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Dynamics Of Soil-Geographical Research In The Fergana Valley (1918-1945)

Abdusamad Abdumalikovich Hamidov
Senior Lecturer, Ph.D.Fergana State University, Uzbekistan

ABSTRACT

The article describes, in detail, the dynamical development of soil and geographical research conducted in the Fergana Valley in 1918-1945. Exactly at those years the comprehensivestudy introduction of the soils of the Fergana Valley was scientifically substantiated by the prevalence of different soils in the region, and specific scientific ideas were developed. The article describes in detail the growing geo-ecological significance of soil in the process of geographical research conducted in 1918-1945 and describes its scientific results.

KEYWORDS

Fergana valley, nutrient base, soil-geographical, soil-ameliorative, soil-botanical, bare soils, saline soils, viorst, scale, expeditionary research, route-recognition, lyoss genesis, systematic research, mechanical, chemical composition of soils.

INTRODUCTION

Soil surveys in the Fergana Valley have taken on the character of a goal-oriented systematic description only in recent years. It is known that the pre-revolutionary studies were mainly schematic description of the maps, which were based on route-reconnaissance observations. After the 1920s, the study of soils in the Fergana Valley began to form on a very large scale.The expansion of arable land from year to year, the measures taken to obtain high yields, the introduction of new varieties of industrial crops, the creation of a solid fodder base for livestock, afforestation and agro-amelioration - these are the many soil sciences that must be addressed. required the development of research. These initiated

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studies were conducted first in an expeditionary, then in a semi-stationary and inpatient characterization.

THE MAIN FINDINGS AND RESULTS

Soil-geographical, soil-ameliorative, soil-botanical researches of Central Asia are carried out by the Institute of Soil Science and Geobotany of the Central Asian State University in its economically necessary regions, including the Fergana Valley. It was the scientist N.A. Dimo who was instrumental in the establishment of the institute (1920) and led the research work of the institute for 12 years. He also directed soil-botanical and soil-geographical research in Central Asia by the Department of Land Improvement, which operated from 1907 to 1914. The research activities of the Institute of Soil Science and Geobotany were carried out on a larger scale, as seen in the description of expeditionary research.

In 1921, researchers of the institute conducted research on the whole of Central Asia, as well as on the tasks of the Department of Land Management of the Republics of Narkozem, Vodkhoz, Turkestan. Most of the results of scientific research have remained unpublished. Only a part of it has been known to us.

In 1926, 22 expeditions and scientific teams of the Institute of Soil Science and Geobotany of SAGU conducted research in Central Asia. They were attended by about 50 researchers of the institute. Among the soil-botanical and soil reclamation expeditions are the following expeditions that carried out scientific research in the Fergana Valley and adjacent areas:

In 1926, K.M. Klavdienko studied the soil cover of 80,000 hectares in the Yazyovan desert in the Fergana Valley. In his surviving manuscript we can see that a soil map of the area was attached.

In 1927, A.A. Mentsi on behalf of the Department of Land Management of Andijan district studied 1,200 hectares of soils in the Karakalpak steppes of Central Fergana. The main purpose of A.A. Mentsi's research was to determine the level of agricultural suitability of land, to divide it into parts that could be developed and suitable for construction. Therefore, in his report, the researcher describes the structure and ecology of soil and vegetation cover on the surface soils and groundwater.

A.A. Mentsi summarizes his field and cameral studies and makes the following point in the general conclusion: "These lands cannot be used in such a way that they are too saline, in order to use these lands it is first necessary to establish a proper drainage network" [2].

In January and February 1927, together with A.N. Rozanov and G.N. Olovyanishnikov, they studied the soil cover in the Karakchikum district of the Fergana Valley. This work will be carried out on behalf of the search department on the northern slope of the Turkestan ridge. 36,200 ha will be surveyed on a two-pronged (1: 21000) scale, which is acceptable in field research.

The results of the expedition's research formed the basis of A.N. Rozanov's 1928 essay on the soils of the Qaraqchi sand region. According to A.N. Rozanov, the soils of this region of the Fergana Valley consist mainly of primitive bald and saline soils. The soils of the

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main part of them are sandy soils of different mechanical composition. According to A.N. Rozanov, the categories of different areas are as follows:

1. Unsuitable and less suitable for assimilation-19803, 4 ha or 54%.
2. Suitable lands, but very demanding to improve the reclamation condition (mainly need to build underground drainage systems), which is 7778.0 ha or 21.5%.
3. Arable lands and lands that need to be partially improved, which is 8264.6 ha or 23.3% [3].

In 1928, the staff of the institute A.N.Rozanov, A.A. Mentsi and A.F. Ioffe conducted research in 3 districts of the Fergana Valley on behalf of the Central Asian Water Management.

In the Namangan irrigation region, research was conducted on an area of 50,000 hectares. A.N.Rozanov in his report for 1929 gave a detailed description of the In the period from 1926 to 1928 the basin of the Kugart River (A.N.Rozanov, D.I.Tarasov), Khojand district (S.N.Pustovoyt), Ak-bura and Shahrihansay (D.I.Tarasov, O.I.Yankina)) soils were surveyed and mapped.

In 1928-1929, an expedition led by A.N.Rozanov explored the right bank of the Syrdarya to the Chatkal Mountains. In the same years in the Yazyovan and Margilan districts conducted soil-botanical and soil-geographical research by K.M.Klavdienko and others.

The research led by A.N.Rozanov in 1928 also studied the soil and vegetation of the Kuyganyor plot of Andijan district. The main purpose of these studies was to examine the soil and vegetation cover, to survey on a 2-scale scale, to determine the level of suitability for irrigated cultivation.soil-geographical and soil-reclamation condition of the area.

The area studied by the expedition covered an area of 160,000 hectares, including the northern and northeastern edges of the Fergana region. The results of soil and geographical research of the expedition formed the basis of the manuscript of A.N.Rozanov [4].

According to the researcher, the soils of the Kuyganyor area of Andijan district can be divided into 3 types: desert, saline, swampy soils.

Further researches of A.N.Rozanov were carried out in the Syrdarya basin of the Fergana region at the confluence with the Syrdarya in the lower reaches of the Rizaksay, Govasay and Olmossay. This work also consisted mainly of compiling a soil-botanical description of the area. As a future irrigation facility, 10,000 hectares were covered with a 2-acre scale survey.

A.N.Rozanov's report, along with the description of the soil cover of the region, also provides information about the relief, groundwater. The researchers found that the area under study was formed by desert light soils, cultivated irrigated soils, and various saline soils.

All soils in the area were assessed without showing the area of distribution. A.N.Rozanov also drew a map on a scale of 1: 100,000.

Staff of the Institute of Soil Science and GeobotanyYu.A.Skvortsov and G.I.

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Olvyanishnikov studied the soils of newly developed lands in the eastern part of the Fergana Valley in Osh district at the suggestion of the Jalal-Abad Department of Land Management, but the scientific results of this research were not found in the archives.

In 1928, the soil-geographical expedition of the institute conducted research in the Uchkurgan district of the former Andijan district. Soil scientists DI Tarasov and Z.B.Seleterennikova, together with geobotanist A.F.Ioffe, conducted a 2-scale survey of 14,000 hectares of water resources in the Uzbek SSR. The scientific results of the expedition helped D.I.Tarasov to compile a soil geographical sketch of the region.

According to D.I.Tarasov, there are different soil types in the region. The formation of soils of the type "desert soils and cultivated oasis soils" is found in all areas of the region, except for small rocky and sandy plots, and again in deserts, and these soils are suitable for irrigated agriculture [5].

In the same year (1928) on behalf of the Andijan district department of the Department of Land Management A.A. Mentsi engaged in the survey of soils in the Uchkurgan region and in the Karakalpak steppes of Central Fergana at a scale of 1: 20,000. From the reports of A.A. Mentsi, we know only the soil essays of the land fund №5 and №6 of the Karakalpak land management region of Andijan district.

In the spring and summer of 1929, K.M.Klavdienko and A.A.Mentsi conducted special soil studies in the Yazyovan, Boston and Shahrikhan massifs of Central Fergana on behalf of the People's Commissariat of Land Management of the Uzbek SSR. purposes. The reports of the expedition participants show that the soils of these massifs consist mainly of saline, swampy and cultivated-oasis soils. When describing the soil cover by the researchers, the results of physicochemical analysis of the soil and soils and the appearance of the cuttings are given. Researchers emphasize that the presence of groundwater in the massifs leads to the swamping of the soil, which is impossible [6].

In 1929, V.D.Ryabov conducted field research on similar soils in 3 plots of land in the Fergana Valley: Janjal in Namangan, Dasht in Turakurgan and YangiShahand. V.D.Ryabov's conclusions preserved in the republican archival fund give a description of the soil cover of each plot of land [7].

In the same year, the Institute of Soil Science and Geobotany began a large-scale study on the application of mineral fertilizers to the soils of experimental plots. This work was carried out mainly in the three Central Asian Republics, namely Uzbekistan, Kyrgyzstan and Turkmenistan. The complex research work consists of 2 parts:

1) Field work.

2) Chamber and analytical work.

The fieldwork was compared with the topographic location. These works were necessary to determine the depth of groundwater, to describe the structure of the soil and to determine the morphological structure of the soil.

Part of the in-house and analytical research work was to determine the diversity, type,

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type, type of soils in the plot, to recommend the application of fertilizers on the basis of materials with a description of the mechanical and chemical composition of soils on the main sections.

Similar work was carried out in the Fergana Valley of Uzbekistan at the following points:

1. Poytug village of Andijan district (at the foot of Karadarya).
2. In the village of Dardman of the former Andijan district.
3. Around the city of Andijan.
4. In the area of Kugay station, in the steppes of Uchkurgan.
5. In the village of Avval of the former Fergana district.
6. In the village of Ultarma of the former Kokand district.
7. At the post office.
8. In the city of Chust.
9. Around the city of Namangan.
10. Around the city of Margilan.

A.N.Rozanov, V.D.Ryabov, G.P. Popov and a number of other tourists from the staff of the institute took part in the collective study of the soils of the experimental plots of the Fergana Valley to increase its productivity by applying mineral fertilizers. There was a lot of interesting scientific information in the materials in this study. However, these materials remained unpublished.

In the summer of 1929, on behalf of the Upper Syrdarya Design and Research Party of the Central Asian Water Resources, under the leadership of D.I.Tarasov, natural-historical and soil-geographical research was carried out in Akbura-Shahrikhan district. The main purpose of the expedition was to determine the suitability of the study area for irrigated agriculture. D.I.Tarasov and O.I.Yankina created a natural-historical, soil-geographical sketch of the area as a result of processing of soil samples based on the rich materials collected during the expedition and the routes made, as well as the results of in-camera and analytical scientific work. The essay was completed with a 1: 100,000 scale soil map of the area.

Extensive and systematic study of the soil cover of the Fergana Valley by university scientists has led to the discovery of the basis of the distribution and development laws of the valley soils and the development of a system of science-based measures for the rational use of land resources. In addition to the Institute of Soil Science and Geobotany, other organizations, institutions and research centers have contributed to the study of the soils of the Fergana Valley. In the 1930s, Sazgiprovod was also involved in a number of soil surveys and land reclamation studies.

As N.V. Kimberg points out (1949) "Unlike previous studies, these studies are characterized by accuracy and great depth" [8]. F.P.Ponomaryov in the Karadarya system of Fergana, A.Z.Zaychikov in the Sokh area and A.P.Livanov in the Isfara region conducted soil research and compiled soil maps at a scale of 1:25,000. In these studies, the main focus was on the dynamics and mineralization of groundwater, the composition of groundwater in the soil, and so on.

In 1934-1937, the Central Station of Agro-Soil Science and Fertilization was established in Kokand, Margilan, Namangan, Andijan and East Fergana regions by the well-known soil scientists of the Republic A.N.Rozanov,

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N.V.Kimberg, M.A.Pankov, S.A.Shuvalov and others. soil and reclamation research.

CONCLUSION

In 1936, A.N.Rozanov studied the soils and sands of the Fergana Valley. He created a systematic map based on the materials of Fergana sand research.

A.N.Rozanov records the sands of the study area on the basis of materials of research routes and divides them into 13 districts. In this work, the researcher focuses on the issues of economic development and reclamation of sands. However, in the past, research of this nature was mostly conducted on the road. The researcher states that the sand massifs can be used for economic purposes and that these massifs can be used for desert livestock purposes, and shows the conditions, dynamics and hydrogeological factors of the sand location.

A.N.Rozanov shows the following 4 sand massifs in the Fergana valley (1938):

1. Karakum sandy region.

2. Syrdarya sandy region.

3. Left bank West Fergana sandy region.

4. Central Fergana sandy region.

Since 1937, the soil science sector of the Science Committee has also made a valuable contribution to the study of the soils of the Fergana Valley. As a result of the research of S.A.Shuvalov (1941) in connection with the alternating sowing of cotton and alfalfa, the issues of soil salt regime began to be covered.

In 1934-1937, the Central Soil Science and Fertilization Station of Soyuz NIXI studied the soils of the lands belonging to the MTS, which served cotton growing, and determined the effectiveness of mineral fertilizers.

Survey of soils of Central Fergana (S.S.Pustovoyt, M.I.Parshakov), Sokh spread (A.Z.Zaychikov) and Isfara spread (A.P.Livanov) in 1939-1940 Irrigation and reclamation projects for Soyuzproekt became the basis for the preparation.

In the early 1940s, as a result of soil-geobotanical and soil-geographical expeditions of V.A.Kovda and A.N.Rozanov, the lands of Central Fergana were ameliorated.

In order to expand irrigation and land reclamation in the Fergana Valley, on the basis of the above materials, the genesis of the valley soil cover, agrochemical, lithological composition, salinity, characteristics of groundwater were mapped and regulated. (M.A.Pankov, A.N.Rozanov). These became the basis for the design of the Greater Fergana Canal (according to A.F. von-Middendorf, 1879).

The period of soil and geographical research in the Fergana Valley and adjacent areas from 1917 to 1945 can be considered as a period of study of soils for irrigation and reclamation purposes [7].

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