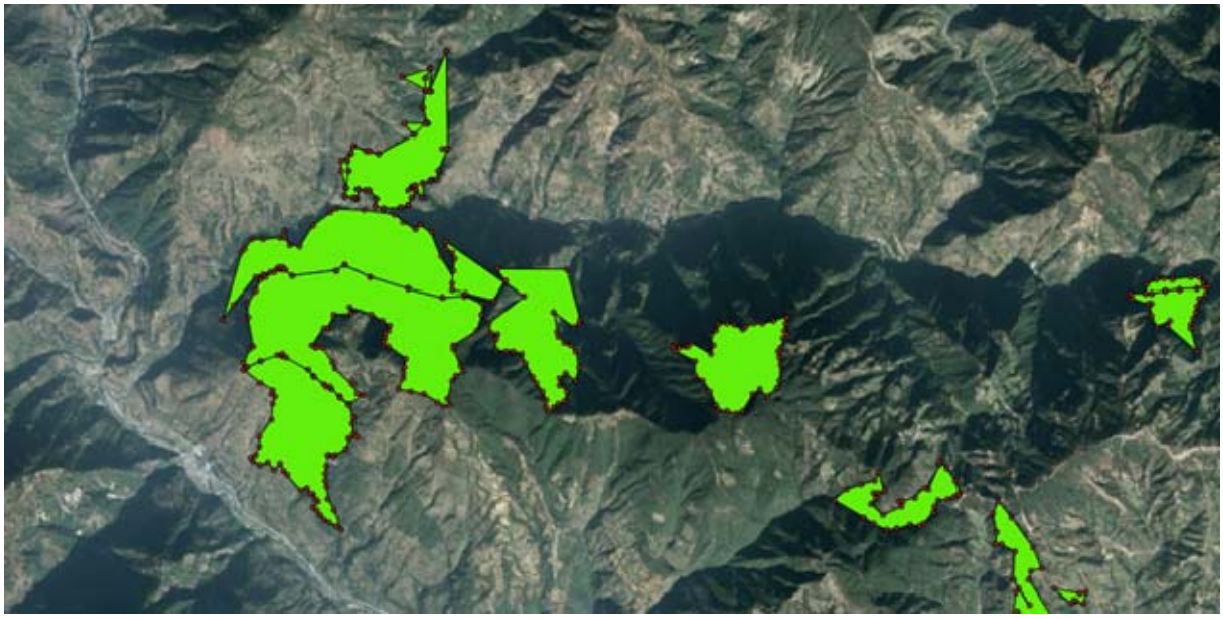


Once points are entered an automatic mapping code is generated by the application and the resulting map is as follows.

CFUG boundaries created entered GPS points

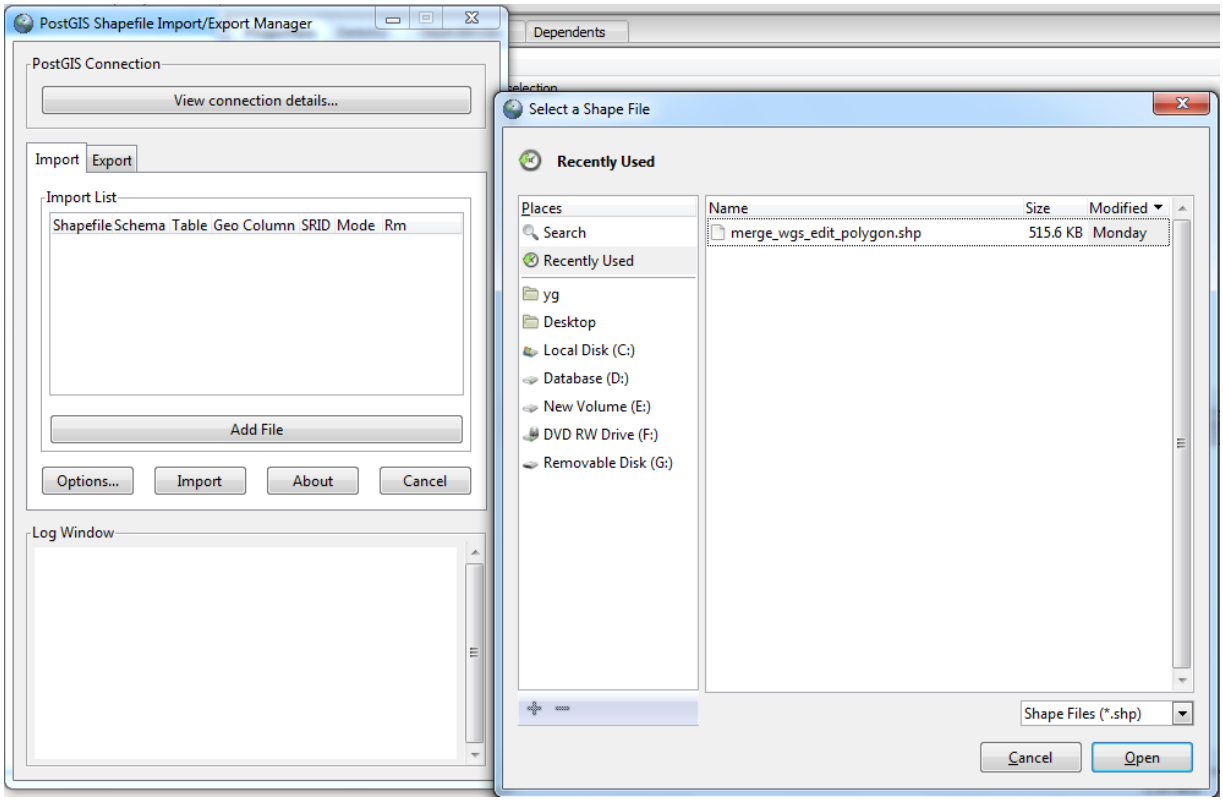


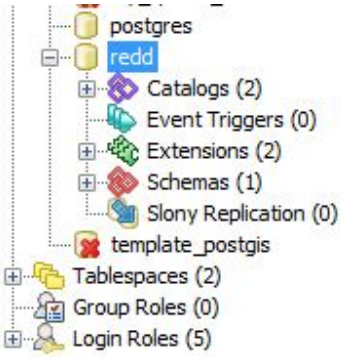
CFUG boundaries viewed on QGIS



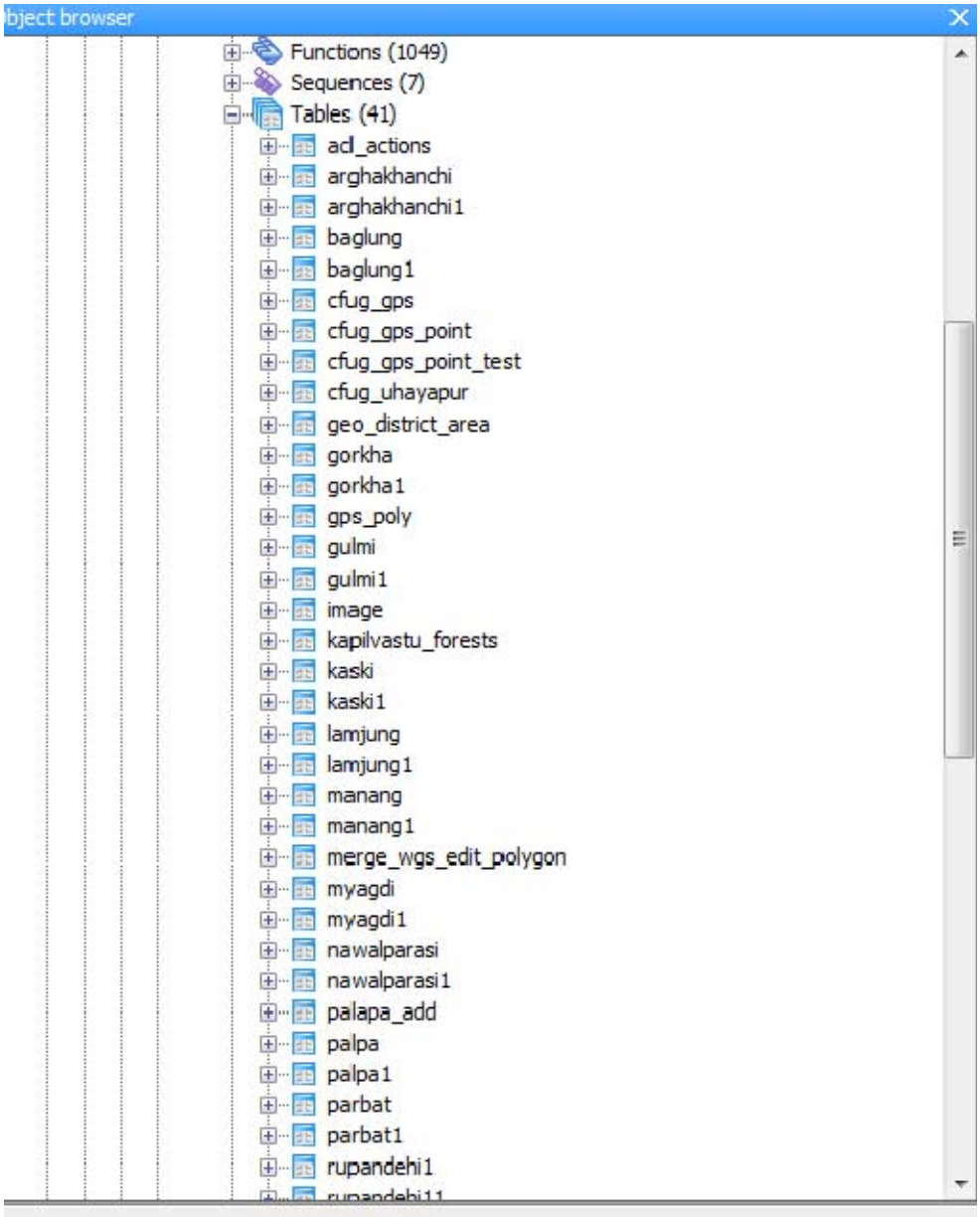
2.9 Uploading files in PostGIS

Shape files can finally be uploaded into the server using the shapefile Import/Export Manager using the following dialog box.





Database of western region Districts GPS point.


bject browser
Functions (1049)
Sequences (7)
Tables (41)
acl_actions
arghakhanchi
arghakhanchi1
baglung
baglung1
cfug_gps
cfug_gps_point
cfug_gps_point_test
cfug_uhayapur
geo_district_area
gorkha
gorkha1
gps_poly
gulmi
gulmi1
image
kapilvastu_forests
kaski
kaski1
lamjung
lamjung1
manang
manang1
merge_wgs_edit_polygon
myagdi
myagdi1
nawalparasi
nawalparasi1
palapa_add
palpa
palpa1
parbat
parbat1
rupandehi1

3. Conclusions and recommendations

The demo and exercises worked well, as the people who learnt fast were never bored. Nonetheless, “felt obliged” to solve the advanced questions too, which might be the reason why everyone had the feeling to not have enough time.

Participation evaluation

During the whole week, participants seemed happy and truly interested in the topics. The fact the number of participants increased during the week, and coffee break where only very short, seems to be a good indicator that the training was interesting and went well.

It is also very interesting to see that most of the people felt they had excellent support by the trainer while others felt that they did not get enough support. This might reflect the fact that trainers’ time was shared unequally between the participants.

Future improvement

Some contents should be rearranged in a better way. Also synergies between systems should better consider in order to decrease the amount of manipulations. In this way, time could be saved and participants have less the feeling of being rushed.

Discussion space should be more participant oriented, this means participants should be given the chance to present their work and explain what they learnt rather than the trainers explaining the challenges contained in each exercise. This might take more time and might be relatively more difficult to manage.

Some mistakes have been found, and need to be corrected. Also each chapter should have a learning objective.

It would be smart to have a “trainer” manual, explaining the challenge and learning objective each specific exercise in a form of a check list. In this way, the training can be made available to other institutions, without needing any of the authors as a trainer.

Others

Most of the district office have great resource of spatial database but it is not recorded and not available while searching. Utilizing this system will help a lot for sharing existing information but it requires clear instruction and role and responsibility for the district staffs to use and update the system.