SOIL AND DESERTIFICATION PROCESS ON THE PAMIRS MOUNTAIN ECOSYSTEMS

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The Pamir mountain ecosystem is a most part of the territory of Tajikistan. Taking into account characteristic feature of the Pamir region we can divide this region into three parts: Northern, Western and East. We shall note only, that Northern part consists of ridges: Zaalaysky, Peter 1 and the Academy of Sciences.

Absence of the uniform developed principle of soil classification and diagnostics in Tajikistan, including the Pamir, makes inconvenient detailed elaborations and their application in various branches of sciences, an agriculture and cartographical works. Up to present among soil sanctities there are various, frequently inconsistent interpretation in the names and soil classifications the Pamir region.

On the basis of review our field expeditions during 1979-1987 years and 2000-2008 years, literary and archival materials submit the following soil classification on the Pamir: mountain light brown soil type; high-mountainous meadow -steppe type; high-mountainous steppe type; high-mountainous deserted - steppe type; high-mountainous deserted type; high-mountainous zangoviy type; high-mountainous takir type; high-mountainous meadow type; high-mountainous meadow -marsh type; high-mountainous marsh type; high-mountainous solonchak soils type.

Besides on the Western Pamir from the settlement Andarob up to the settlement Lyangar in limits the type of soil juniper forests is allocated a subtype relic soil juniper forests, and on Panj and Pamir river banks - soil type, which was became the steppe. Around of large lakes the sandy soil type is allocated. All above mentioned soil types are subdivided into subtypes. Some soil types depending on prescription of development are subdivided into irrigated and not irrigated subtypes.

Studying of Pamir soil has allowed characterizing existing natural interrelations between separate soil groups and factors of soil formation. On the basis of this approach of Pamir soil classification and diagnostics was developed for the scientifically-grounded mapping of soil resources with a view of their rational use, protection and reproduction.

Almost all Pamir soil is subject to a different degree of erosion and a deflation. On East Pamir wind erosion prevails of water erosion. There is barchans in height up to 4 meters around of large lakes are located. Slopes of mountain ridges on East Pamir are cut numerous erosion denudations by forms of a relief (obburida – cut by water). On Northern and Western Pamir only water erosion develops. And mountain slopes these regions are very strongly cut by obburids and gullies. Density of these forms on some sites reaches 7,6 km/km^2. In considered region denudation process prevails of processes of the raising mountain ecosystem.

There are not big sandy massive of an alluvial origin on the banks of large rivers in the Western Pamir, which are submitted as not so big barhkans, the speed of movement of which reaches some tens meters per one year.

For Pamir we except obburide allocate special type of water (snow) erosion – small stream, i.e. after thawing snow very fine negative relief forms are formed.

Except for erosive processes on the Pamir other kinds of desertification are allocated also, such as salinization and ground water which have local distribution and have the insignificant areas.

It is necessary to note, that in places of the most intensive influence of a wind the small sites of deflation plains with attributes of clear removal by wind are found out which are usually on a direction of a wind pass in sand - deflation loops, covering soles of slopes, which are especially represented in northern east of isolated terrain features Kosh - Agyl, in area of lakes Karakul and Rangkul and in Alichur valley. In some places of examined territory there are sandy dunes. Sand-

deflation loops with bright expression of wind erosion are characteristic for a valley of the river Pianj in Ishkashim district.

In the bottom part of alpine areas the pasturable erosion is developed, in nival zone denudation processes are advanced. Wash-out of soils in a alpine zone depending on projective covering of vegetation and exposition of slopes makes from 1,5 up to 120,4 t/ha. The slopes of a southern exposition are strongly subject to water erosion, than northern and the surface erosion here is less by 10 - 100 times, than in southern. Ravine erosion in alpine zone is advanced poorly.

The special place in orography of Alpine spaces the high uplands of East Pamirs with glacier, nival and deflation processing occupy. Ranges of East Pamirs differ from the ranges of erosion-denudation Alpine areas by a smaller steepness and dividedness of slopes, capacity of water flows, engendering on slopes these of ranges, is insignificant, therefore they do not form deep gorges, as it is observed on Western Pamirs.

On the basis of space photos soil and erosion maps are made.