

Aspecte de mediu cu importanță pentru relief/ *Environmental Aspects Related to the Relief*

Land Use Change since the Neolithic Period in the Marginal Zone of the Carpathian Foothills

Malgorzata Pietrzak

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Abstract: Based on archaeological materials and historical documents an attempt was made to characterize the settlement and agriculture in the Carpathian Foreland area. Three phases of intense activity were identified in the development of prehistorical settlement: Early Neolithic, Bronze / Iron ages and the Late Roman period. Starting from the Early Middle Ages (10th century) to A.D. 1,500 the Carpathian Foreland was entirely colonized. During that time a basic network of human settlement and transportation roads was formed along with the current arable land patterns. Contemporary agricultural land accounts for 70% of the total surface area (arable 51%, grasslands 19%, forests 22%). The main problem is the lack of profitability in this area due to the size and shape of the fields.

The poster overviews the history of settlement and economy in the marginal zone of the Carpathian Foothills. A particularly significant issue is the influence of natural conditions on the development of settlement and economic activities and the transformations they cause to the environment.

The area of the study covers approximately 100 km² of the marginal zone of the Carpathian Foothills between the Raba and the Uszwica Rivers (fig. 1). The studies were based on archeological and historical documents and also on documents and maps from the State Archive in Cracow, the Archive of the Regional Museum in Tarnów, the Historical Archives of the Ukraine in Lviv, the War Archives in Vienna, the Jagiellonian Library in Cracow, the Library of the Polish Academy of Sciences in Cracow, the Department of Land Survey and Cartography of the Municipal Office in Bochnia and data from the agricultural register obtained in 1988.

The beginning of settlement in the marginal area of the Carpathian Foothills goes back to the year 6000 BC (Jodłowski, Skowronek, 1980). The number and location of archeological vestiges indicate a dense and permanent Neolithic

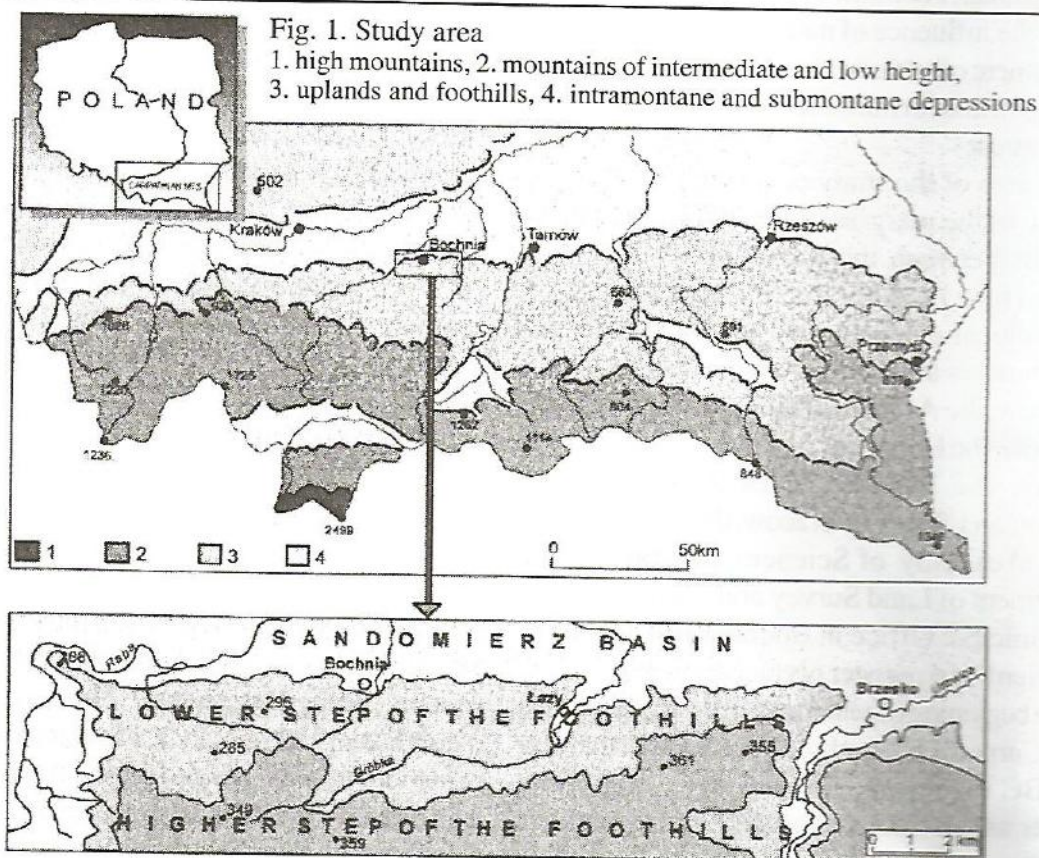
settlement in this area. The comparison of archeological sites from the Neolithic and from later periods confirms the thesis on the high mobility of the Stone Age populations and their ability to adapt to different environmental conditions (Rydlewski, Valde-Nowak 1979). The most intense settlement occurred between 4500 and 3500 BC (or according to new data 5300 - 4300 BC). The Neolithic settlement mainly concentrated in flat areas of the summit plains, not far from watercourses. The peak period of prehistorical settlement took place between AD 180 and 400 (Cetera, Okoński 1993). The Przeworsk culture is linked to a maximum expansion and population density in the area of the Carpathian Foothills. The population of the Przeworsk culture not only colonized hills and elevated parts of the summit plains but also the edges of flood terraces. The next phase of intense settlement expansion occurred during the Early Middle Ages, starting from the 7th century to the first half of the 13th century. The distribution of the archeological finds indicates that the expansion of settlement was initiated during the 7th century. The development of early medieval settlements was dependent on favourable relief, type of soil,

commercial routes and occurrence of saline sources. It was also reflecting the river network. The period between the 7th century and the first half of the 9th century was characterized by weak and scattered settlement. According to Żaki (1974) and Leciejewicz (1989), about 6% of the entire surface area was economically exploited until the 10th century, whereas during the 10th century the range of economic activities covered 24% of the entire area. This was the consequence of a shift from intense "gardening-like" farming (limited in terms of space) to a more extensive pattern. It is known that a major part of the area was the property of kings and was covered by forests. The percentage of forests and meadows in the total surface area diminished from approximately 70% in the 14th century to about 50% in the 15th century.

The human activities carried out throughout the Middle Ages permanently transformed the natural landscape into an agricultural one. Starting from the 15th century arable land began dominating the Carpathian Foothills. In the 13th and 14th centuries the economic development and intense settlement were based on the rental law and in the 15th century feudal farm structures were created (Przyboś, 1995).

The creation of farming estates was linked with a comeback of feudal structures, causing a reduction in the production capacity of peasant farms. Numerous wars, epidemics, natural disasters were reflected in a lack of population growth and the decline of the economy in the 16th and 17th centuries (Wojas, 1980). Thanks to Joseph's (Josephite) and Frank's (Franciscan) registers (from the turn of the 18th century) it is known that arable land occupied 61% of the total surface area, meadows accounted for 11%, pastures, bushes, gardens and fallow land covered 11% and the forests 17%. When Poland gained independence, the key problem of rural areas was the fragmentation of land (the most frequent farm size was below two hectares).

During the interwar period the situation did not improve because of the economic crisis and of some natural factors such as numerous floods. The postwar period is characterized by further land fragmentation. Contemporary agricultural land accounts for 70% of the total surface area (51% arable) (Stelmach et al., 1990). Grasslands cover 19% and are mainly located on the valley bottoms and on land creeping and sliding forms which are not suitable for ploughing.



Forests account for 22% of the total surface area and cover the steepest slopes. Almost 95% of the arable land is privately owned. The lack of profitability in this area is caused by the size and shape of the fields. The average size of a farm is only 2.98 hectares. An average farm is composed of 5 fields of 0.68 hectare each.

Farms over 10 hectares account for 0.5% of the total number. The land plot layout is a follow-up of the medieval system of plots stretching between the road and the forest. The field is a narrow strip beginning to stretch out from the farmer's house. Traditionally, ploughing is done along the slopes.

The relatively high population density and percentage of arable land in the land use structure over the entire period of historical exploration of the Carpathian Foothills by man indicates a relatively good adaptation of the historical populations to the existing environmental conditions and the tolerance of the local natural habitats to anthropic influence.

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