Status of Soil Information in Iraq

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Soil Survey Works in Iraq:

Before 1965:

- There was no any specialized office responsible for arrangement of soil survey work in Iraq.
- Most of soil survey works had been done by foreigner staff.
- Most of the works done for specific purposes (salinity, soil texture, nutrient levels, etc.)
- Soil survey works have been done using an old USA system to classify the soils.
- The most common work was done by Buringh, 1960 at reconnaissance level of soil survey with map units represent soil great group level.
After 1965:

- The state board for land reclamation was established to take the responsibility for the soil survey works.

- Soil taxonomy was used to classify the sols.

- Most of the soil survey works were done at detail level and map of 1/25,000 scale.

- About 35% of Iraq area was covered by this soil survey works.
Soil development increases from the south to the northern part of Iraq due to the differences in the activity of soil formation factors.
Factors of Soil Formation :-

The dominant factors controlling soil formation in Iraq are :

- Parent materials : recent alluvium, calcareous or gypsiferrous.

- Climatic conditions ranging from dry to sub humid with mean annual precipitation of less than 100mm to more than 1000mm in northern region Iraq.

- Physiographic ranges from the Mountain in the northern to nearly flat plain in southern part.

- Low density of natural vegetation.
Physiographic Units

- Plains (including marshes and lakes): 30%
- Terrain Lands: 10%
- Mountains: 21%
- Deserts: 39%
Total Iraqi Area : 438 317 sq. km
Agriculture land : 94 500  sq.km
Forest land : 8 230 sq. km
Land Degradation:

1- Salinity
2- Soil Erosion: wind and water.
3- Biological
4- Physical
Soil Classification:

Iraqi Soils were classified according to the dominant chemical composition as following:
1- None Saline Soils
2- Desert - with Low Saline Soils
3- Moderate Soil Salinity
4- Saline Soils
5- High Salinity Soils

Distribution of Saline Soils in Iraq, (Buringh, 1960)
Figure 2: Distribution of Gypsiferous Soils in Iraq.
Figure 1: Distribution of Calcareous Soils in Iraq.
The dominant soil orders in Iraq

The results of soil survey works on Iraqi Soils indicate the presence of the following soil orders:-
1- **Aridisols** including the following great groups:
- Aquisalids
- Haplosalids
- Petrogypsids
- Calcigypsids
- Haplogypsids
- Paleargids
- Gypsiargids
- Calciargids
- Haplargids
- Petrocalcids
- Halocalcids
- Haplocambids

2- **Entisols** with the following great groups:
- Psammaquents
- Fluvaquents
- Xerarent
- Torriarents
- Xerofluvents
- Torrifluvents
- Torripsamments
- Xeropsamments
- Torriorthents
- Xerorthents

3- Inceptisols:
- Haplaquepts
- Calcixerpts
- Haploxerepts

4- Mollisols including the following great groups:
- Calciaquolls
- Calcixerolls
- Argiaquolls
- Argixerolls
- Haploxerolls
5- Vertisols including the following great groups:

- Calcixererts
- Haploxererts
- Gypsitorrerts
- Calcitorrerts
- Haplotorrerts
Iraqi Soil Maps

- There is no detail soil map done yet at the regional scale. But, at district, there are a detail studies (more than 35%):
  - Soil map at 1/25 000 scale
  - salinity map
  - land use map
  - soil texture map

- There are two general maps done using RS and GIS.
Soil Suborders - Iraq

REFERENCES:
Proposal of soil mapping works

– Developing Iraqi soil maps :-
  - Stage 1 : soil map on scale of 1/250 000 at subgroup
    This work was started in 2011.

  - Stage 2 : on scale of 1/50 000 at soil series level for
    some counties have detail soil survey works.

- Data from previous pedological works were collected
  for more than 250 locations in Iraq.

- Data include :
  - general soil profile descriptions
  - soil physical properties.
  - soil chemical properties.
Data Collections:

- developing Iraqi soil map.
- digitizing all the collected data.
- creating soil data base for the next uses.
Suggestions:

In order to increase the accuracy of the outputs of the GSP work:
- Select the most common soil classification system.
- Training some representative team work on the application of the selected system.
- Workshop to recheck the results of soil survey mainly for the soils on the borderers between the joint countries.
Thank you for attention