



REGIONAL SOIL DISTRIBUTION ON THE WESTERN SIDE OF THE HAȚEG BASIN AND POSSIBLE RELATIONSHIPS OF SOILS WITH PARENT ROCKS



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Figure 1 – Location of the studied area



INTRODUCTION

Regardless of field of study, the classifications reflect the knowledge of the investigated material. The aim of this paper is to update the nomenclature of soils in the Hațeg area (Romania), as they issued on the map "Soil map of Romania", 1:200.000, *folio* 25-Deva (FLOREA et al, 1990).

The soil classification in Romania is still in progress, so that, a new system of soil classification was coined on 2003 and improved in 2012, incorporating the advances done in soil research in the time passed since the last classification (1980). The new system, called "Romanian System of Soil Taxonomy" (RSST-2012), is in accordance with the requirements evidenced by the World Reference Base for Soil Resources-2006 (abbreviated, WRB; KRASILNIKOV et al., 2009).

In the RSST-2012, the basic taxonomic unit is the soil type genesis. Is a hierarchical, multi-category system including three higher level categories (class, soil type and subtype genesis) and four lower level categories (soil variety, soil species, soil family and soil variant).

The soil properties are coming from the interaction of multiple factors. The nature of parent material has a high influence on the characteristics of the soil: texture, type of weathering processes, control of natural vegetation composition.

Geology of the study area

The studied region is located in the central-western side of Romania. From a geological point of view, it concerns rocks representing either the borders, or the sedimentary filling of the Hațeg Basin occurred in the latest Cretaceous in Southern Carpathians (WILLINGSHOFER et al., 2004). The basin borders concerns metamorphic rocks, while the sedimentary filling refers to conglomerates, sandstones, clays, sandy clays, marls, or rare limestone interbeddings, mostly latest Cretaceous (in dominance Maastrichtian), rather problematic Paleogene-Early Miocene, Middle Miocene (Badenian-Sarmatian) and Quaternary.

Table 1 presents the correlation between soil mapping units of the Soil Map of Romania, scale 1:200,000 (*folio* 25 Deva) and the RSST-2012 system (BLAGA et al. 2005). It has taken into account the correlation of the soil type's genesis of RSST with the main international systems presented by MUNTEANU & FLOREA (2001).

CHARACTERISTICS OF SOILS IN HAȚEG AREA

The subsoils for Luvisols-LV and Preluvosols-EL soil type usually contain unconsolidated material, commonly high activity clays that occur in the area here in latest Cretaceous-?Paleogene and ?Lower Miocene deposits. The soils of Eutricambosol-EC and Dystricambosol-DC type soils naturally form on medium- to fine-textured parent materials, derived from a wide range of rocks. In the studied area, they are located on the borders of the Hațeg Basin, formed on metamorphic rocks.

Rendzinas-RZ and Phaeozems-FZ type soils are less spread, originating on massive, respectively disaggregated calcareous sole, rare in the area. Podzols-PD and Prepodzol-EP type occupy small areas, generally derived from quartz-rich sands and sandstones or sedimentary debris resulted from magmatic rocks. Gleysols-GS and Stagnosols-SG are soils saturated by groundwater for long periods and are developed on the unconsolidated material (gravels, sands), mainly Pleistocene-Holocene alluvial sediments. Aluvisol-AS type contains soils formed on recent, alluvial (fluvial) deposits and consists mainly of gravels and sands.

Tabel 1

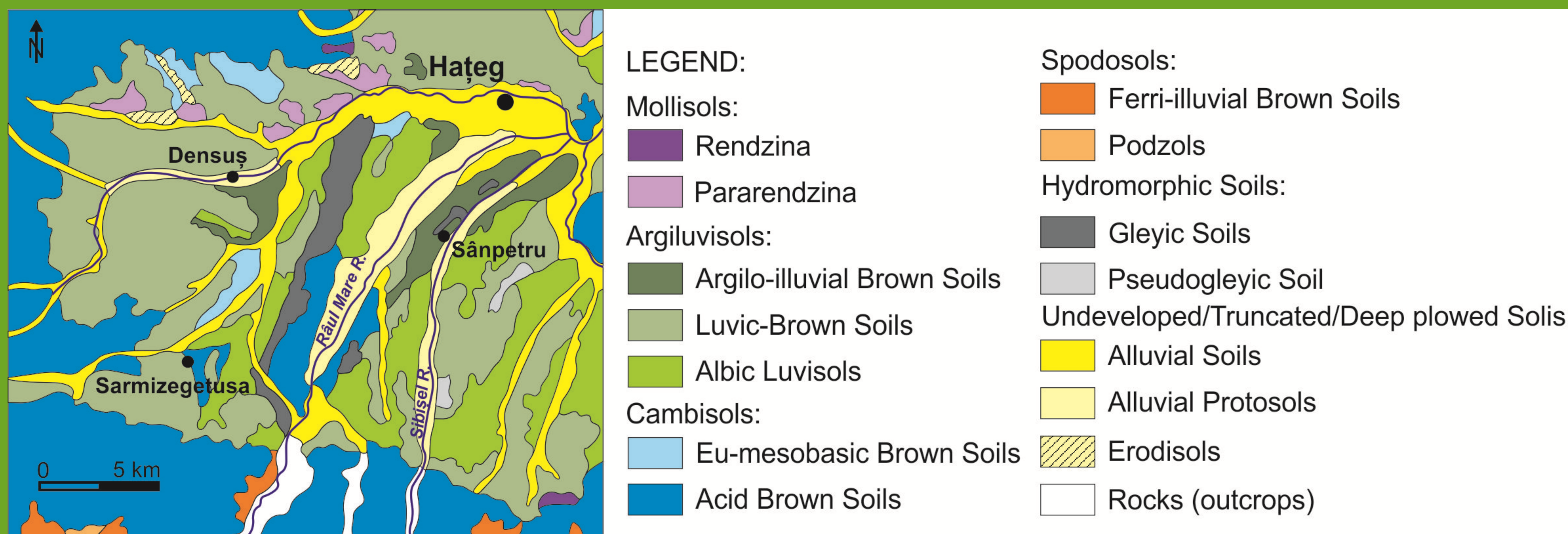
RSST-1980		RSST-2012	
Class	Type	Class	Type
Argiluvissols	Argillo-illuvial Brown Soils BD	Luvisols LUV	Preluvosols EL
	Luvic-Brown Soils BP		Luvosol LV
	Albic Luvisols SP		
Cambisols	Eu-mesobasic Brown Soils BM	Cambisols CAM	Eutricambosol EC
	Acid Brown Soils BO		Dystricambosol DC
Mollisols	Rendzina RZ	Cernisols CER	Rendzina RZ
	Pararendzina PR		Phaeozem FZ
Spodosols	Ferri-illuvial Brown Soils PB	Spodosols SPO	Prepodzol EP
	Podzols PD		Podzol PD
Hydromorphic Soils	Gleyic Soils GC	Hidrisols HID	Gleysol GS
	Pseudogleyic soils PG		Stagnosol SG
Undeveloped/ Truncated/ Deep plowed Soils	Alluvial Soils SA	Protosols/Ant hrisols PRIO/ANT	Aluvisol AS
	Alluvial Protosols AA		Erodosol ER
	Erodosols ER		Rocks
	Rocks (outcrops) Z		

CONCLUSIONS

As mentioned before (VLAD et al, 2012), it is difficult to achieve an accurate description of the soil units on the Soil Map of Romania (1:200.000 scale) using WRB (2006), because many of the soil mapping units have to be redefined using WRB terms, which is almost impossible at this time.

Possible relationships between the soils from Hațeg area issue on their distribution. The largest spread is the ones developed on the main sedimentary fill deposits of the Hațeg Basin, while the ones developed on the basin borders, i.e. on older rocks are different.

Figure 1 – Soil map of Hațeg region, Romania (after FLOREA & BĂLĂCEANU, 1990, modified)



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