



Presented by Svein Stoveland, Norplan at annual meeting Kabul, November 2014

MRRD- RuWatSIP, NORAD funded Project

Capacity Building and
Institutional Cooperation in
the field of Hydrogeology for
Faryab Province



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Content of presentation

- ❖ Focus on project-
- ❖ Target groups
- ❖ Topics
- ❖ Project schedule
- ❖ Progress
 - ❖ Hydrogeology
 - ❖ GIS
 - ❖ Wat- SAN
 - ❖ Training programmes
 - ❖ Reporting
 - ❖ Annual meeting guidance needed.





RUWATSIP, MRRD

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DEVELOPMENT OF METHODS

PROJECT ACTIVITIES

TRAINING & CAPACITY BUILDING

OUTPUTS

Design hydrogeological methods

Design Database / GIS-MIS system

Prepare methods for use of hydrogeo data in water supply planning and design

Collect data about ground water resources, desk study, field survey

Data analysis, make GIS & Web ground water user maps

Use maps to plan/ design good rural water supplies

About 25 short courses run twice practical/theoretical

3 geophysical investigations
8 hydrogeology

5 GIS -database software
2 data capture/managem

3 Plan. WS using maps
5 WS technology & design
2 O&M, managem, social

- 200 - 400 persons trained
- Provincial hydrogeological survey methodology developed
- Hydrogeological survey for Faryab province (pilot)
- Database for hydrogeological data set
- GIS Hydrogeological mapping system for pc and paper maps
- Web "Water Use Atlas"
- Capacity building in MRRD RuWatSIP and sector agencies
- Survey and prelim design WS for 3 towns

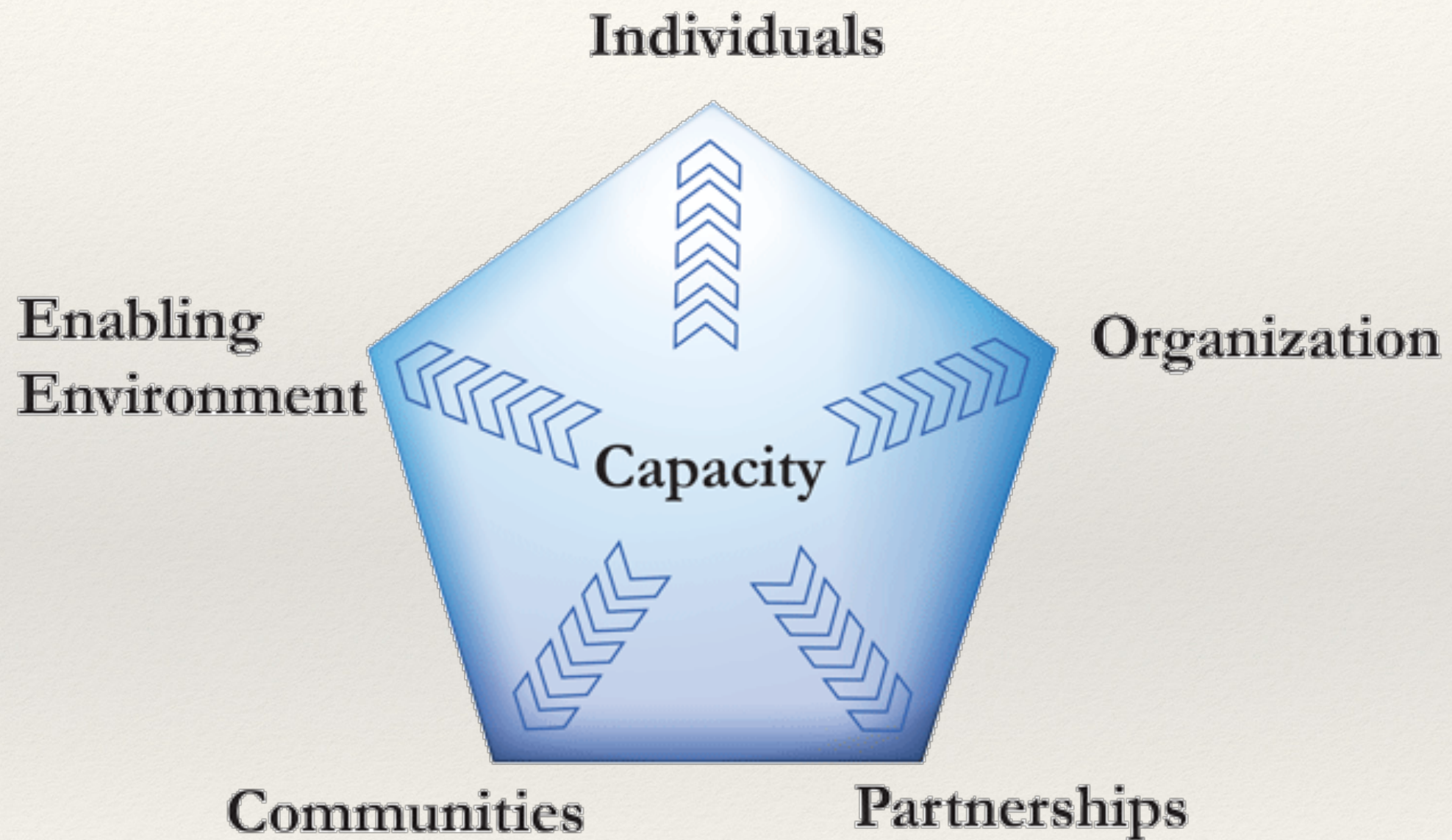
NORAD Support to MRRD, RUWatSIP for Capacity-Building and Institutional Cooperation in the Field of Hydrogeology for Faryab Province, Project



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CAPACITY BUILDING





Lorem Ipsum Dolor

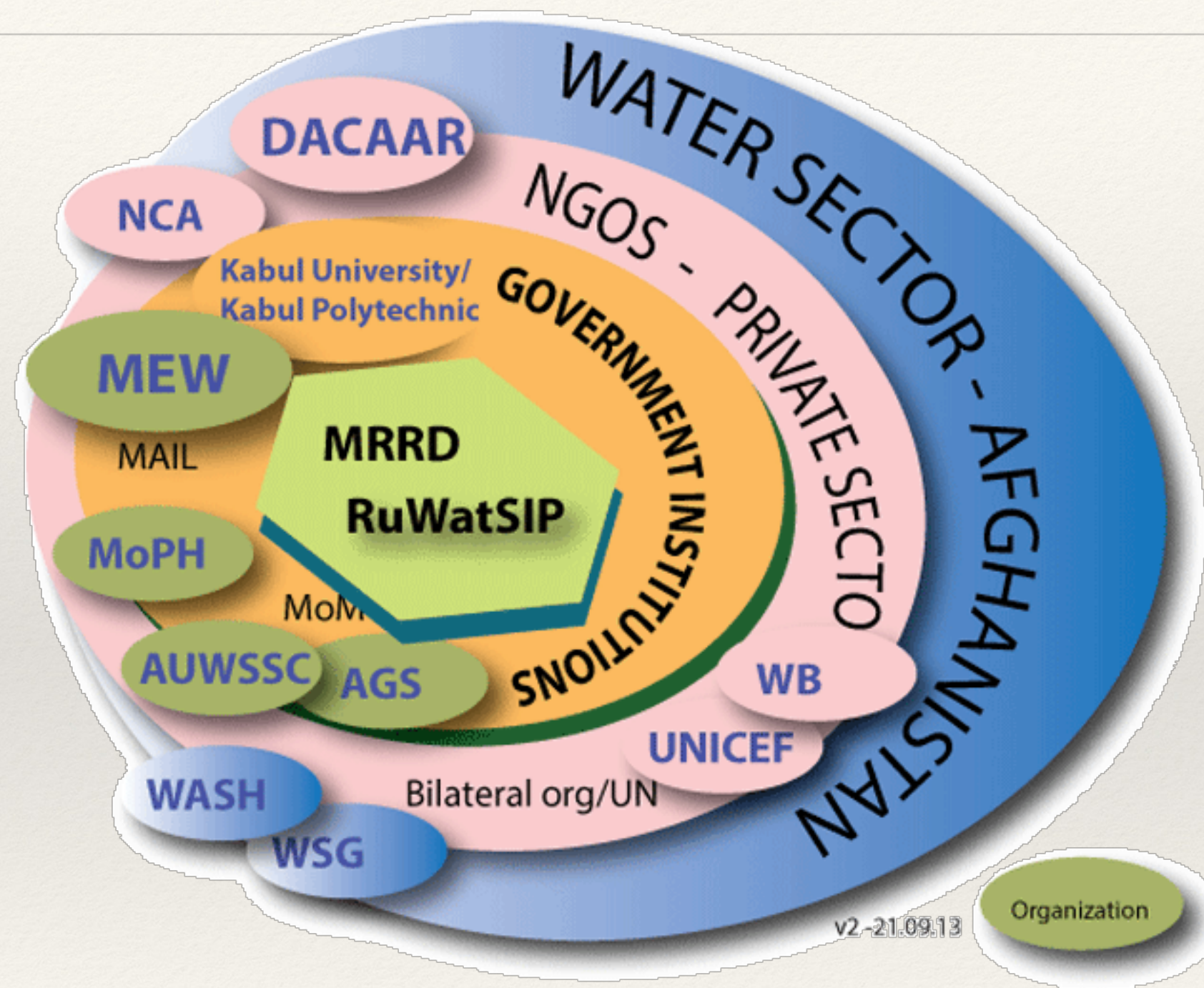
National activities
with Faryab at pilot
province



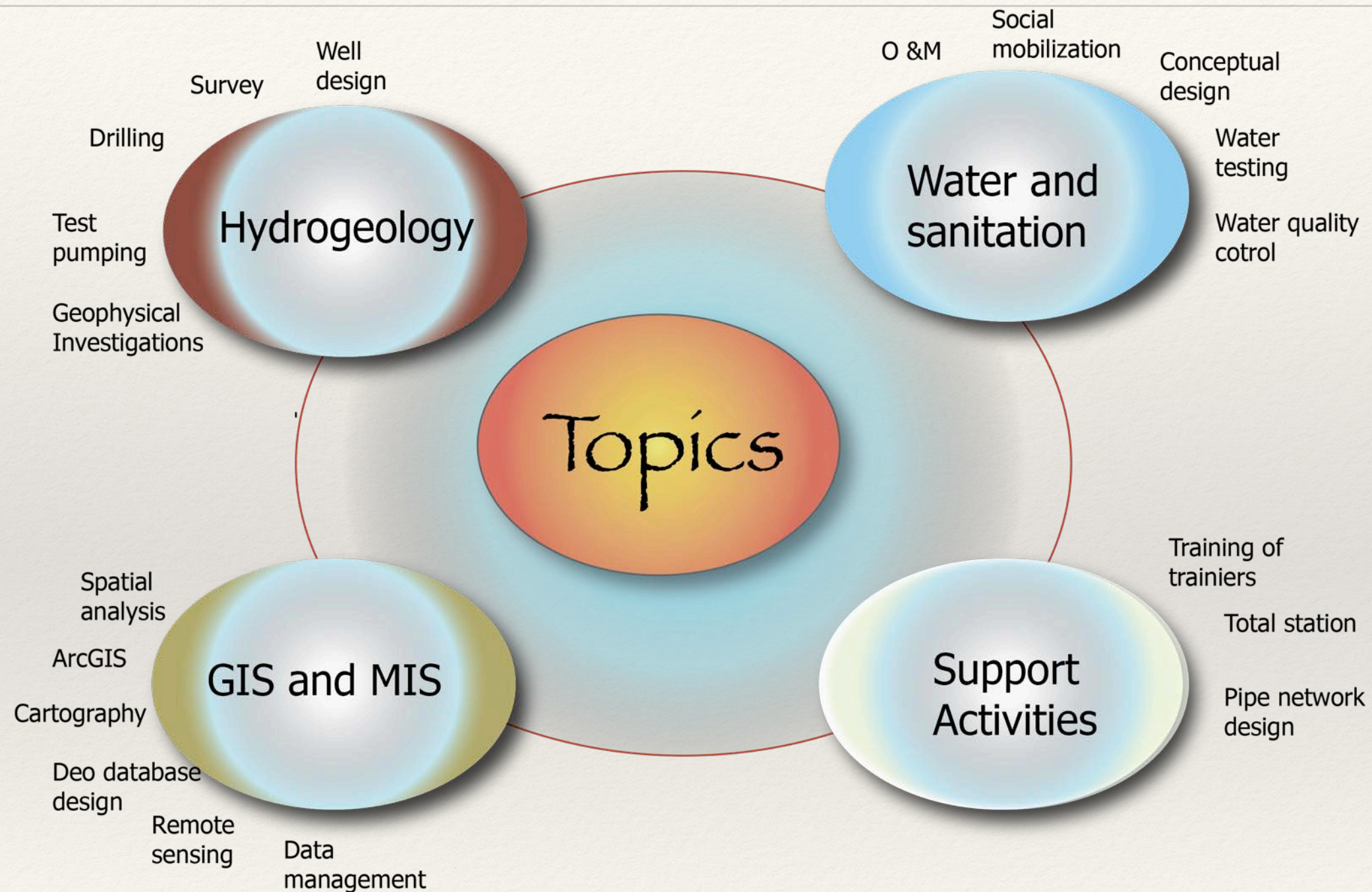
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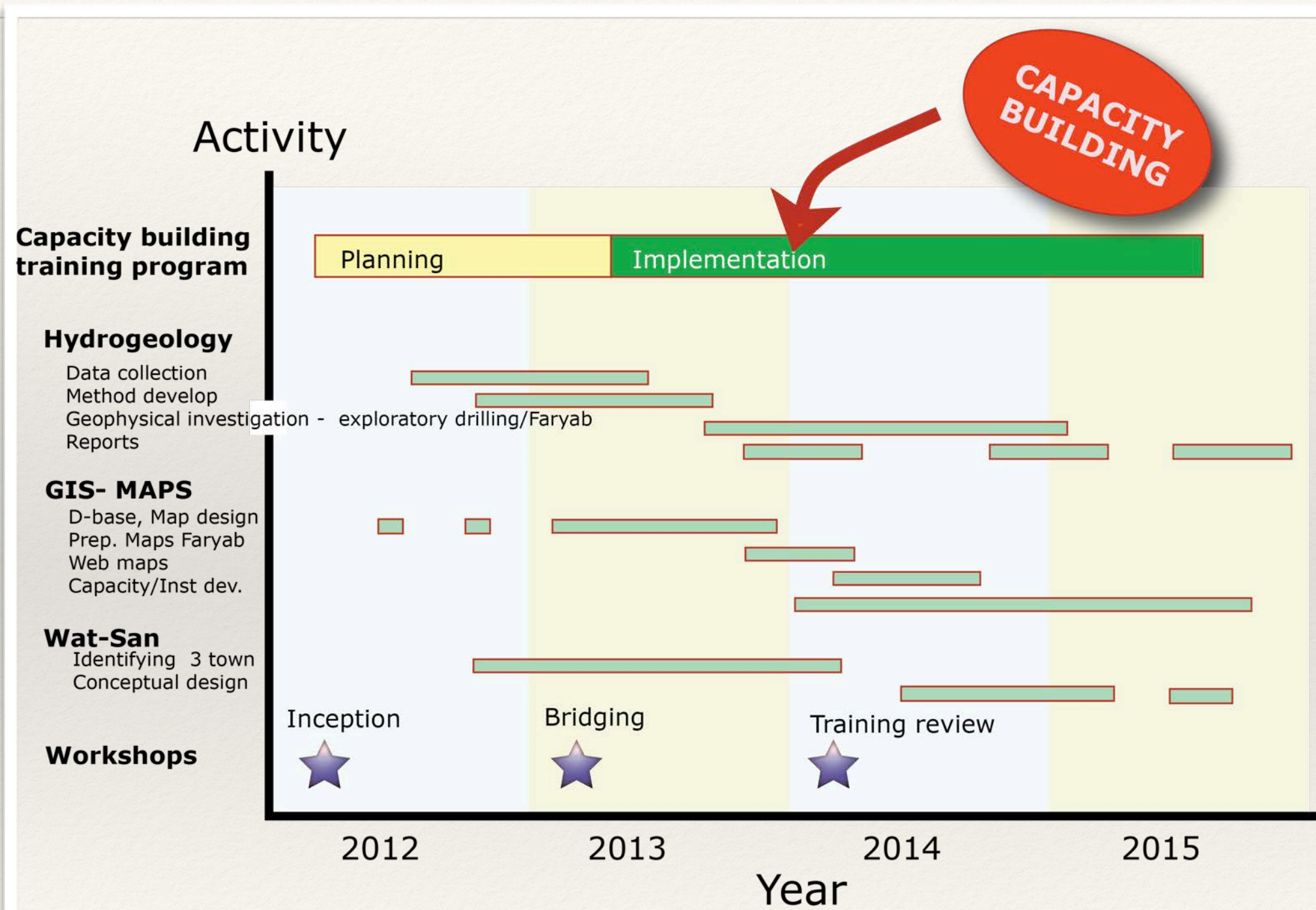
Key project stakeholders



Themes for training



Overview of time schedule



General status

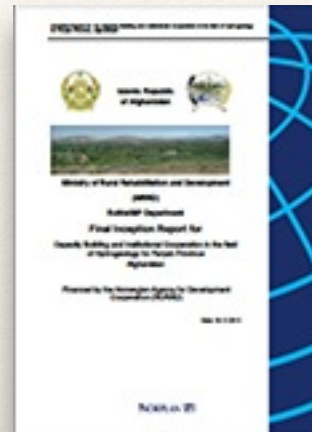


- ❖ First year: Slow startup
- ❖ 2 and 3rd year: Good progress and outputs
- ❖ Status now: Much activities at all levels. Much Action on hydrogeology, exploratory drilling, training , and development of online maps. Technology testing progressing. Lab quality control supported.
- ❖ Looking forward: Things are moving well now.



Reporting 2012

Revised Inception
report, and
budget, March
2012



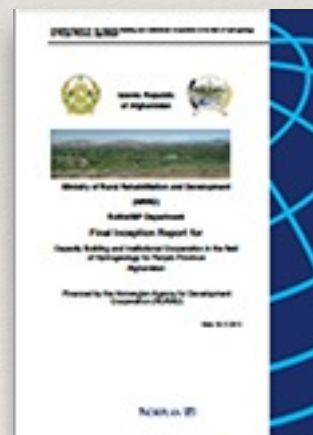
Budget



Inception
Workshop Report

ANNUAL MEETING NOVEMBER 2012

Revised Inception
report, and
budget,
December 2012



Repost



Budget



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Reporting 2013

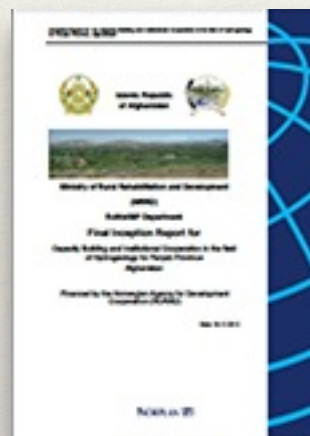
Continuous
project update,
Web
www.norplan.af



Bridging
Workshop Report



Planning report,
and budget,
September 2013



Planning
report



Revised
Budget



Progress
report 2

Progress
report 3 -
comparison to
TOR



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Reporting 2014

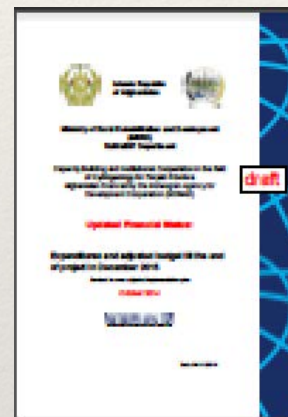
Continuous
project update,
Web
www.norplan.af



Mid Term report
by COWI Consult



Training
Output
overview



Revised
Budget Sept14



Progress
report 4



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All info on Web
www.norplan.af



Norplan in Afghanistan from 2012

HOME OBJECTIVE ACTIVITIES OUTPUTS FARYAB GENDER KEY ACTORS NEWS CONTACT US

RuWatSIP STAFF COORDINATION HYDROGEO. GIS-MIS WAT-SAN TRAINING MANAGEMENT PROGRESS

CAPACITY BUILDING AND INSTITUTIONAL COOPERATION IN HYDROGEOLOGY WITH MRRD FOR PILOT PROVINCE FARYAB

 Picture Gallery  Short Videos Training  R & D Technology  Thematic illustrations



News heading

[more news](#)

[More that 200 now trained](#)

Project Summary

The project has focus on implementing a hydrogeological survey in Faryab Province, using that province as a pilot area to develop a methodology for provincial hydrogeological mapping. With the methodology developed, train RuWatSIP/MRRD and key Rural Water water supply and sanitation sector actors) so that a the rest of the provinces can later be covered by the ministry using trained staff, developed hydrogeological GIS maps and a developed web water user atlas for ground water. The field work and pilot area is Faryab province while the methodologies and capacities will be focussed much on National level sector developmen



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Filed survey and sampling in Faryab, b DACAAR

Hydrogeology



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Hydrogeology

Hydrogeology:

Desk study : hydrogeology for Faryab

Internet, visit offices in Kabul, Govt, NGOs, Archives, Moscow

Developed Methods:

- Defined field surveying methods
- Completed method how to conduct provincial hydrogeological survey.

Collecting existing data

Field surveys of water facilities, 200 addn. facilities

Sampling snow, water, soil

River profiling of water movement, evaporation and water loss.

Hydrogeology cont.-

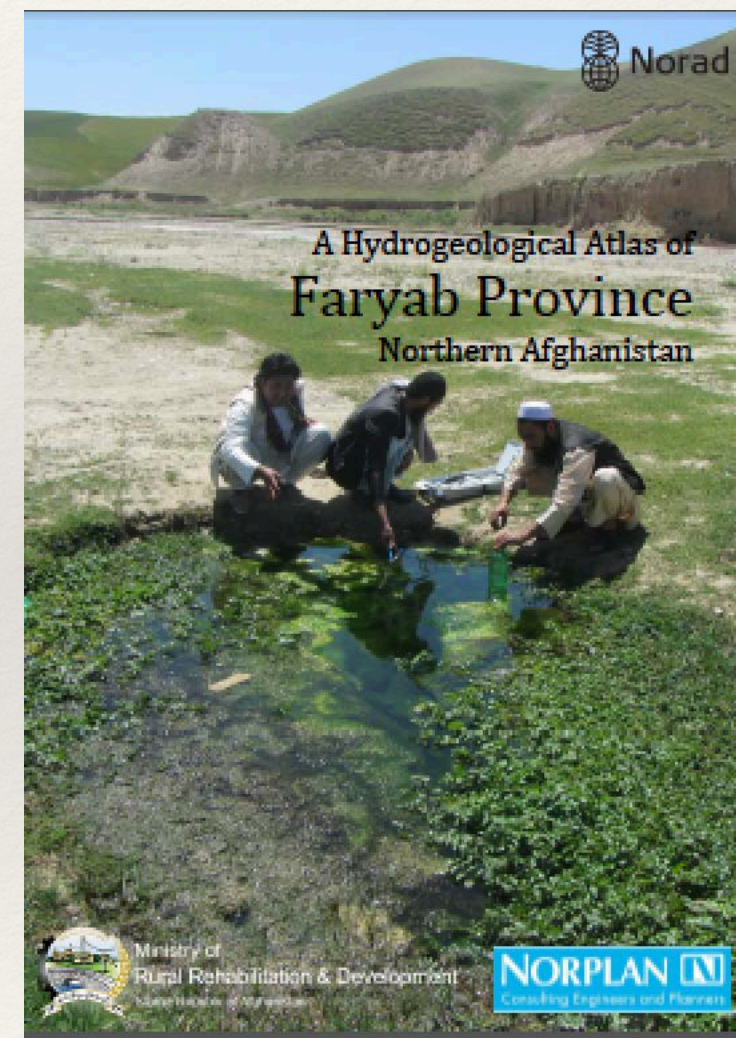
Data analysis

Data analysis, 250 samples

Screening data for about 2000 records

Data reporting:

Complete Hydrogeological Atlas &
report for Faryab .



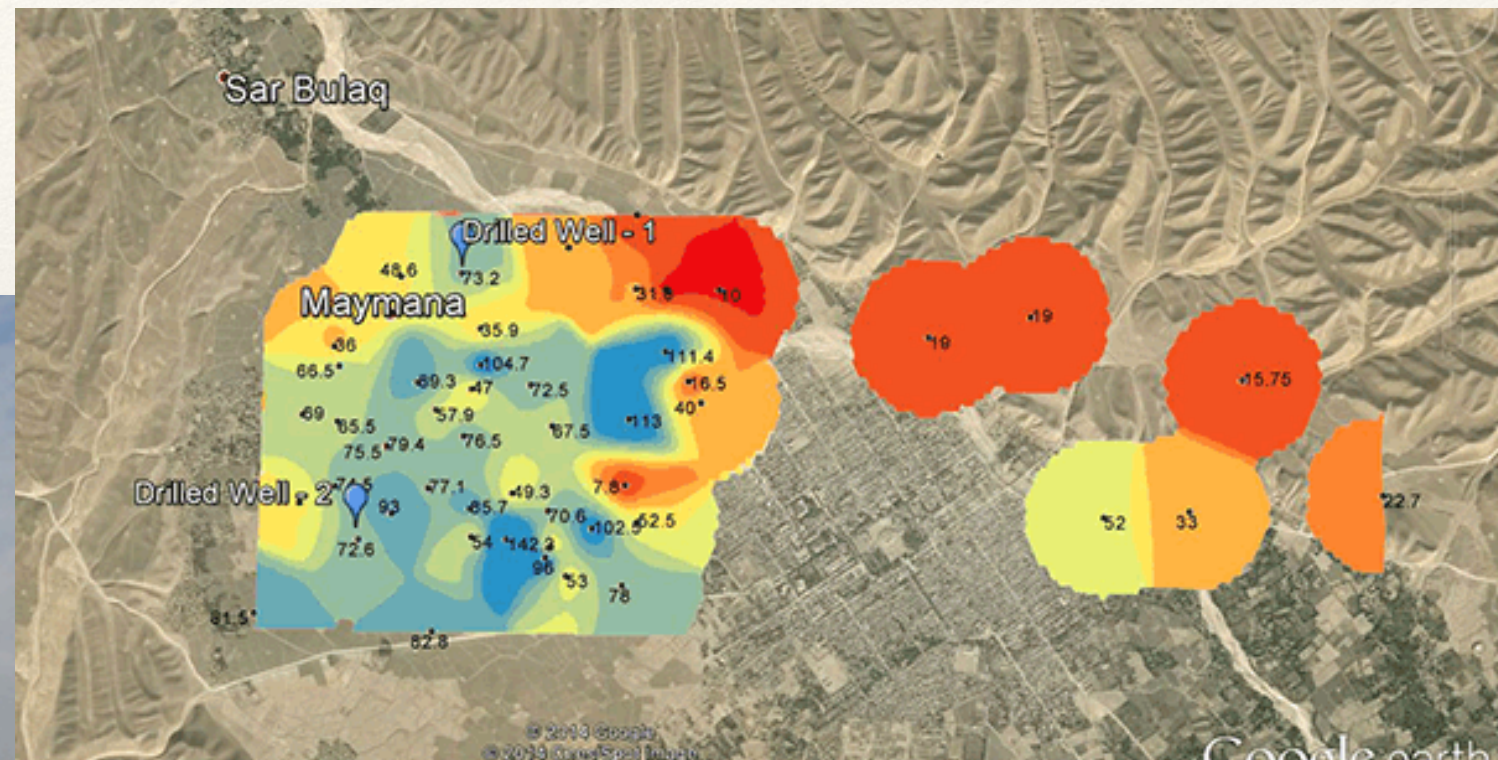
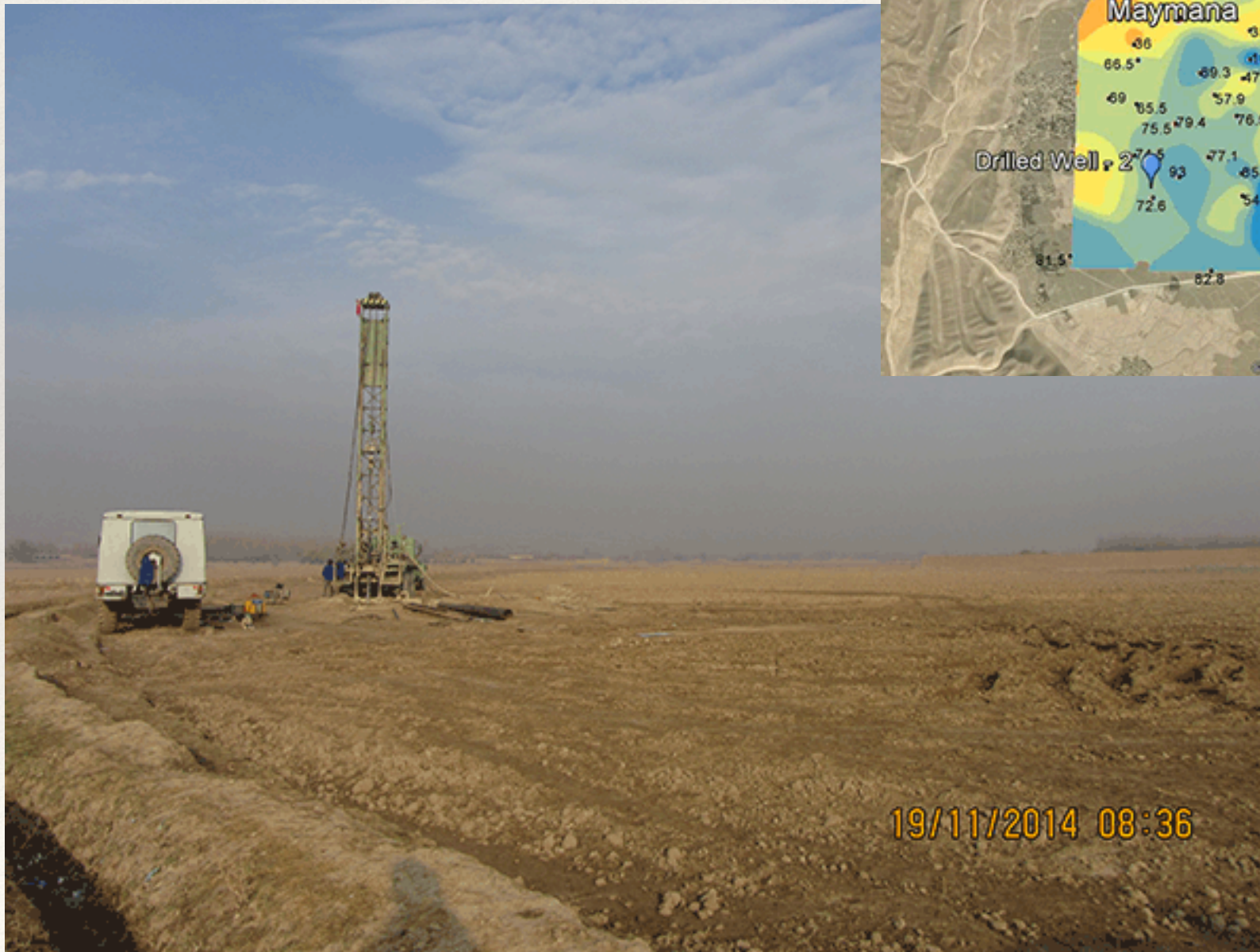
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Field work after training in Faryab



Exploratory drilling in good progress!



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Happeningn now!



To be completed by May 2015, drilling , test-pumping
and analyzing of aquifers

Nearly daily contact!



Photos and reports from Faryab,
22nd Nov.

Discussions in Kabul on drilling
progress and challenges.

GOOD COMMUNICATION,
PROGRESS!!
HANDS -ON - TRAINING!



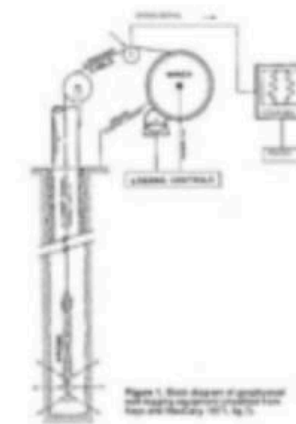
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New Well Logger



Unpacking,
Mounting in car,
Training,
Work and data
interpretation/
training about to
start



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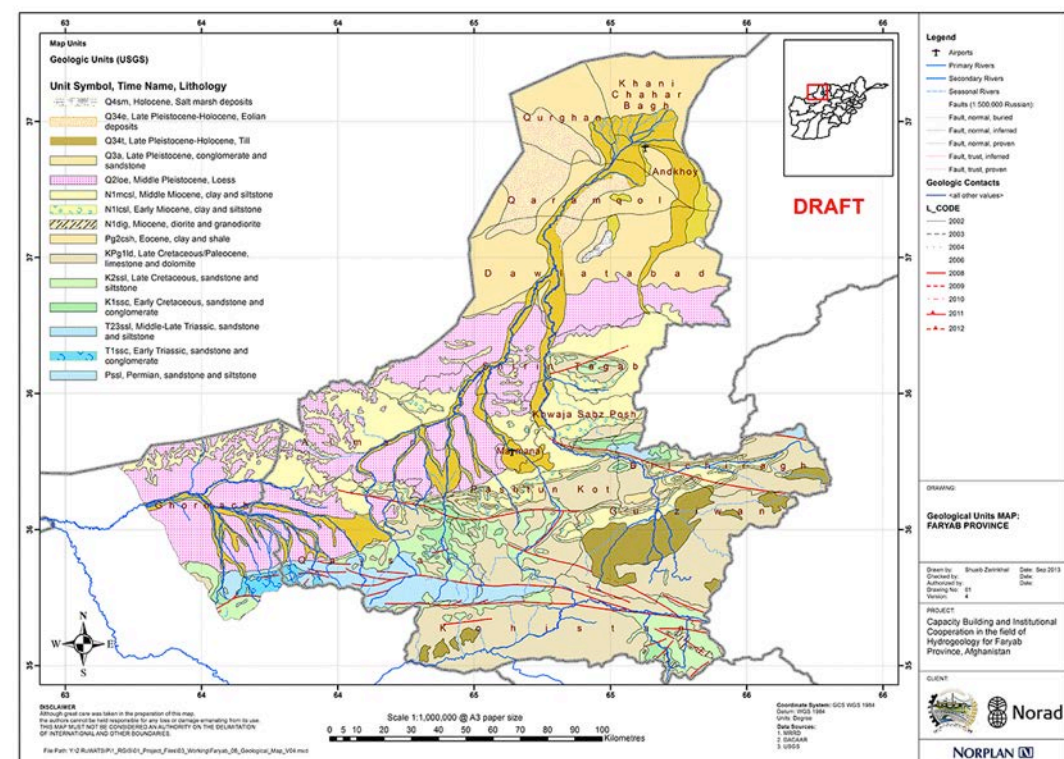
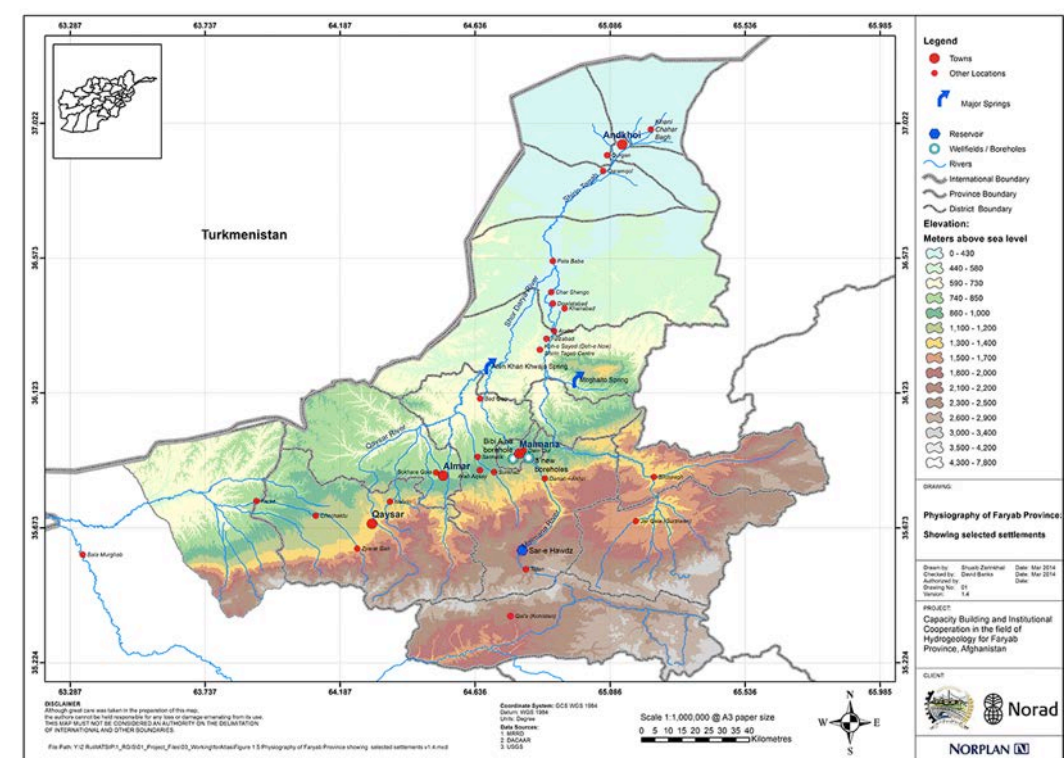
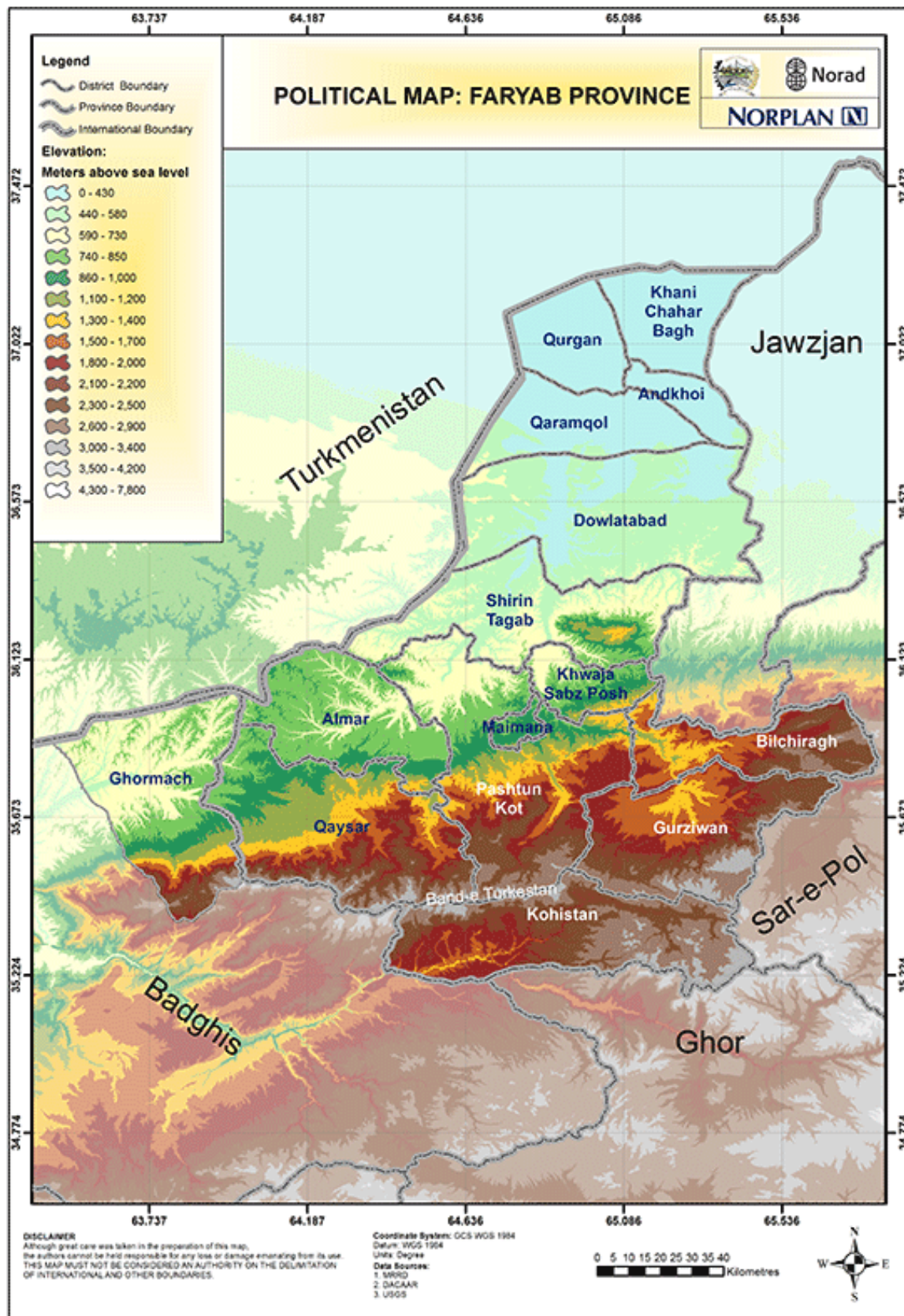
GIS- MIS

- ❖ Data base unit established in RuWatSIP
- ❖ Local technical adviser recruited in Dec 2012.
- ❖ Database for hydrogeo. data designed based on existing data sets.
- ❖ Map formats designed for hydrogeological maps _GIS
- ❖ Maps ready for Faryab.
- ❖ Coordinating GIS and Database with UNICEF supported water supply functionality and water quality info system
- ❖ Online Web Maps for Faryab developed and **PROMISING!**

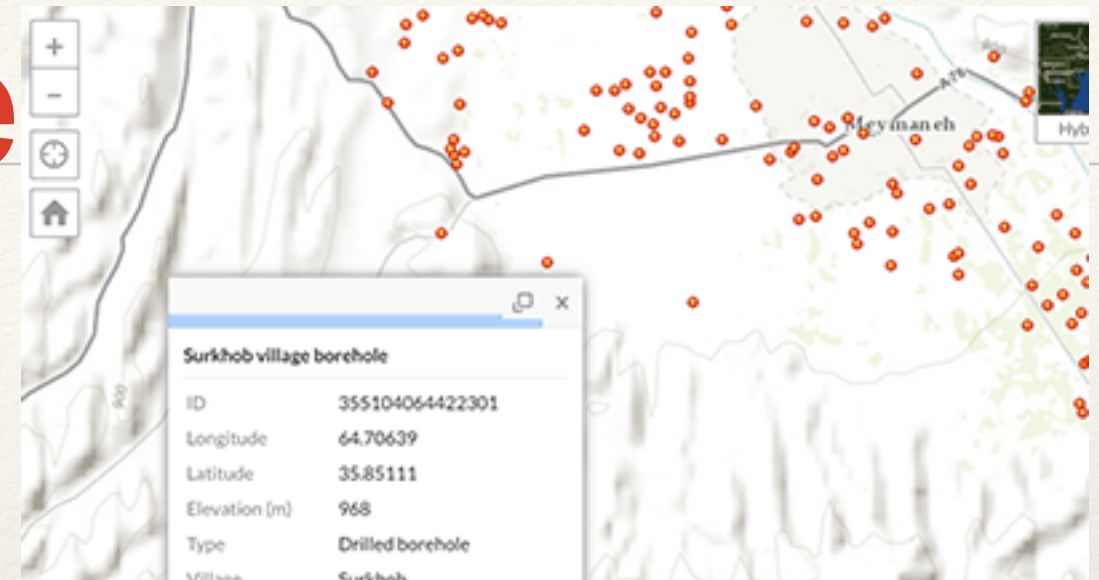
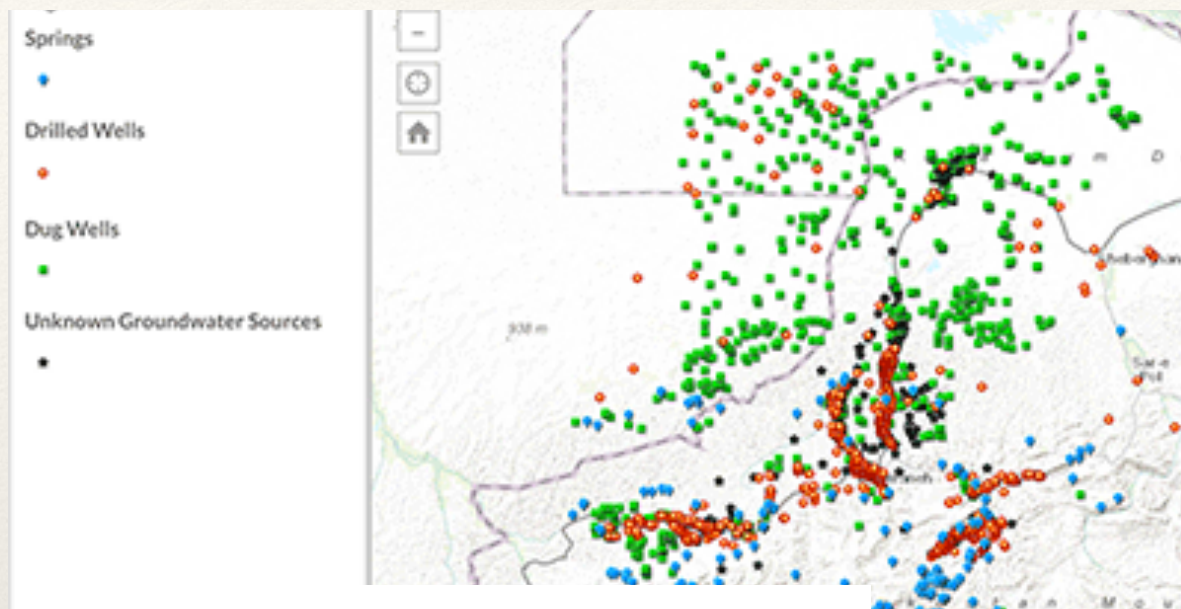


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New technology/ software in use

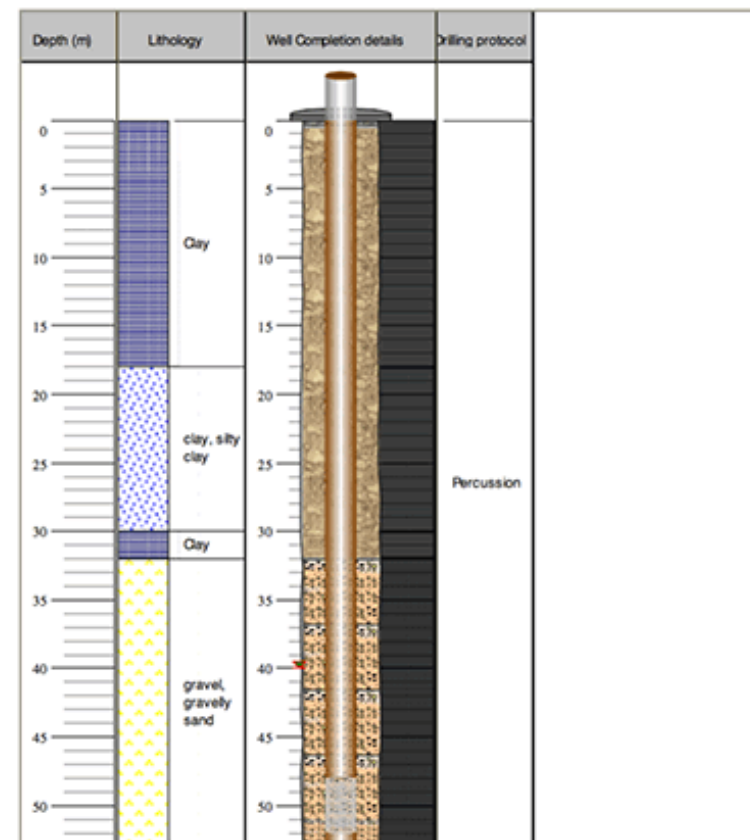


DACAAR Water Supply Program

Borehole Log Report

Borehole S/NO: 465

Dist, Prov, WP Code, Year Imp: MF-03-07



Surkhob village borehole

ID: 355104064422301

Longitude: 64.70639

Latitude: 35.85111

Elevation (m): 968

Type: Drilled borehole

Village: Surkhob

District: Pashtun Kot

Year Constructed: 2009

Data source: MRRD

Use:

Well depth (m): 115.00

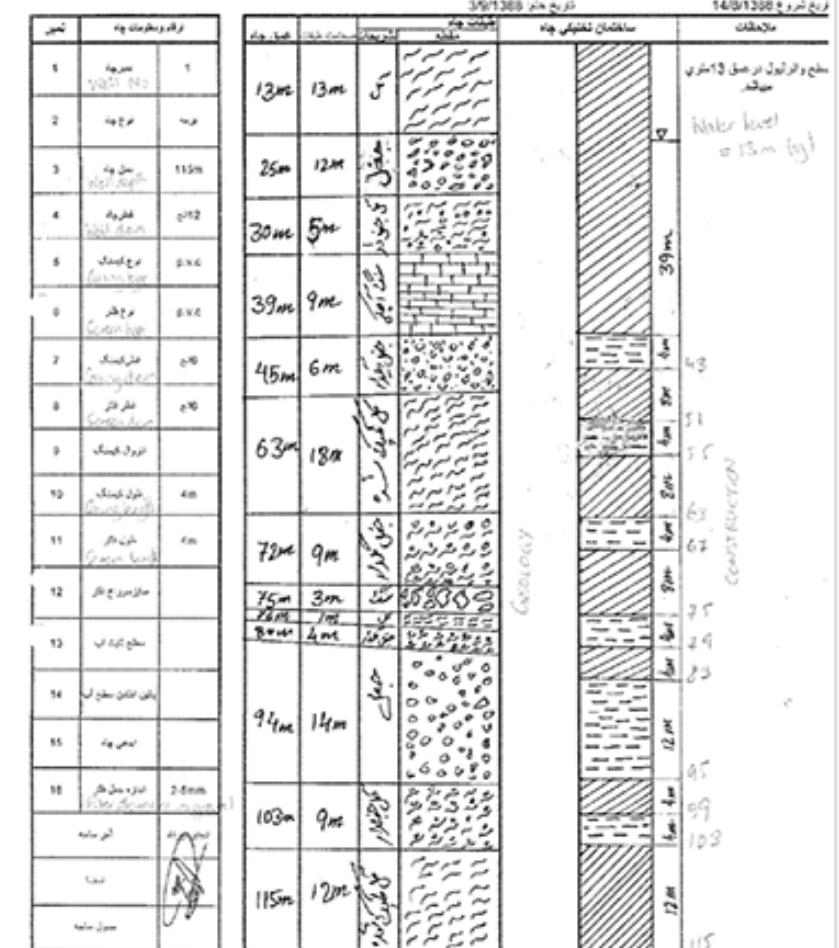
Diam top (mm): 152

SWL (m): 13.00

SWL date: December 11, 2010

Well report: MRRD\Surkhob.jpg

Download data: [More info](#)

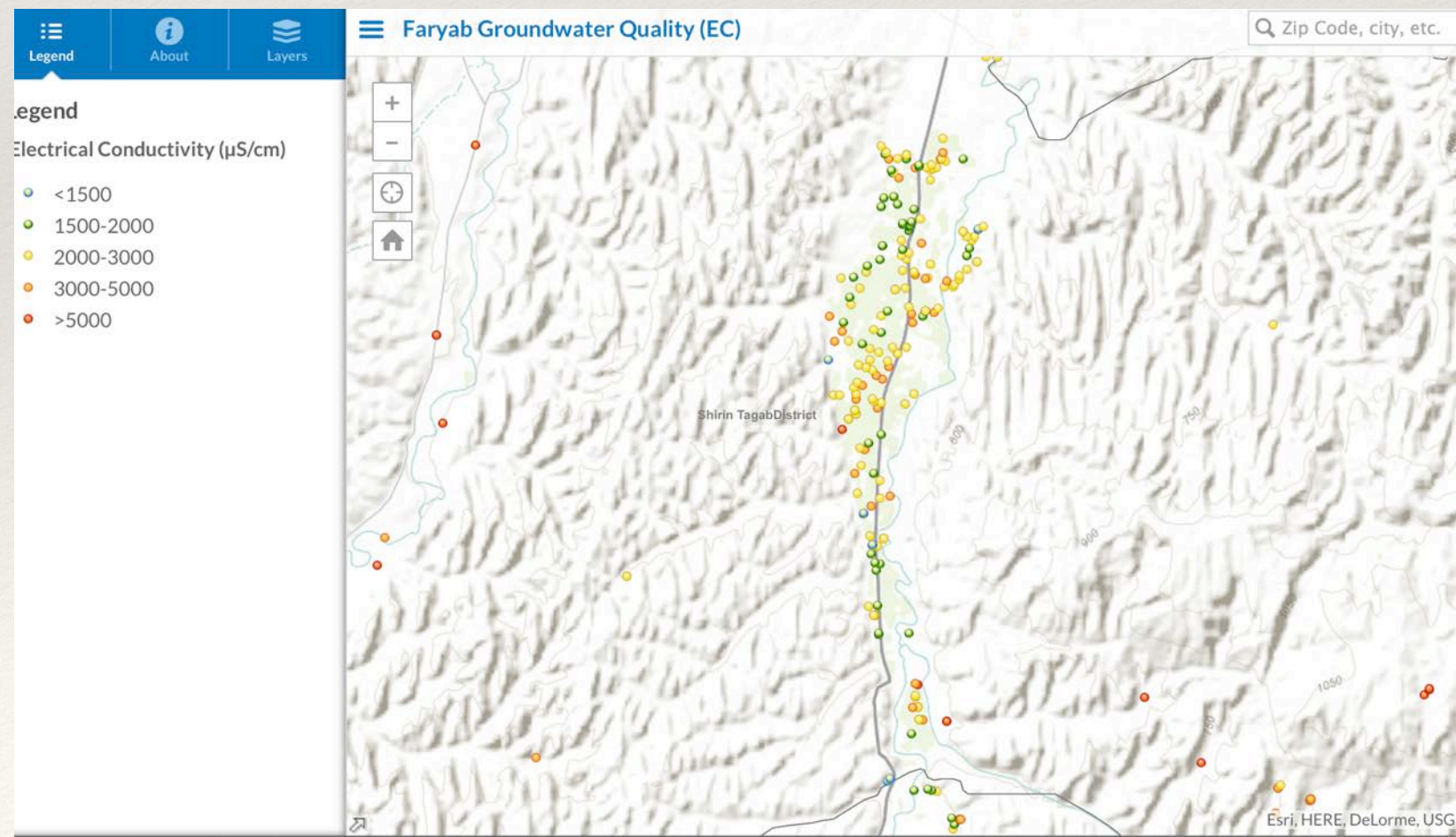


NEW WEB MAP TOOLS!

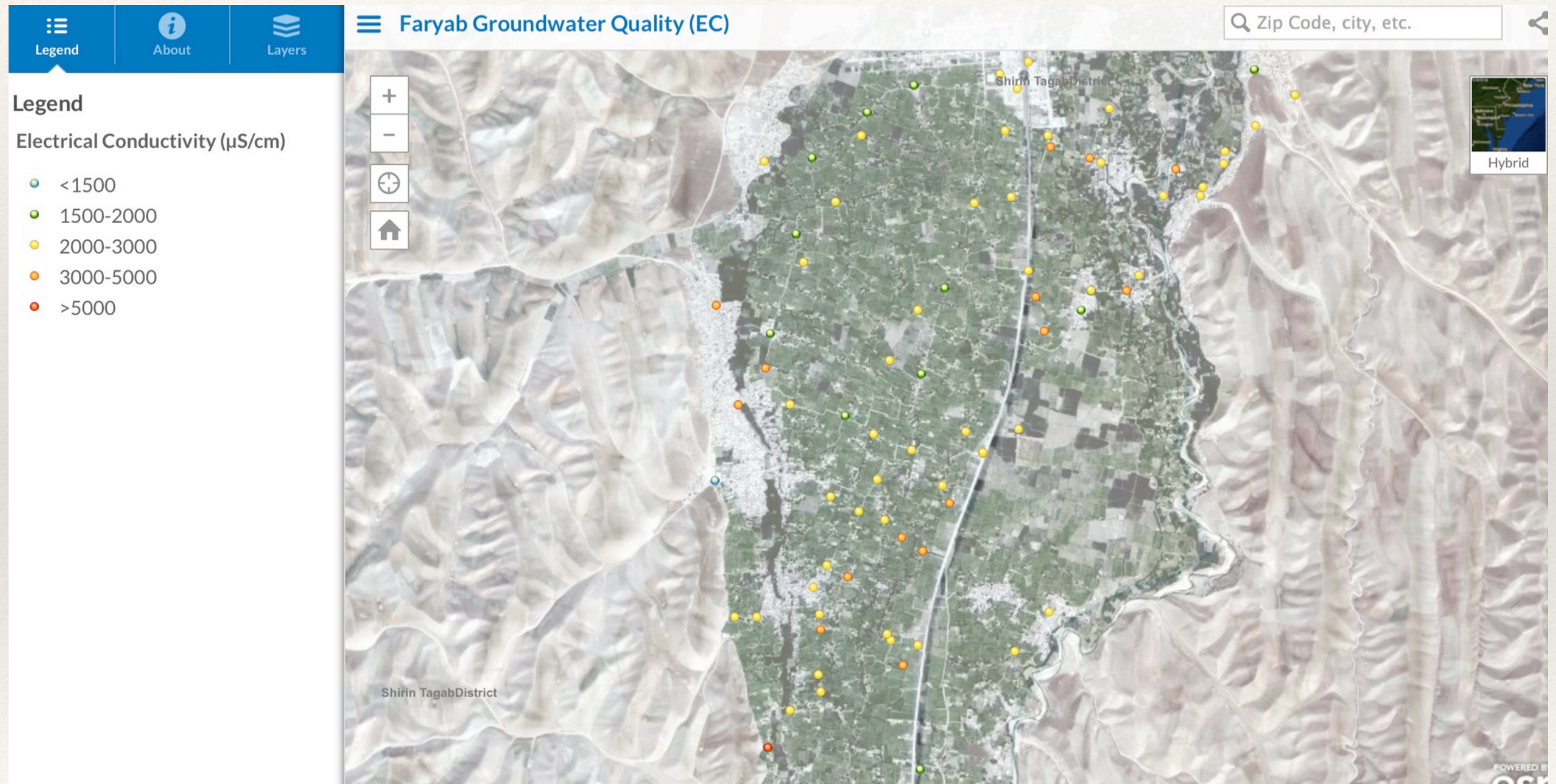


Andreas de Jong is the also the GIS expert on Online GIS maps

Lets ZOOM in



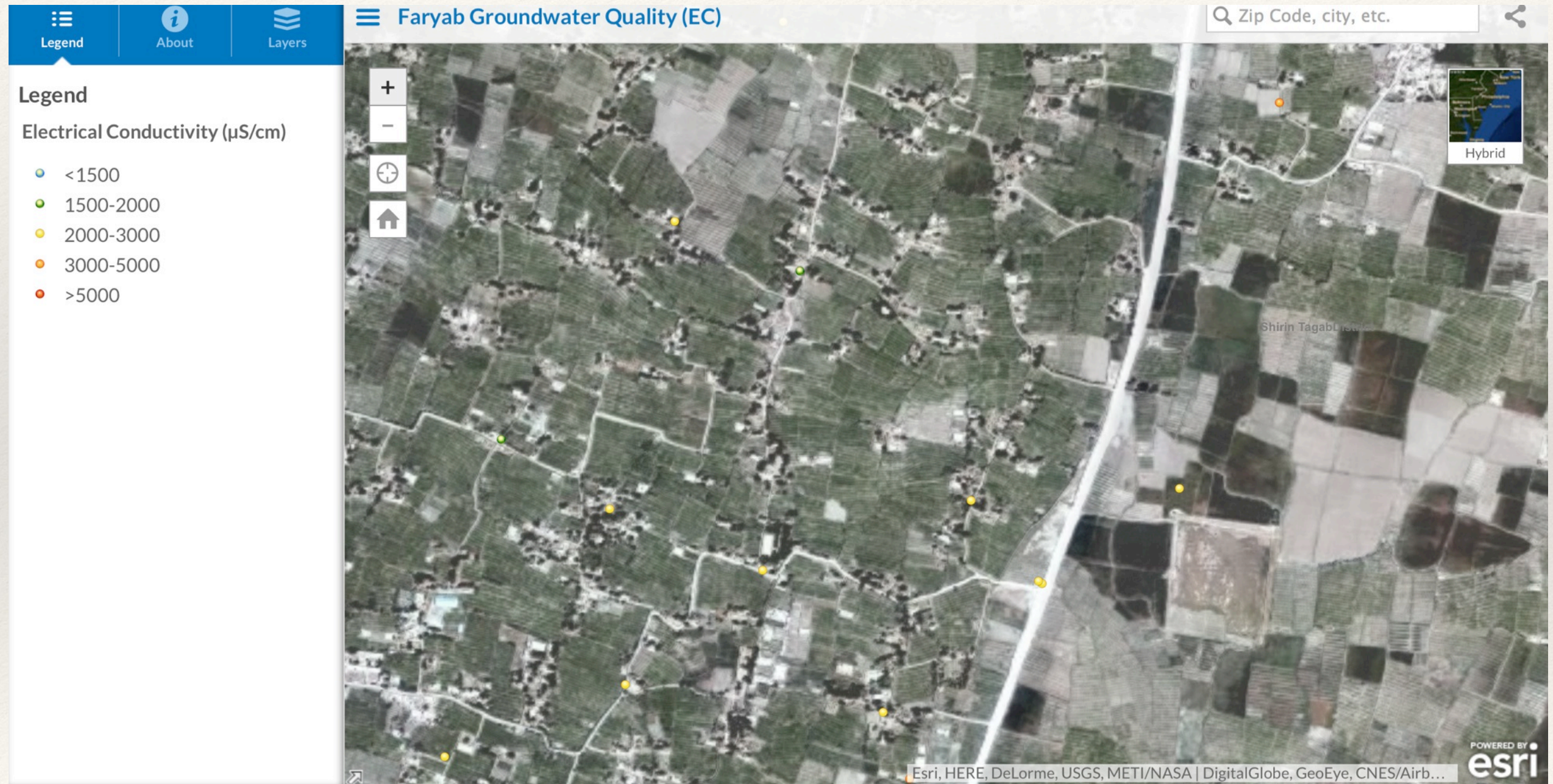
Zoom further



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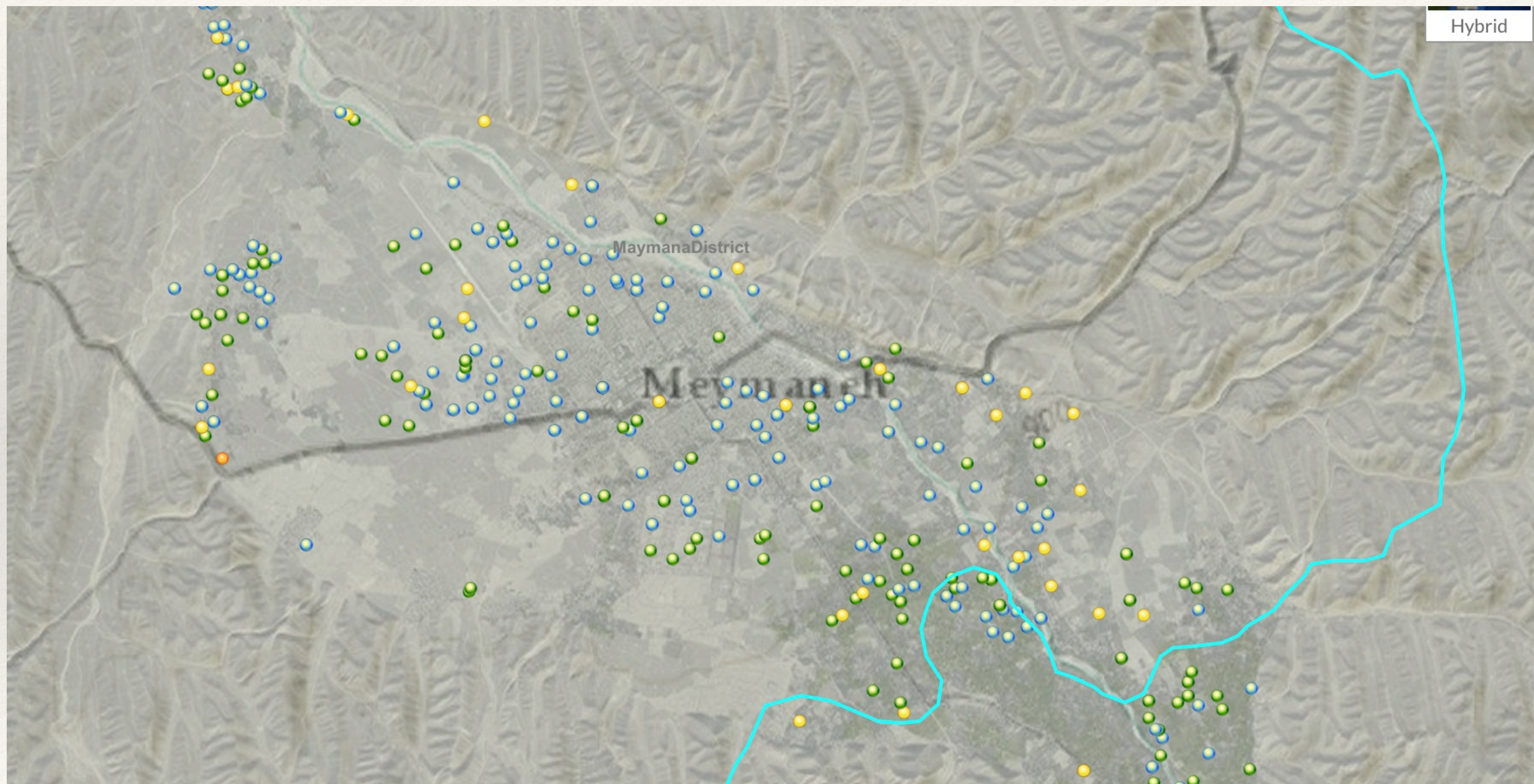
This is Sherin Tagap!



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Or Maymane



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GIS – MIS-

Exciting progress:

- ❖ Remaining:
 - ❖ Establishing institutional framework for scaling up
 - ❖ Training staff and defining roles
 - ❖ Testing system in two new provinces
 - ❖ Finalizing Web Maps.
 - ❖ Capacity for scaling up a challenge.
 - ❖ Training and new and re-run basic training courses



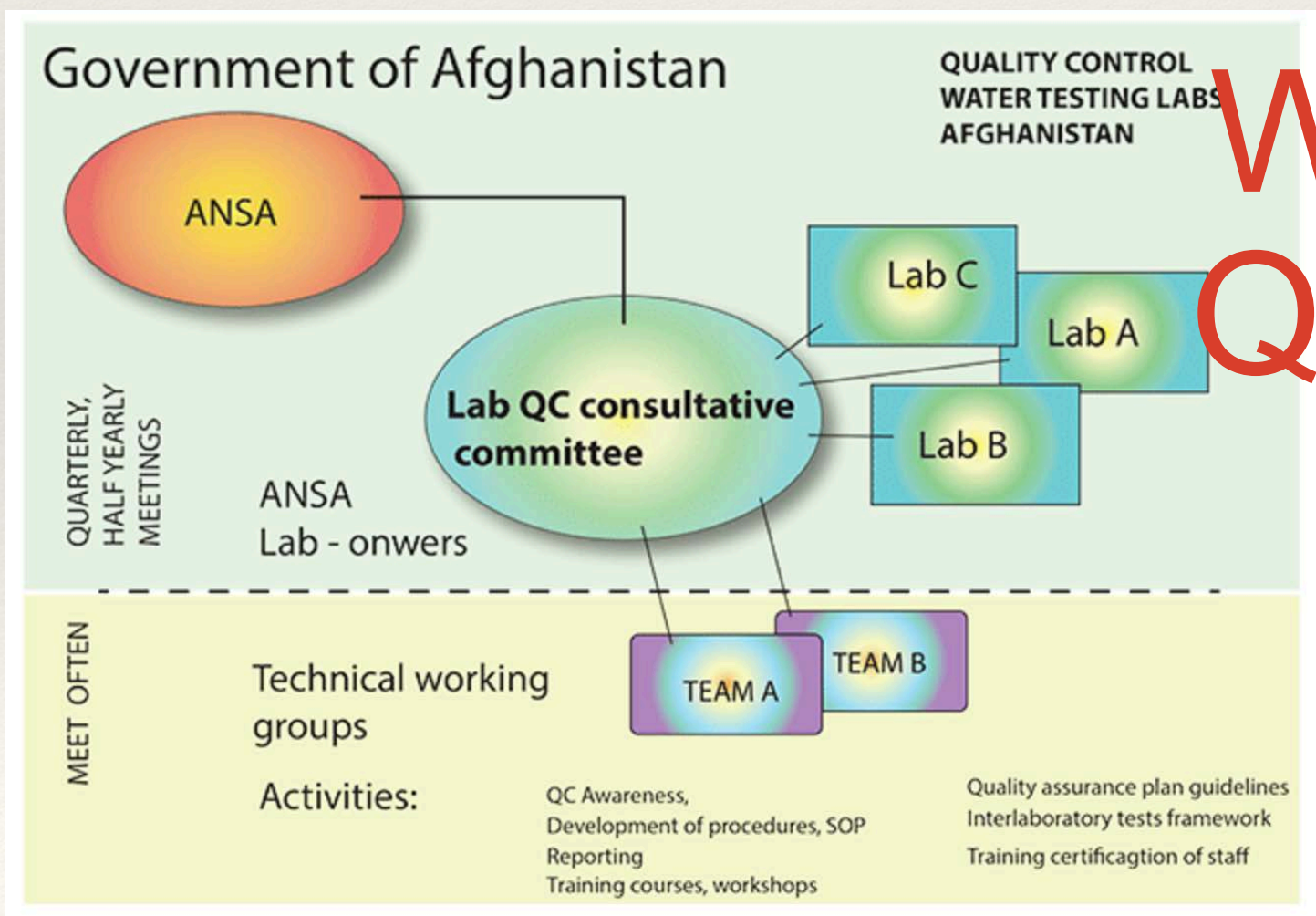
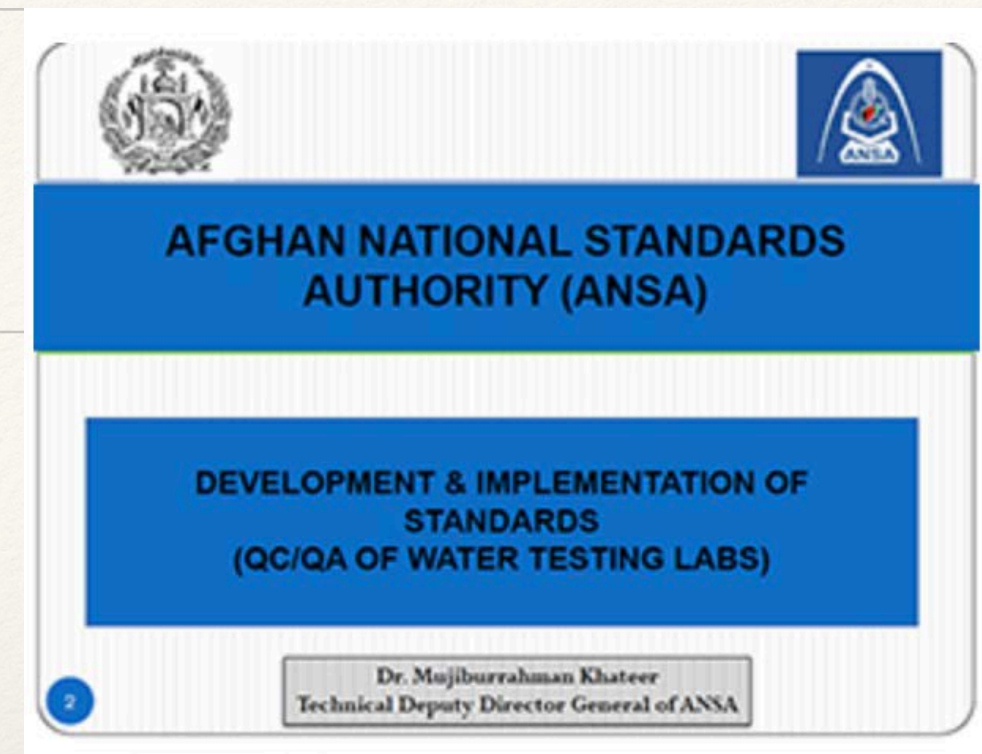
Water and Sanitation

- ❖ Water testing development - unforeseen challenges where project as provided useful support
- ❖ Consultation - priority areas Faryab
- ❖ Training - and development conceptual design



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Water Labs: QC at ANSA



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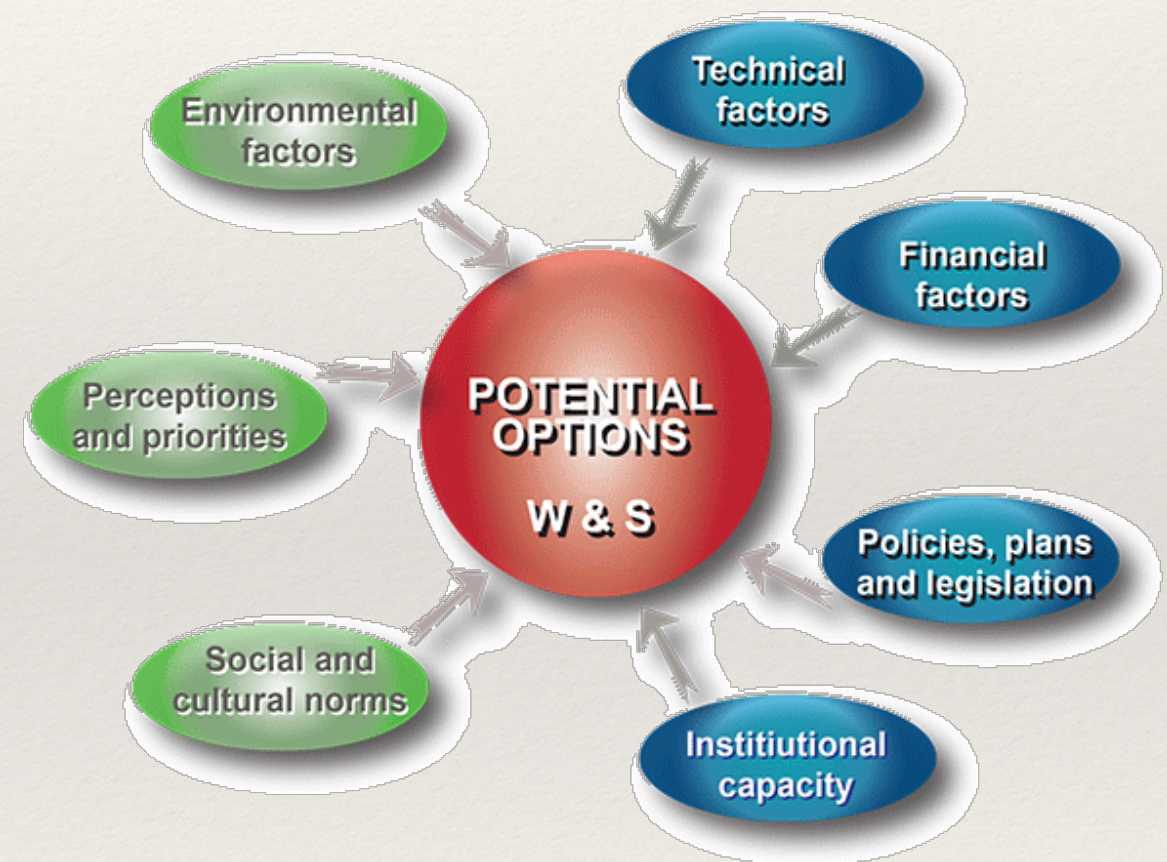
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- ❖ Water testing development
- unforeseen challenges
where project as provided
useful support
- ❖ Consultation - priority
areas Faryab
- ❖ Training - and development
conceptual design



Factors to consider when identifying potential options
for sustainable water supply and sanitation services
(Adapted by WEDC from IRC 1997)

Water and Sanitation



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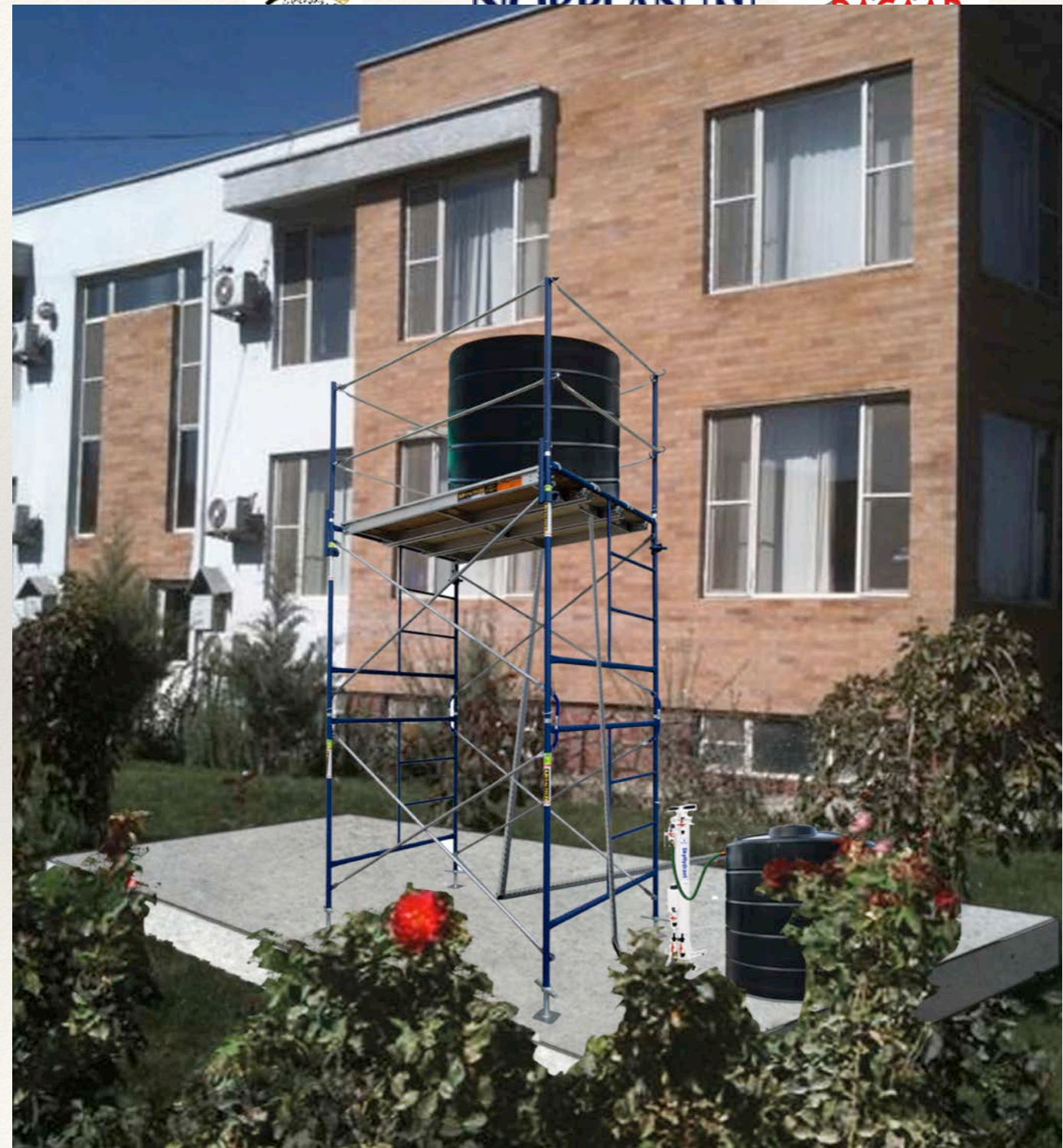
 DACAAR

- ❖ Discussion of appropriate locations for water supply and sanitation planning in Faryab



Technology

Membrane filters for surface water treatment, emergency treatment etc.,



Solar Stills

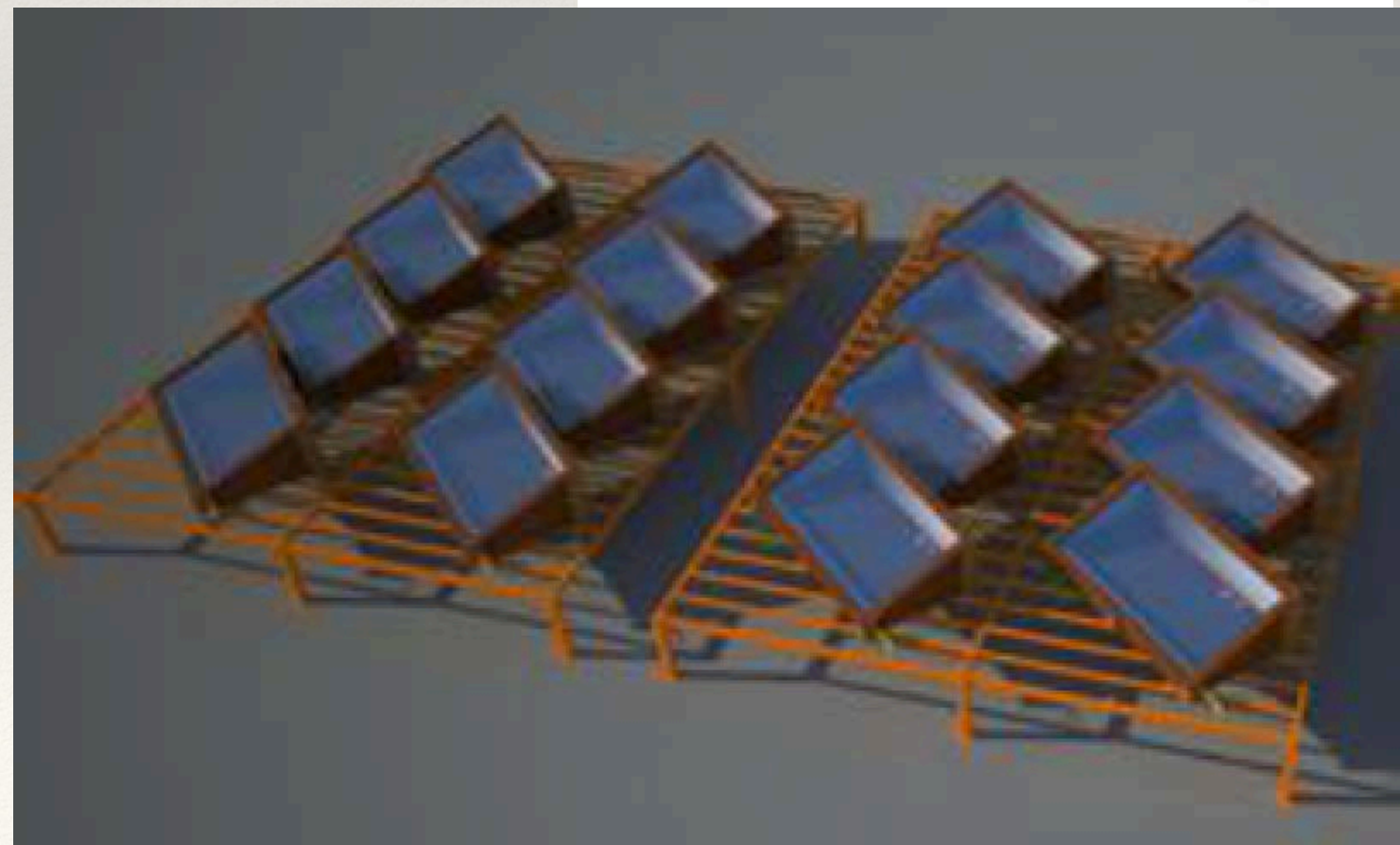
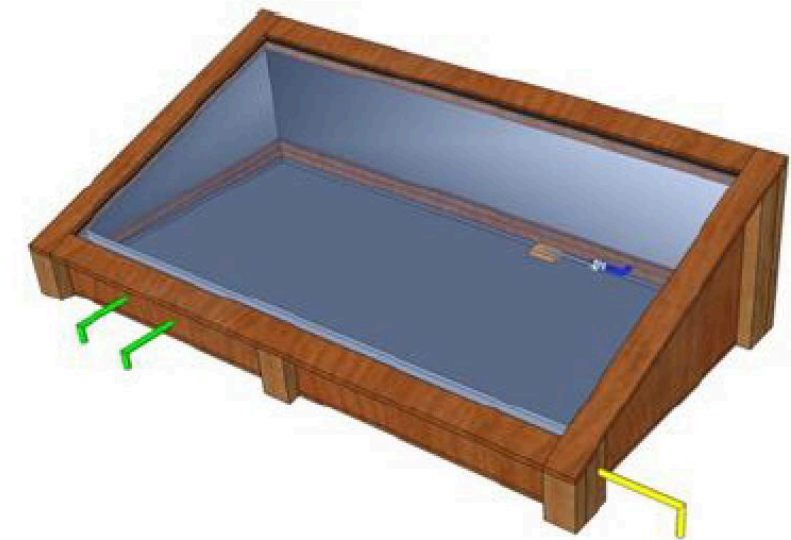
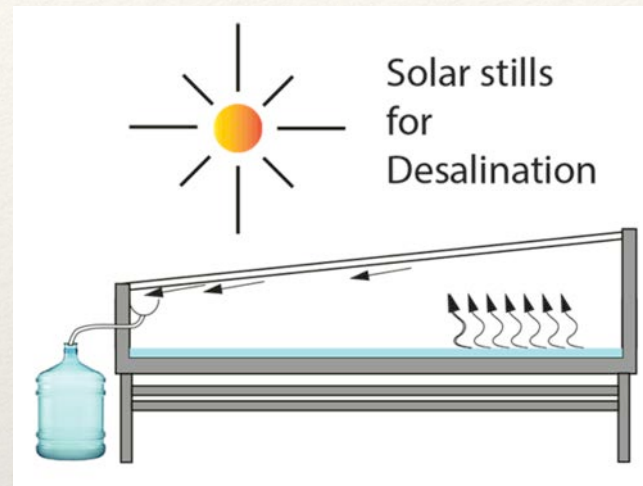


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Planning further M.Sc and
development of cost efficient
model for Afghanistan

Test models
In Kabul



FOCUS ON CAPACITY BUILDING & TRAINING



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- ❖ Training of individuals
- ❖ Stakeholder coordination
- ❖ Develop training courses and training modules
- ❖ Training videos
- ❖ Training of trainers



Development of Training program and courses - and revisions undertaken



Inception Workshop



Bridging workshop

Training
Matrices

[Click to see
details \(pdf\)](#)

A screenshot of a spreadsheet showing a course plan for April 2012. It includes columns for dates, topics, and participants.

Course plan April 2012,
Inception

A screenshot of a spreadsheet showing a course plan for May 2013. It includes columns for dates, topics, and participants.

Course plan May 2013, After
first course and engagement of
addn. expert de Jong.

A screenshot of a spreadsheet showing a training plan for February 2014. It includes columns for dates, topics, and participants.

Training plan as of
February 2014

**Revised
program
2014**



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Training calendar prepared updated

PROPOSAL

Training Calendar 2013

Revised 02 February 14/Prof Egar

Month	January	February	March	April	May	June	July	August	September	October	November	December
Week no	1 2 3 4 5	6 7 8 9 10	11 12 13 14 15	16 17 18 19 20	21 22 23 24 25	26 27 28 29 30	31	1 2 3 4 5	6 7 8 9 10	11 12 13 14 15	16 17 18 19 20	21 22 23 24 25
Date of first day of week	5 12 19 26	2 9 16 23	2 9 16 23 30	6 13 20 27	4 11 18 25	1 8 15 22 29	6 13 20 27	3 10 17 24 31	7 14 21 28	5 12 19 26	2 9 16 23 30	7 14 21 28
Saturday					1.1	1.2	2.3	4.1	1.7	1.5	2.5	2.6
Sunday					1.1	1.2	2.3	4.1	1.7	1.5	2.5	2.6
Monday					1.1	1.2	2.3	4.1	1.7	1.5	2.5	2.6
Tuesday					1.1	1.2	2.3	4.1	1.7	1.5	2.5	2.6
Wednesday					1.1	1.2	2.3	4.1	1.7	1.5	2.5	2.6
Thursday					1.1	1.2	2.3	4.1	1.7	1.5	2.5	2.6
Friday					1.1	1.2	2.3	4.1	1.7	1.5	2.5	2.6

Training Calendar 2014

Month	January	February	March	April	May	June	July	August	September	October	November	December
Week no	1 2 3 4 5	6 7 8 9 10	11 12 13 14 15	16 17 18 19 20	21 22 23 24 25	26 27 28 29 30	31	1 2 3 4 5	6 7 8 9 10	11 12 13 14 15	16 17 18 19 20	21 22 23 24 25
Date of first day of week	4 11 18 25	1 8 15 22	1 8 15 22 29	5 12 19 26	3 10 17 24 31	7 14 21 28	5 12 19 26	2 9 16 23 30	6 13 20 27	4 11 18 25	1 8 15 22 29	6 13 20 27
Saturday					4.1	1.1	1.2	1.7	1.5	2.5	2.6	2.7
Sunday					4.1	1.1	1.2	1.7	1.5	2.5	2.6	2.7
Monday					4.1	1.1	1.2	1.7	1.5	2.5	2.6	2.7
Tuesday					4.1	1.1	1.2	1.7	1.5	2.5	2.6	2.7
Wednesday					4.1	1.1	1.2	1.7	1.5	2.5	2.6	2.7
Thursday					4.1	1.1	1.2	1.7	1.5	2.5	2.6	2.7
Friday					4.1	1.1	1.2	1.7	1.5	2.5	2.6	2.7

Training Calendar 2015

Month	January	February	March	April	May	June	July	August	September	October	November	December
Week no	52 1 2 3 4 5	6 7 8 9 10	11 12 13 14 15	16 17 18 19 20	21 22 23 24 25	26 27 28 29 30	31	1 2 3 4 5	6 7 8 9 10	11 12 13 14 15	16 17 18 19 20	21 22 23 24 25
Date of first day of week	27 3 10 17 24 31	7 14 21 28	7 14 21 28	4 11 18 25	2 9 16 23 30	1 8 15 22 29	5 12 19 26	2 9 16 23 30	6 13 20 27	4 11 18 25	1 8 15 22 29	6 13 20 27
Saturday					1.1	1.2	1.7	1.5	2.5	2.6	2.7	2.8
Sunday					1.1	1.2	1.7	1.5	2.5	2.6	2.7	2.8
Monday					1.1	1.2	1.7	1.5	2.5	2.6	2.7	2.8
Tuesday					1.1	1.2	1.7	1.5	2.5	2.6	2.7	2.8
Wednesday					1.1	1.2	1.7	1.5	2.5	2.6	2.7	2.8
Thursday					1.1	1.2	1.7	1.5	2.5	2.6	2.7	2.8
Friday					1.1	1.2	1.7	1.5	2.5	2.6	2.7	2.8

Key code:
Public holidays

Hydrogeology I (Norplan)

- 1.1 Groundwater investigation
- 1.2 Geophysical survey, 7 daysx2
- 1.3 Well drilling methods, 4 daysx2
- 1.4 Water well design and completion, 5 daysx2
- 1.5 Well hydraulics, 7 daysx2
- 1.6 Hydrochemistry, interpretation of data
- 1.7 Planning and implementation of provincial hydrogeologic survey
- 1.8 Geophysical borehole logging, planning and, 6 days x 2
- 1.9 Geophysical borehole logging interpretation of data
- 1.10 well construction and pumping test (KAE)

Hydrogeology II (DACAAR)

- 2.1 Interpretation of data, 5 daysx2
- 2.2 Preparing thematic maps, 5 daysx2
- 2.3 Water quality testing and GPS use in the field
- 2.4 Practical Geophys. Investig. and Siting-in the province
- 2.5 Well construction and pumping test (Province)
- 2.6 Pumping test and data collection of exploratory well (Faryab)
- 3.1 Training methods, 2 daysx2
- 3.2 Best practice, 2 daysx2

Training of trainers (DACAAR)

- 4.1 National hydrogeological conference
- 4.2 national conference in GIS and web.tool

Key points

GIS

- 4.1 ArcGIS Software Introduction
- 4.2 ArcGIS Databases
- 4.3 ArcGIS Spatial analyses
- 4.4 RGIS viewer administration, 3 days (Norplan)
- 4.5 RGIS viewer how to use, 1 day (Norplan)
- 4.6 RGIS design, 1 day (Norplan)
- 4.7 Data management, 5 days (Norplan)
- 4.8 Data capturing, 1 day (Norplan)
- 4.9 Cartography, 2 days (Norplan)
- 4.10 GIS for hydrogeologist
- 4.11 Remote sensing
- 4.12 Cartography-2
- 4.13 Data Management 2 (Excel & ACCESS)
- 6.2 Development of hydrogeological water atlas-half day
- 6.4 training course evaluation

Water and sanitation

- 5.1 Planning using water atlas, 2 daysx2 (Norplan)
- 5.2 Conceptual design 3 daysx2 (Norplan)
- 5.3 O&M 1 daysx2 (DACAAR)
- 5.4 Social aspects, WASH policy, 4 daysx3 (DACAAR)
- 5.5 Water network design 4 days (regional expert)
- 5.6 Totalstation, use of, 2 daysx2 (local expert Nasen)
- 5.7 Laboratory Quality Control-1

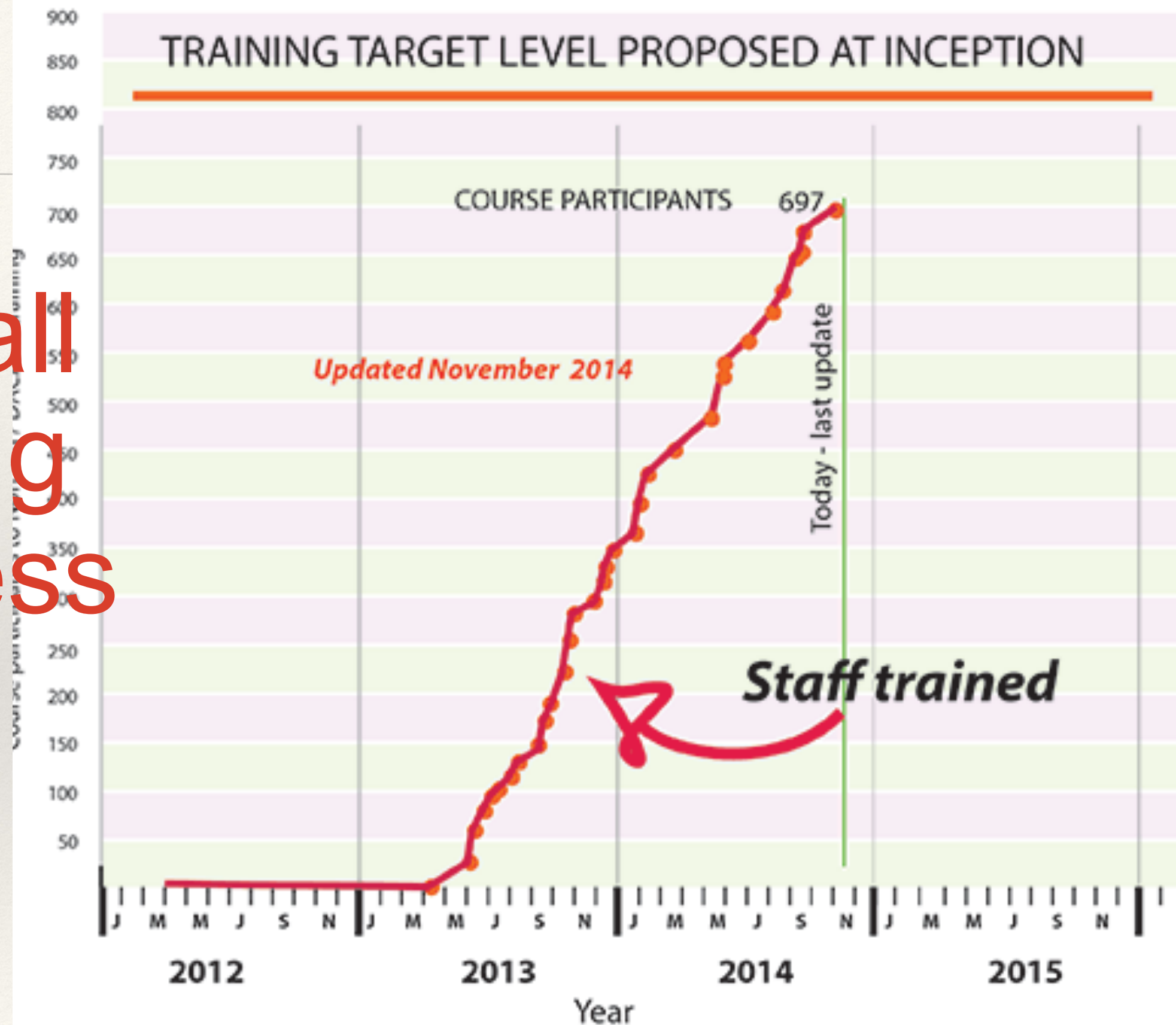


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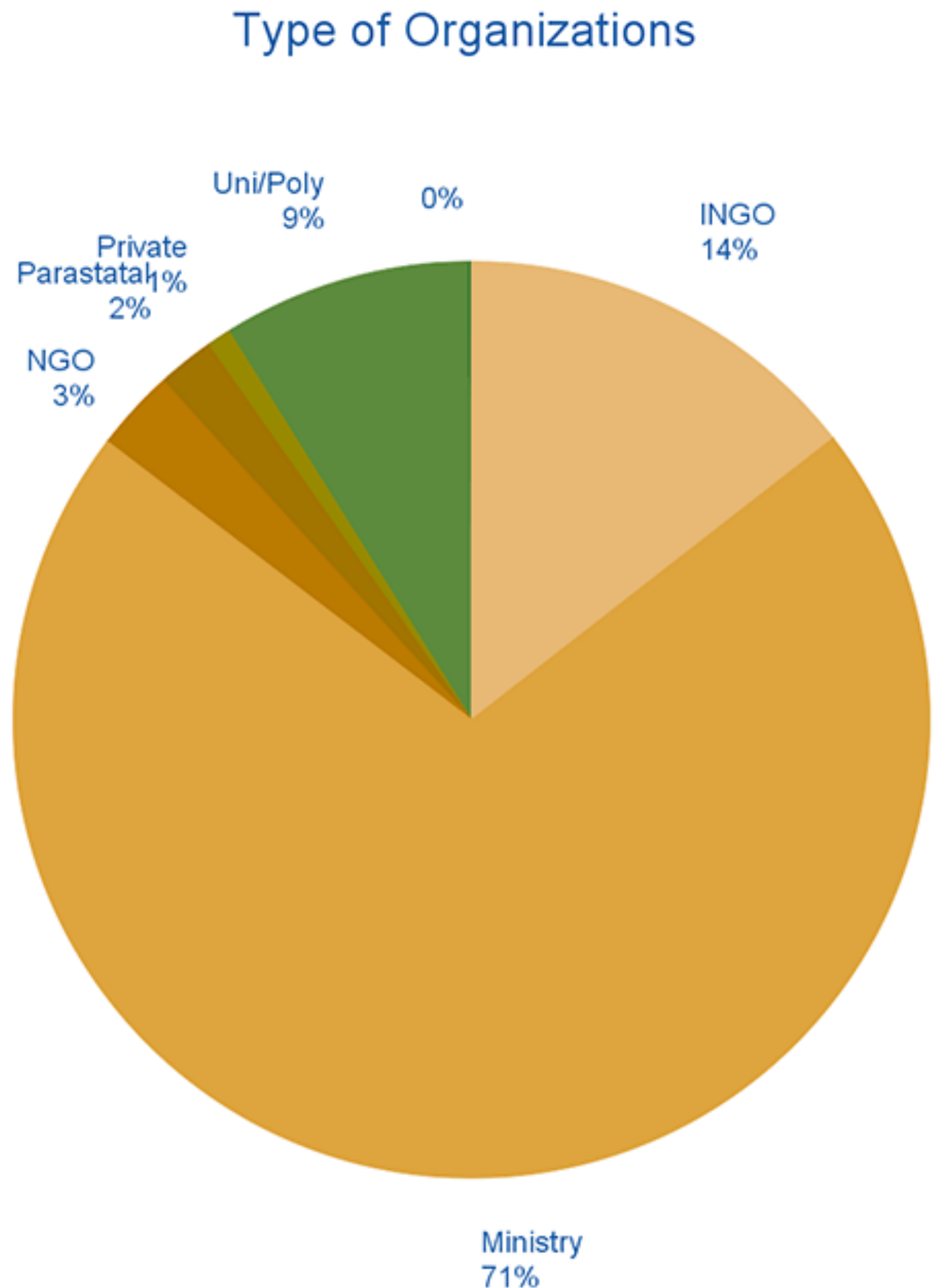
Overall training progress



Attendance at different courses

Organizations

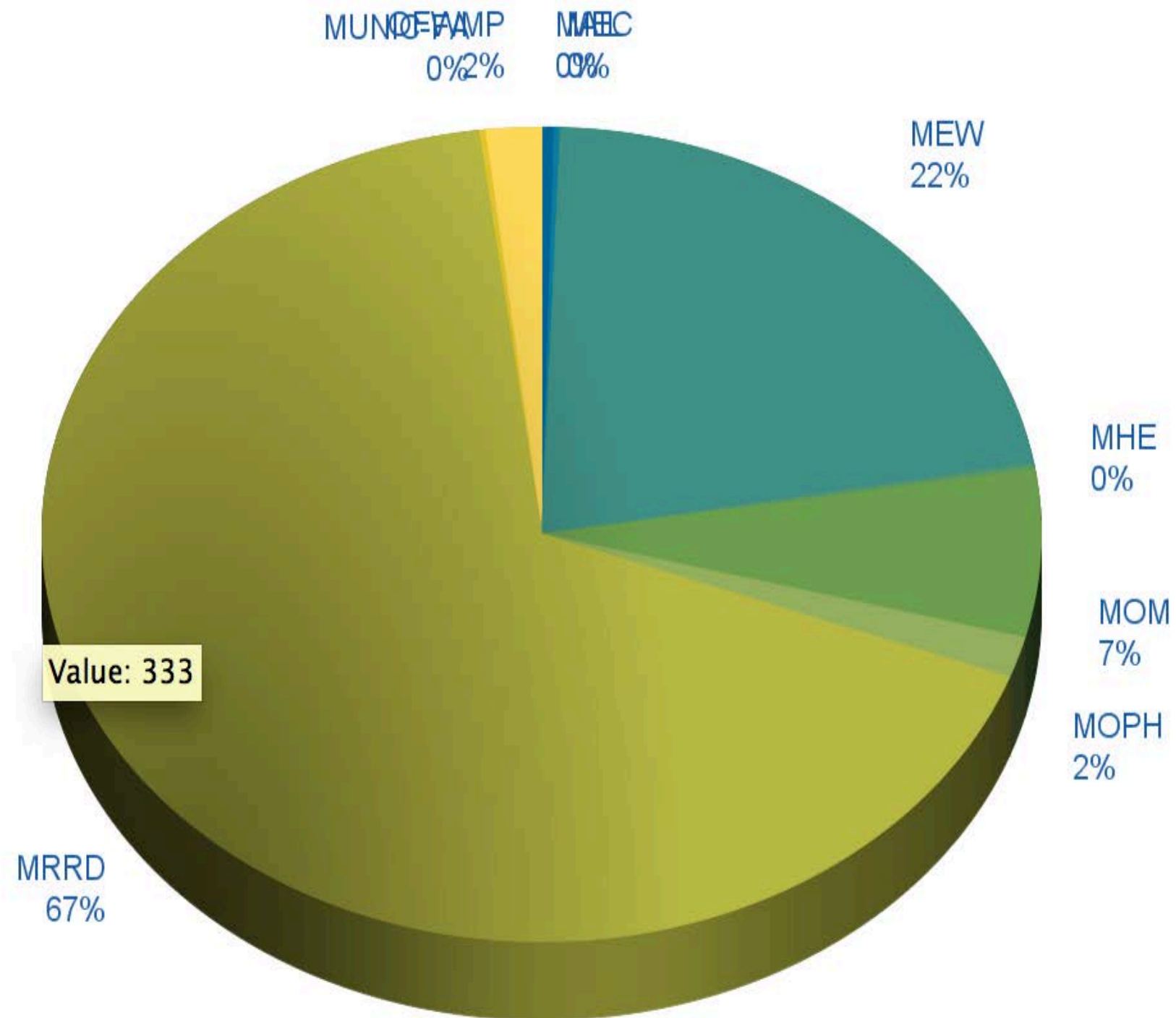
- ❖ Pie showing where 697 participants
- ❖ 35 courses completed
- ❖ 318 different persons
- ❖ 263 male and 43 female



Participants from Ministries

495

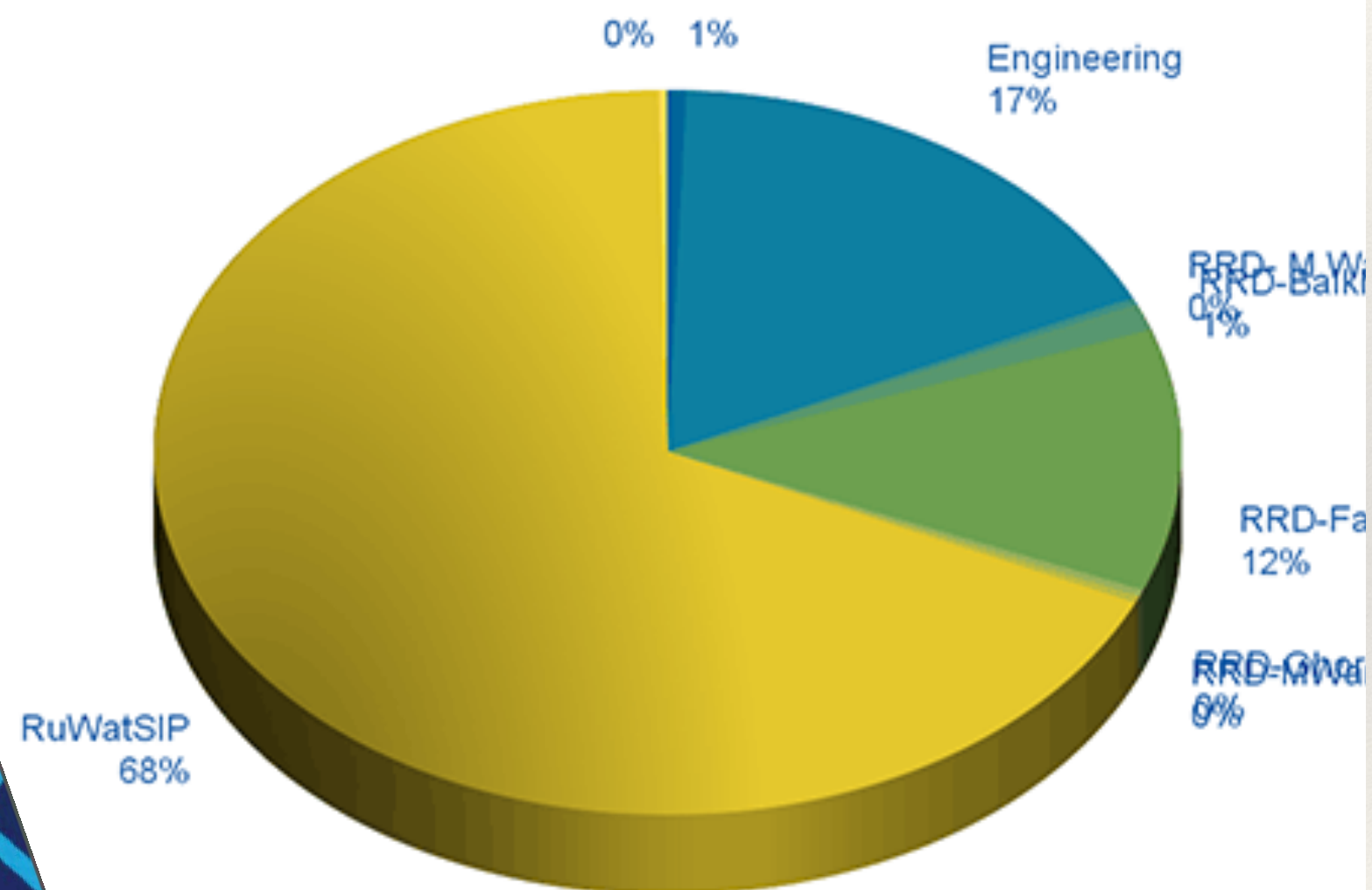
Ministries



Within MRRD



Course Participants from MRRD 333



See Report of Outputs

Focus on practical training.



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Water quality testing
In Faryab, DACAAR



Practical geophysical training



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GIS

Cartography



Sector coordination



RuWatSIP - training all sector actors



MEW- strategic planning

ANSA
National
water
quality
system



UNICEF - annual meeting



Revised Budget: September 2014



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Plans for project completion

Field work: To continue till end of June.

- ❖ Exploratory drilling in Faryab to continue, Maymane, 6 boreh. And test pumping. Geo invest. Andkhoi and exp. Drilling.
- ❖ Developing solar still testing and membrane filter testing.
- ❖ New well logger: Mount, test, train operators. Run courses for interpretation of data from 10 bh in Kabul. Then test in Faryab.
- ❖ Continuing training program schedule as planned but revised for advance and basic courses. Focus on well logging, data mamagement, production of GIS and Online Web Maps. Support to establishing national equality control for water laboratories
- ❖ Water supply conceptual design training, use of geophysical data. .



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Office and admin work: Till end of project. Dec 2015

- Collate training material
- Organise translation of documents
- Conduct National Conference on
 - a) Hydrogeology in Afghanistan,
 - b) GIS in use in development in Afghanistan
- Prepare project reports as per TOR
- Hand over of technical equipment, hardware and software
- Hand over workshop to key MRRD and trainers of training materials for continued use in Afghanistan



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Needed

- Need to continue having office in MRRD staffed till end of 2015
- Need International hydrogeologists for more practical training on geotechnics, well logging, data analysis, National conferences.



Decisions and guidance needed

- ❖ Approval of work plan
- ❖ Project implementation of be continued till mid 2015 with finalizing manuals and documentation by end of 2015.
- ❖ Approval of revised budget.
- ❖ NORAD to consider providing support so that possible planned water supply activities can be constructed / implemented.
- ❖ Support for continuity planning for project continuation at MRRD, DACAAR, MEW, University.
- ❖ Next follow up meeting in June?



Our Hopes

- That resources can be secured so that project can continue in three more provinces testing methods and institutional capacities
- That training can continue. As we train we see training need large still at all levels, basic as well as advanced training
- To secure resources for develop water supplies for possible water resources uncovered by exploratory drilling in Faryab



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- That project sustainability can be secured by MRRD by finding ways of good overlapping with other projects
 - That MRRD, University, DACAAR and other organizations can make use of developed methods and training materials for continued capacity development in Afghanistan.
 - Since the project is going reasonably well, it would make sense to continue projects and activities which delivers. **We hope for possible extended support.**



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Thank you.



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