

## STUDY OF NATURAL CONDITIONS AND SOCIAL RESOURCES FROM ȚIBĂNEȘTI MICROZONE, IAȘI COUNTY

Liliana Bițic, A. Chiran, Elena Gîndu

*University of Agricultural Sciences and Veterinary Medicine  
„Ion Ionescu de la Brad” Iasi, Romania  
e-mail: liliana\_b\_rotaru@yahoo.fr*

### Abstract

*The studied area focuses on the territory of Țibănești Microzone, Iași County, which is an integrating part of the Northeastern Development Region of Romania. Geomorphologically, the territory of the Țibănești Microzone belongs to the sculptural relief of the Moldavian Plain, which is characterized by a highly continental climatic regime with cold winters, very hot summers and frequent droughts. The Țibănești Microzone includes the Țibana, Țibănești, Tansa and Dagâța communes, having a total area of 24,769 ha and 23,150 people, of which 1192 are employees.*

*The aim of this work was to show the necessity of taking some measures, which contribute to the future development of the studied microzone:*

*-Promotion of investments in the main fields, which use the labour surplus and lead to an increase in the people's living level;*

*-Promotion of some investment projects for increasing the degree of social infrastructure within the microzone, but especially in the Tansa Commune;*

*-Setting up viable private farms, for the agriculture straightening, by using at maximum the entire natural, economic and human potential from the studied area.*

*The analysis of indicators concerning natural and social conditions of the Țibănești Microzone emphasised the need of starting development programs where the main objectives be represented by removing the weak points and changing them into opportunities.*

**Key words:** analysis, natural conditions, social conditions, microzone

### PREFACE

The results of scientific research and of farming practices, obtained under certain climate and soil conditions, are available only for a certain area. The extrapolation of these data to other areas is relative, requiring the study on each area of the main soil and climatic conditions that highly influence the development degree of a certain area (I. P. Otiman, 2006). Thus, we may explain our approach concerning the presentation of essential elements of the natural and social frame from Țibănești Microzone, Iași County.

### MATERIALS AND METHODS

The scientific research in the economic and social field is based on using more classical, modern and economic-mathematical research methods.

Our investigation focused on gathering, selecting, processing and interpreting data, drawing conclusions and recommendations. The studied area is represented by the territory of the Țibănești Microzone, Iași County, which is an integrating part of the North-eastern Development Region of Romania. Using some specific indicators, the authors had as aim to point out the most significant aspects concerning the natural and social conditions, which are determining factors in projecting the strategies of economic and social development, in the prospect of year 2013.

### RESULTS AND DISCUSSION

#### Study of natural conditions

Geomorphologically, the territory of the Țibănești Microzone belongs to the

sculptural relief of the Moldavian Plain, where there are found slopes, sculptural interflues under the shape of plateaus, with thick weakly bent ridges, while at the base of slopes there are accumulative-sculptural areas, represented by narrow valleys.

**The eroded slopes** occupy large areas, erosion being a negative phenomenon resulting in the destruction of the soil layer. Sometimes, soil is entirely eroded and the parent rock appears at surface.

**Landslides** are found on slopes and at the origin of narrow valleys in the western part of the territory. The slide-diluvium, made up of a mixture of clays, clayey-marls and, sometimes, saliferous deposits, has a fragmented surface under the shape of waves or hillocks, with a height varying between 0.2 and 0.8 m and small moist depressions. In some places, there are *active slides* and *stabilized slides*.

**The loessoid deposits** occupy the greatest part of the territory, being spread on slopes and plateaus. Typical chernozems and leached chernozems were formed on these deposits.

**Marly clays** and **clayey marls** occupy more reduced areas and are spread on some ridge plateaus and on slide slopes. Sometimes, marls have a high content of soluble salts. Typical leached chernozems and, sometimes, weakly pseudogleic ones were formed on these deposits. Fluvial and coluvial deposits have been identified on some narrow valleys.

In very rainy years, the impermeable trait of parent rocks in the narrow valleys and the soil clayey texture make waters to be stagnated.

Because of the great variability of soils, their pH is different, comprised between 2.0 and 8.5, from highly acid to highly alkaline. The prevalent soils are weakly to moderately alkaline (47.3 %). The alkaline soils are present on eroded slopes and the alluvial-coluvial soils, across valleys, while the more acid soils are found on the high plateau relief.

#### **Hydrology and hydrogeology of the area**

Hydrographically, the Vadu Veșii Rivulet springs from this area, has a temporary course with great flow and level variations and overflows in the dam from the Țibana Commune.

The groundwater was found at depth of 4.5 – 10.0 m (*on plateaus and slopes*), 0.5 –

2.0 m (*on narrow valleys*) and at 3.0 – 5.0 m (*in the slide areas*).

#### **Climatic regime**

The Țibănești Microzone is situated within the continental climatic region, climate being continental, with cold winters and hot summers and frequent droughts.

**The microclimate of slopes with eastern exposure** includes less sunny slopes. During the year, the temperature is lower, because of reduced sun shining, exposure to cold winds and snow persistence in spring.

**The microclimate of slopes with western exposure** includes sunny slopes, on which snow melts faster due to a stronger sunshine.

Strong winds, abundant rainfalls and lower temperatures characterize **the microclimate of plateaus** in summer and in winter.

#### **Thermal regime**

**The mean annual temperature of air** is of 9.5°C and it is favourable to main crop growing (wheat, maize, barley, soybean, sunflower, apple tree, pear tree, alfalfa, etc.).

**Minimum absolute temperatures below 0°C** were signalled from the second decade of October until the last decade of May.

**The early autumn frosts and the late spring ones** affect especially the valley bottom. The early hoarfrosts generally appear before the frosts in the autumn.

**The sum of temperature degrees** during 1 March - 31 October is of 3476.5° C, with an average of 14.7°C, and during 1 May – 31 October, it is of 3111.6°C, with an average of 16.9°C.

#### **Rainfall regime**

The annual mean of rainfalls is of 580 mm. During May – June, a maximum of 88.9 mm is found.

**During the vegetation period**, rainfalls amount to 400 mm. The number of days with rainfall amounts over 1 mm is, on the average, of 72, with low variations from one year to another.

#### **Natural vegetation**

Geobotanically, the territory of the Țibănești Microzone belongs to the forest steppe.

**Grasses** covers the bottom of the narrow valleys and the degraded slopes, affected by slides and erosion.

The forest fund has almost 19.2 % of the total area of the microzone and is mainly made up of more species (*Robinia pseudocacia*, *Tilia cordata*, *Populus canadensis*, *Fagus sylvatica*) and coniferous species may be found on the highest tops.

On meadows, *Festuca vallesiaca* and *Stipa joanis* associations are often found. Besides these species, *Agropyron cristatum*, *Poa pratensis*, *Bromus inermis* and *Poa bulbosa* have a high frequency on degraded meadows. On narrow valleys, there are hygro-halophytes associations, typical of wet and salinized areas.

The cultivated plants are wheat, maize, barley, beans and alfalfa, as well as apple tree, plum tree, pear tree and other species of fruit-growing trees.

#### Human resources and infrastructure

The Țibănești Microzone includes Țibana, Țibănești, Tansa and Dagâța communes, having a total area of 24,769 ha and 23,150 people, of which 1192 are employees.

The population of the Țibănești Microzone has a density of 93.6 people/km<sup>2</sup>, being very close to the national average, with clear differentiations according to communes: 83.1 in Țibănești Commune and 105.2, in Țibana commune (tab.1). The population natural increase is positive, except Tansa Commune, where it is negative. We found a high percentage of the people aged over 60 (29.9 %), as compared to the people aged until 18, who are, on the average, only 20.9 %, while in Tansa Commune, they represent 12.4%.

The number of services units from rural environment – that worked as consumption cooperatives – has diminished because of a decrease in demand and of the deficient organization and marketing. The industry employees from the studied area are commuters having jobs in the city of Iași. We may notice that in the rural environment, the people involved in trade reached 17.4%, due to the creation of mixed shops (tab. 2).

Table 1  
 Indicators on the population from the Țibănești Microzone, Iași County (2007)

Indicators	Țibana	Țibănești	Tansa	Dagâța	Total microzone	%
<b>Total population, of which:</b>	<b>7434</b>	<b>7819</b>	<b>3057</b>	<b>4840</b>	<b>23150</b>	<b>100.0</b>
- women	3579	3790	1549	2298	11216	48.5
- men	3855	4029	1508	2542	11934	51.5
- people aged below 18	1764	1575	380	1114	4833	20.9
- people aged between 18 -60	3731	4009	1780	1874	11394	49.2
- people aged over 60	1939	2235	897	1852	6923	29.9
- born children in life/year	157	115	26	92	390	1.7
- total deceased/year	62	111	31	51	255	1.1
- settlings in the locality	-	-	-	-	-	-
- moving out of the locality	81	77	42	41	241	1.0
<b>- total employees</b>	<b>366</b>	<b>404</b>	<b>186</b>	<b>236</b>	<b>1192</b>	<b>100.0</b>

Table 2  
 Permanent employees from the Țibănești Microzone (2007)

Indicators	Țibana	Țibănești	Tansa	Dagâța	Total microzone	%
<b>Total employees, of which:</b>	<b>366</b>	<b>404</b>	<b>186</b>	<b>236</b>	<b>1192</b>	<b>100.0</b>
- agriculture	11	13	3	-	27	2.3
- industry	108	79	71	26	284	23.8
- electric, thermal energy, gases, water, constructions	1	29	2	48	80	6.7
- trade	60	84	38	25	207	17.4
- transport, storing, mail service, communications	6	6	5	24	41	3.4
- public administration	12	12	14	10	48	4.0
- education	124	124	31	85	364	30.6
- health and social assistance	44	57	22	18	141	11.8

Another method of using the available labour in that microzone was RARE DESIGN Ltd, the ready-made clothes factory from Țibănești Commune that had 1400 employees when it set up in 2001, while in 2005, the number of employees decreased at 453. This unit has used especially the feminine labour, but due to the defective policy of the firm managers, this unit failed

in March 2006, thus increasing the number of the unemployed people in that area.

**Analysis of indicators reflecting the situation of infrastructure** in the studied microzone pointed out the following aspects (table 3):

- 99.7 % of the total dwellings are in private ownership, 11.08 m<sup>2</sup> of habitable area is due to one inhabitant;

Table 3  
 Indicators on the actual infrastructure from the Țibănești Microzone, Iași County (2007)

Indicators	Țibăna	Țibănești	Tansa	Dagăța	Total microzone
<b>Dwellings</b>					
- actual dwellings	2013	2490	1345	1577	7425
-private property dwellings	2003	2489	1344	1568	7404
- public property dwellings	10	1	1	9	21
-total habitable area– m <sup>2</sup>	73880	88366	42318	52042	256606
- dwellings built in one year	7	8	1	7	23
- dwellings built from private funds	7	8	1	7	23
- water supply and sewage	2.8	7.4	-	1.9	12.1
<b>Mail and telecommunication</b>					
- mail offices	2	2	2	2	8
- fixed telephony subscriptions	202	257	418	71	948
- mobile telephony subscriptions	2231	2843	1011	875	6960
<b>Education</b>					
- Total education units, of which:	20	14	4	17	55
- kindergartens	9	7	2	8	26
- first degree and second degree schools	11	6	2	8	27
-high schools, vocational schools	-	1	-	1	2
<b>Culture and art</b>					
- total public libraries	1	2	1	1	5
- radio subscriptions	1818	1804	695	772	5089
- television subscriptions	1822	1917	695	875	5309
- cable subscriptions	1608	1826	516	613	4563
<b>Health</b>					
- beds in maternities–public sector	3	3	2	1	9
- doctors –public sector	4	4	2	3	13
- sanitary staff –public sector	4	4	3	4	15
- sanitary staff –private sector	1	2	1	1	5
- pharmacies –private sector	1	2	1	1	5

- The network of water supply and sewage is of 12.1 Km, only 327 households being connected to current water and sewage, while in Tansa Commune there is no network of water supply and sewage;
- One fixed telephone comes to 8 households and one mobile telephone, to 3 people;
- Education and culture are well represented, being found 26 kindergartens, 29 schools, 5 libraries; about 70% of the dwellings are subscribed to radio and TV and 61.5 % - to cable TV;
- 13 doctors and 20 people, trained in the sanitary field, make the health control, and medicines are distributed through five drugstores.

## CONCLUSIONS

**For the Țibănești microzone**, it is useful to initiate some development programs where the main objectives should be represented by removing the weak points and their transformation in opportunities.

- Compulsory environment protection by forbidding the deforestations in the area;
- The degradation improvement of meadows and natural hayfields found in the individual property;
- Applying measures of soil erosion control on the entire area;
- Increasing the degree of the social infrastructure (especially, in the Tansa Commune where sewage is not present);
- Setting up of private viable farms for the agriculture straightening, by using at maximum the whole natural and human potential from the investigated area;
- Promotion of investments in the main fields, which can use the existing labour excess and result in the increase of the population living level.

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