SOCIO-ECONOMIC ANALYSIS OF ANINA LOCALITY. PROPOSALS OF MEASURES FOR SUSTAINABLE DEVELOPMENT

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Abstract

This paper presents the main issues and priority measures of sustainable development of the Anina city, Caras-Severin County, starting from the analysis of its economical and social status. The analysis requires consideration of the natural heritage area development, including the tourism, utilities infrastructure, social services infrastructure, population and labor force and the level of the economic development.

In the absence of a sustainable development strategy based onto the putting into value of the natural and human local community resources which are likely to be disengaged from the economic life of the region. The priority measures presented are grouped into different strategic directions: transportation and public utilities infrastructure, business and tourism development, environmental infrastructure as well as social, cultural infrastructure and public administration.

Keywords: socio-economic analysis, sustainable development, development strategies

1. SOCIO- ECONOMIC ANALYSIS OF ANINA REGION

1.1. Brief history

After the second half of the eighteenth century the development of the industrial centers in the Banat county determined the Habsburg authorities to carry out massive colonization of the German population in the region, even founding new localities.

One of the new settlements was Anina, its first name were Steierer-Dorf, the first labor colony (1773) which consisted of 34 families from Austria. In 1790, Nikolaus Hammer Mathias found coal of excellent quality, and since then the city has witnessed an ascending development, therefore in 1846 Anina was transformed into a mining center. In 1889 here it was achieved the highest production of coal in the whole nineteenth century and the mine in Anina will reach the deepest depth in Europe. The exploitation continued uninterruptedly until 2006, when a grave accident happened, that killed 7 people, the mine has been permanently closed. In 1920, the company "Uzinele de Fier si Domeniile din Resita" was founded as the principal administrator of the mines, and since 1952 Anina acquired the status of city, the other colony forming its neighborhoods.

1.2. Physico-Geographical overview

Location. Geographical coordinates of the Anina locality are: 45 ° 2' 30" north latitude and 21 ° 53' 20" east longitude.

The town Anina, located in the central part of the Caras- Severin county, in Anina Mountains, in the Northern part of its administrative territory is neighboring:

- Towards South- West - with commune Ciclova Romana;
- Towards South – with commune Lapusnicu Mare;
- Towards East - with commune Bozovici;
- Towards North- West – with commune Ciudanovita;
- Towards North – with commune Carasova;
- Towards West – with the town Oravita;

Anina is located at the following distances toward the main border crossing points:

- 250 km towards the border crossing point Nadlac, Arad County (Hungary);
- 200 km towards the border crossing point Cenad, Timis Conty (Hungary);
- 85 km towards the border crossing point Moravita, Timis County (Serbia Republic);
- 60 km towards the border crossing point Naidas, Caras –Severin County (Serbia Republic);

Geomorphology. Anina is located in a huge valley bordered towards east and west by two strings...
of mountains - Anina Mountains, which represent the southern extension of the Western Carpathians, with heights between 693 meters (Celnic peak) and 945 meters (Talpa Zane). The two strings of mountains are separated by Anina river which springs from Drechsler valley and flows into the Caras river. Anina Mountains have geomorphological characteristic features, as a result of their geological composition and the predominant rock is limestone.

Soils. The soil types present on the range of the locality (year of mapping 1988) are presented in chart 1:

![Chart 1. Soil types](image)

The degree of land fragmentation reveals: small plots (<1 ha) 95.0% and average plots (1-7 ha) 5.0%.

Hydrology. The rivers which crosses Anina mountains are belonging to the Bârzava river basin, Caras and Nera river basin and the most important are:

- Anina river which springs from the Drechsler valley and flows into Caras river, with tributary Terezia river;
- Steierdorf river which springs from Vulpilor Valley and flows into the Minis river;
- Ponor river which springs from Tâlva Purcar, cross the limestone cave of Ponor and flows into Minis river;

On the Minis river is fitted out the accumulation Minis lake, also for the water supply of the locality, on Buhui river, longest underground river in the country (3217 m) was created lake Buhui. The rivers have carved in the limestone spectacular gorges, such as: Caras Gorge - 19 km, Nera Gorge - 18 km, Minis Gorge - 14 km, Gorge Gârliște - 9 km Buhuiului Gorge - 8 km.

Climate. The average annual temperature varies between 9°C - 10°C, the hottest month is August and the coldest month is February. The annual average quantity of precipitation is 1000-1200 mm, and snow takes about 80 days a year. The Geomorphology of the areas being as a protecting shield, the area is not affected by significant local winds, very rarely beat Cosava, reaching very high speeds, 50 m/sec.

Flora and fauna. The vegetation from Anina Mountains is dominated by deciduous forests as: oak, alder, flasks, linden, maple, hornbeam, elm and ash, and small areas are occupied by pine, beech, spruce, pine and larch. In the beech forests from the Beusnita area are found the most numerous Turkish hazel population in the country, and on the gorges walls and limestone steeps are meet wild lilac, sweetie, flowering ash, and rare plants of southern origin.

Fauna from the vast forests is shelter of numerous species of wild animals like: wolves, wild boars, Carpathian deer, bears, foxes, deer, rabbits, squirrels, lynx, badger, polecat, glass snake, viper, salamanders and others.

On bare slopes of limestone is found horned viper, and in mountain waters, trout and barbel (mreana de munte). Lives in caves species of small animals, even scorpion.

Natural Resources. One of the main natural riches of the Anina mountains, beside woods, stone and firebrick clay for construction, is the coal. Coal deposits are found at Lupac, Doman, Secu and Anina where is the most important reservoir, used for over 200 years. Another important riches are the forests which occupy 83% of the area (12,223.0 ha), which is currently one of the area development opportunities. Herbs, berries (blueberries, currants, etc.) and mushrooms are used.

Underground resources are: limestone, fireclay and coking coal.

Protected Natural Areas. Significant area of protected natural areas from Semenic National Park - Gorge Caras, the National Park Nera Gorge are located around the locality Anina and is an incomparable beauty sights and today is the main area development opportunity.

National Park Nera Gorge - Beusnita covers an area of 36,758.00 ha in the southern part of Anina mountains and includes Reserve Nera gorges Beusnita, the longest and wildest gorges in the country, 22 km. Devil's Lake is the largest karstic lake in the country (9 m deep and 25 m diameter), and Bey's Eye Lake (deep 3.5 m and 20 m diameter), with relatively constant temperature (7-8 degrees) in all seasons, is one of the most beautiful tourist spots in Banat, with Beusnita Falls. Flora and fauna with Mediterranean influences include endemic species of plants and animals and even unique: horned viper, Carpathian scorpion, Mediterranean lilac, the white eagle, red swallow, cliff swallow, bearded bunting, banat fireflies etc. Beside these reserves, longer fall under the protection of the law, all concretionary
forms from caves, some plants and animals (larch, yew, hazel Turkish, peony forest, thorn, lynx, bear).

An important tourist attraction is the Oravita-Anina railway, the oldest mountain railways in the country, with a length of 33.8 km, with a difference level of 338 m, 14 tunnels and 10 viaducts, known as the Semmering of Banat.

Administrative territory of the area of Anina city is 14.553 ha, shown in Table 1:

<table>
<thead>
<tr>
<th>Nr</th>
<th>Name index</th>
<th>U.M.</th>
<th>Anina</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Total area</td>
<td>km²</td>
<td>14.553</td>
</tr>
<tr>
<td>2.</td>
<td>Agricultural area</td>
<td>Ha</td>
<td>912</td>
</tr>
<tr>
<td>3.</td>
<td>Forests</td>
<td>Ha</td>
<td>12,223</td>
</tr>
<tr>
<td>4.</td>
<td>Lakes and ponds</td>
<td>Ha</td>
<td>40</td>
</tr>
<tr>
<td>5.</td>
<td>Other areas</td>
<td>Ha</td>
<td>1358</td>
</tr>
</tbody>
</table>

1.3. Infrastructure of the locality

Homestead. After the structure of ownership form, existing homes from the locality in 2009 are shown in Chart 2, respective Chart 3:

There is a railway station for passenger and freight and a normal railway network in the length of 34 km for passenger transporting and freight on the Oravita - Anina route.

Network utilities

Water supply. Anina city has a centralized water supply system, the main water source is Lake Buhui, completed by 7 springs. The distribution network with a length of 47 km is generally very old. Production capacities of the drinking water is of 1,450 cubic meters per day, total drinking water supplied to consumers is of 175,000 cubic meters per day, which the domestic consumers have 150,000 mc. Through the ISPA project being implemented in the county there are several objectives in progress: rehabilitation of water intake, establishing a water treatment plant in Buhui, establishing a 7.14 km water supply network, establishing of two new pumping stations, the rehabilitation of two water tanks (Buhui and Crucii hill). There is not a proper filtration installation and treatment for drinking water and it is a need to redimensioning and modernizing the whole network. The management of the network is assured by S.C. AQUACARAS S.A. Resita - workstation Anina.

The sewerage network has a length of 25 km, of which 6.7 km are unit channel and 18.3 km are household channels. There is not any wastewater treatment plant in Anina city, which is expected to be achieved by ISPA project being implemented, among other objectives like: extending the main sewerage network system with 2,163 km, extending the sewer network 11,12 km, the connection at the system with 453 new consumers. The rainwater is collected through the street channels and unit canals that flows into rivers from the area.

Waste management requires the current landfill closing and implementing of a new integrated waste management. There is a local operator in the field, SC GOSTRANS SRL Anina.

Public lighting is achieved by low voltage LEA mounted on concrete pillars of the low voltage
network. Festive lighting is made from own funds, and for architectural lighting of some community objectives are still needed funds.

Electricity network is coupled to the national power grid via transformer substation 110 / 6 KV. Anina, equipped with two 25 MVA transformers. Average supply with power of large consumers is by LEA and LES of 6 KV, and average distribution of the voltages at the 6 KV voltage through LEA of 6 KV. There are 32 transformation stations, of which 15 are overhead and 17 in built cabin. The degree of connection of the population is 98.5% of households.

Wood is the main source of heating of the homes in the area.

There are no gas supply network, being in study a project for Anina, Oravita, Sasca Montana, Moldova Noua.

Communications network is well developed, for fixed telephony there is a central digital telephone line ALCATEL type with 2000 posts located in Post building (about 2000 subscribers) and well developed system of mobile networks with full coverage for Orange, Vodafone and Cosmote.

1.4. Population. Workforce

Population. After 1991, we noticed a pronounced decrease in population, due primarily to the departure from the city of the mining work as a result of restraints (after 1998) and the mining closure, the migration of the German population to Austria and Germany and the lower birth rates. On the 1-st of July 2009 the resident population was 8846 persons, of which 4438 women and 4408 men. Number of people who took up residence in the locality was 106, and number of departure from the locality was of 211. Anina is included among the few cities in Romania with a positive natural increase (+ 5 in 2005).

The ethnic structure, according to 2002 census is: 87.2% Romanian, 8.3% German, 2.2% Hungarian, 0.9% Gypsy, 0.2% Serbs and 1.2% other nationalities, and are presented in Chart 4:

After religion, population structure is as follows: 74.5% Orthodox, 13.7% Roman - Catholic, 6.1% Pentecostal, 3% Baptist, 2.7% Greek Catholic, 0.5% other religions and are presented in Chart 5:

Analysis of population on age (2006) show that the population in age group 15-64 years, group considered active, has the greatest concentration of population 71.1% above the county average (70.4%).

Also, population under 14 years 18.7%, is located above the county average (14.8%).

Population structure by educational level, according to data from population and housing census - March 2002 is presented in Table 2:

The analysis of the population evolution, reveals a generalized decline due to the restructuring of the mining activity since 1998, to the lack of alternative activities and the downward trend manifested at national level. It also found a massive decrease in the number of ethnic Germans because of their return.
back home. Lack of jobs has led to a strong migration of working-age population to other cities in the region or other EU countries, in particular young people.

**Workforce.** Redundancies that have occurred since 1998 have led to the disappearance of many jobs, both in mining sector and related activities, over 1400. Establishment of alternative economic activities, to take redundancies workforce has been slow. Labor qualifications from the city correspond generally mining activities and related activities, there are also a significant numbers of qualified personnel in woodworking and recently in knitwear domain and clothing domain (by retraining courses). Unemployment rate according to statistical records is 10.2%, but the actual rate of unemployment is about 30% (many people disappeared from the evidence of Office for Employment).

The employment structure is shown in Table 3.

<table>
<thead>
<tr>
<th>Fields of activity</th>
<th>Number of persons</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total average number of employees</td>
<td>1313</td>
<td>100</td>
</tr>
<tr>
<td>Total average number in agriculture</td>
<td>1</td>
<td>0,1</td>
</tr>
<tr>
<td>Total average number from industry, which</td>
<td>481</td>
<td>36,6</td>
</tr>
<tr>
<td>Mining industry</td>
<td>231</td>
<td>17,6</td>
</tr>
<tr>
<td>Manufacturing industry</td>
<td>221</td>
<td>16,8</td>
</tr>
<tr>
<td>Electricity, gas and water industry</td>
<td>29</td>
<td>2,2</td>
</tr>
<tr>
<td>Construction</td>
<td>219</td>
<td>16,7</td>
</tr>
<tr>
<td>Trade</td>
<td>45</td>
<td>3,4</td>
</tr>
<tr>
<td>Transport and mail</td>
<td>60</td>
<td>4,6</td>
</tr>
<tr>
<td>Financial, banking and insurance activities</td>
<td>2</td>
<td>0,2</td>
</tr>
<tr>
<td>Real estate transactions</td>
<td>2</td>
<td>0,2</td>
</tr>
<tr>
<td>Public Administration</td>
<td>98</td>
<td>7,5</td>
</tr>
<tr>
<td>Education</td>
<td>161</td>
<td>12,3</td>
</tr>
<tr>
<td>Health and social care</td>
<td>95</td>
<td>7,2</td>
</tr>
</tbody>
</table>

*Source: County direction Statistics of Caras – Severin*

The working population has recorded declines in all fields, the most significant of the reductions were recorded in mining, exceptions were recorded in some of services like: trade, education, health, social care and public administration). Under these conditions, about 254 people are receiving the guaranteed minimum income (Law 416/2001), and an estimated 160 people are employed according to art. 77-79 of Law 76/2002 in community service activities.

1.5. Economy

The economy of the area is based on the main sectors such as: wood processing, construction materials, food industry - bakery, textiles, freight and passenger transport, trade. The Anina Business Center has been in the recent years the pole of local economic development, began operations in May 2004, the investment is financed by the Program of Business Centres Management and Support for entrepreneurs conducted by the National Agency for the Mining areas Development of funds from World Bank. The Bussines Center (2378.19 m² useful area) includes spaces designed to achieve European standards for activities of production, services, commerce and offices, offering facilities of incubated companies: infrastructure, telecommunications and consulting services. At 4/30/2007, the Business Centre had an occupancy rate of 77%, approx. 10 Incubated companies (some companies are working points for renowned companies in the county) in the fields of: construction industry, textile, food, services, etc..

Wood processing industry is a tradition, the area offers great opportunities, because vast areas occupied by forests. After mines closure, the activity of economic agents (more than 20 companies from a total of approx. 130) is generally focused on primary processing of wood. It is necessary to develop secondary processing to obtain high value added products.

**Agriculture** takes place in an individual system, of subsistence, on relatively limited area, 22 hectares of arable land, located in clearings around the village, which is grown vegetables, needed for their own consumption, particularly potatoes. Livestock (sheep, pigs, cattle, bees, etc.) can become an opportunity for the area, having regard to the grazing area (466 ha) and grassland (424 ha). Currently is practiced individually in local households due to lack of constant market outlets and low prices.

The construction sector is relatively weak developed, approx. 5 companies with 5-20 employees.

Services were developed once with the advent of Business Centre of Anina, especially those who disappeared of the local market: hairdresser, restaurants, car repair, car wash and carpet, shoe repair, etc..

**Trade** activity includes over 60 companies.

Although **tourism** is the main opportunity of the area is relatively weak developed due to poor condition of basic infrastructure equipment, namely the housing units and of recreation, like infrastructure of utilities. There is a hostel with a total of 10 beds, where there were 291 arrivals in the year 2009, with a total of 460 overnights. Currently, is practiced tourism on the weekends, mountain, of adventure, enduro tourism, hunting and fishing. Given to the significant tourism potential (protected natural areas, numerous sights, some unique in the country and Europe, rare
species of flora and fauna etc.), economic growth in the region, therefore the demand for services, we can say that the tourism is a viable alternative to industrial restructuring of the city. The range of all types of tourism covers almost all types, besides those practiced may be mentioned: industrial tourism, cultural, speoturism, agrotourism, silvotourism.

1.6. Education, culture, health, administration

Education. At the city level there are a kindergarten, a primary school and secondary school and an industrial group with primary education, secondary school and school arts and crafts. The school infrastructure has 54 classrooms and school offices, 5 laboratories, six workshops, three gyms, 88 PCs. Total number of students from 1 July 2009 was 1,400, of which 827 in primary and secondary schools, 518 in high schools education and 55 in arts schools and crafts, the total number of teachers,119, of which 60 in primary and 48 in high school education.

Health. Health infrastructure includes: a hospital (55 beds), an outpatient hospital, three dental clinics (two private and one public in sector), two pharmacies (one private and one in public sector), three private family medical cabinets, four medical cabinets private specialist and two medical laboratories. Medical assistance is provided by 11 doctors, three dentists, two pharmacists and 41 middle staff.

Culture. There are five libraries, from which one is public, the Culture House from Anina, built in 1920, the main cultural core of the city.

Social Services. In the city operates two centers for children, created by external funding projects (PHARE, FRDS) that provide social assistance to underprivileged children and those with major learning difficulties.

2. STRATEGIC DIRECTIONS. PROPOSALS FOR MEASURES FOR THE SUSTAINABLE DEVELOPMENT OF LOCALITY

Starting from the socio-economic analysis of the present, to avoid releasing the area of the region's economy and its revival is necessary to elaborate a sustainable strategy for the locality based on priority targets.

Needs and problems identified being numerous, for solving their have been set priority measures, grouped by strategic axis of development, prioritized according to importance. To implement these projects-measures will be determined necessary funds and financing sources.

So far in 2007 has developed a Local Development Strategy through a Strateg West project, the only document medium-term strategic planning of the locality (2007-2013) which contains the main development objectives of priority axes.

The main drawback is the lack of prioritization of measures, establish the necessary funds for each measure-project, sources of financing, the timing of their achievement and an action plan. For realization of all projects set, it is necessary involving all local actors, and local authorities to allocate the necessary funds (either for total completes or for co-financing European projects).

The major problem identified is the local budget which is a risk factor for the implementation of projects-measures.

From the analysis of current status, including from SWOT analysis of the locality have been identified needs, transformed into targets and subsequently to be prioritized and set the necessary funds and financing sources.

Proposals of measures identified for the sustainable development of the area in the medium term are:

2.1. Development and rehabilitation of transport infrastructure and public utilities

- Rehabilitation/modernization of local transportation infrastructure: modernization of bypassing variant of the center, modernization of city streets, sidewalks and alleys etc;
- Modernization of roads connecting with all villages / neighborhoods: road link between Steierdorf and Marilia, road access to neighborhoods Bradet Tereziei Valley, Uteriş and to Stadium;
- Establishment / upgrading access roads to tourist objectives: Lake Marghitas, Marilia, Bradet, Maial plateau, etc.
- Rehabilitation and extension of domestic sewerage, achieve of wastewater treatment plant at Steierdorf and Anina; restoration, unclogging, or the realization of rain drainage;
- Providing access to good quality drinking water to all inhabitants: rehabilitation and extension of water distribution network and rehabilitation and expansion of processing capacity of water treatment plant;
- Introduction of new lighting corps and architectural lighting;
- The introduction of centralized heating systems in schools, churches, house of culture;
- Modernisation of railway station headquarters.

2.2. The development of business and tourism environment.
The development of business environment through the regional level promotion opportunities can be achieved through wood processing, forestry, building materials, livestock, herbs and berries, lands (14 hectares) and facilities provided to investors by the closure of the mining activities, provision of facilities investors, etc.

The development of business infrastructure: banks, insurance companies etc.

Human resource development: stimulating unfolding of courses / retraining, adapting of qualifications offered by the education system at the current and future market requirements (including tourism), etc;

The tourism development: promotion of tourism opportunities and all types of tourism that can be practiced, their integration into the national tourism circuit, setting up infoturistic offices in Anina, the development of business in tourism domain, development of program packages for tourism etc.

Establishing of a more emphasized promoting of a touristic interest objectives within the town and the surroundings using the television, fliers distributed free on different special occasions and columns on internet sites;

Accomplishment and editing of a touristic guide of Anina and of the surroundings containing a short history, as well as the interest objectives for tourists, natural and industrial attraction or belonging to the local patrimony;

The rehabilitation/ planning, including signaling of sights, planning of former industrial sites for tourist purposes, the establishment of a Museum of Mining, planning of slopes for winter sports, etc..

2.3. Development of environmental infrastructure

Establish a modern system of waste management, compliance in the collection activity and disposal of waste from the provisions of Chapter 22 of the Environmental Law, including the introduction of the selective collection system, increasing of the insurance rate to population with management services of waste, reducing quantities for final landfilled waste, increasing the rate of awareness of population on environmental protection and health;

Reduction of water pollution, air pollution and soil pollution. Reducing intra-urban pollution by eliminating septic tanks as a result of connection to a sewerage system.

Restructuring and closing of the present waste dump and the reorientation towards the ecological location settled at regional level, according to the directives of the European Union, extension and rehabilitation of the waste’s collecting system in town by aligning to the integrated administration system of the waste;

Environmental Conservation: completion of greening the areas affected by oil shale exploitation and greening areas occupied with Shaft Mine IV, Unterisch mine, Covaci mine; concrete measures to conserve natural areas and protected plant species; the study of possible risk areas for landslides (area Celnic), establishing measures for the consolidation; measures to mitigate of floods during rainy seasons; afforestation measures, particularly in areas at risk of landslide;

2.4. Socio-cultural infrastructure development and modernization of public administration

The rehabilitation of the health sector infrastructure, proper equipment, foundation of nursing homes for people with mental or respiratory illnesses in Sommerfriche area;

The rehabilitation and modernization of the House of Culture;

The restoration of heritage buildings from the historic city;

The development of social care services;

The revamping and modernization of the Center of emergency situation;

Intensification of the funds attraction activity, by increasing the training standard of civil servants, the partnerships formation (in public private, ONG- administration, etc.), stimulating the creation of ONGs, development of cross-border partnerships;

Distribution the local budget according to priorities (projects) set in sustainable development strategy of the locality, as implementation schedule to be fixed.

3. CONCLUSIONS

Romanian communities face, now more than ever, a period of profound transformation.

The extensive process of restructuring of economy and efficiency, which included and mining sector, at wich the economy of Anina town was firmly rooted, had as immediate effects: higher unemployment, declining living standards, lower income to local budgets, migration of a significant part of the population, including
active population, especially youth, to other areas in the region, country or abroad, etc.

In these circumstances, developing a strategy for sustainable development of the city, based on the exploitation of natural and human resources is imperative, because in its absence the local community is likely to be disengaged from the economic life of the region.

The term of sustainable rural development includes all activities aimed to improve quality of life of rural population, to preserve natural and cultural landscape and which assure the sustainable development of rural, according to local conditions and specifics. Sustainable development has many aspects: sustainable development on an economic level, on an ecologic level and on a social level.

The need to elaborate a sustainable strategy starts the fact that for reduce regional development disparities, one of the objectives of regional development, Anina is an example of such disparity in Caras-Severin county and the West Region, Romania benefits a number of tools funding from the European Union.

On the basis of analysis the current socio-economic status of the area, the potential development and opportunities for development for solving the area's many needs and problems have been fixed priority measures, grouped by strategic axis of development, prioritized according to importance. The measures have been grouped on strategic directions, so: transport infrastructure and public utilities, development of business environment and tourism, environmental infrastructure, socio-cultural infrastructure and public administration, in the next stage will establish the necessary founds and financing sources.

In this context, sustainable development is possible in Anina by exploiting the natural heritage, like: large areas of protected areas, unique tourist attractions in the country and Europe, cultural traditions, etc., through the medium-term implementation of sets of measures - projects, according to a schedule established, while identifying necessary funding sources. Sustainable strategy assumed by the local authority makes it possible to allocate the funds needed to implement the measures-projects established for co-funded from European founds, either for their full realization.

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