THE IMPACT OF SALT EXPLOITATION OVER OCNELE MARI DWELLING, VÂLCEA DEPARTAMENT

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Abstract. Setting near natural resources was a criterion, which took account of the man several times. Large mines settlement development was closely related to salt mining since Dacian times, salt was the resource that has boosted its development stage to present the city. Increased population increased salt consumption, not only the food, but also industry. To meet the new needs they started to use techniques that are easier operation and greater quantity to be exploited in a short time to meet industrial consumption. Thus, the prime interest for a high and quick profit at the expense of nature, a means commonly used now, when desire rapid enrichment, environmental protection reasoning umbrește improper exploitation of salt deposits led to disaster effect on both the morphological component and of the human. Operating phase of the salt and its effects, we analyze in this study and in the end we propose development strategies by harnessing the potential settlement closely with neighboring areas.

Rezumat. Impactul exploatarilor de sare asupra locuințelor din Ocnele Mari (Vâlcea). Stabilirea în apropierea resurselor naturale a constituit un criteriu, de care omul a ținut cont de cele mai multe ori. Dezvoltarea aşezării Ocnele Mari a fost strâns legată de exploatarea sării incă din vremea dacilor, sarea fiind resursa care a amplificat evoluția acesteia până la stadiu actual, cel de oraș. Creșterea numărului populației a determinat creșterea consumului de sare, nu doar cel alimentar, dar și cel industrial. Pentru satisfacerea acestei noi nevoi s-a trecut la folosirea de tehnici prin care exploatarea să fie mai facilă, iar cantitatea exploatații să fie mai mare, într-un timp scurt, pentru a satisface cerințele consumului industrial. Astfel, a primat interesul pentru un profit ridicat și rapid, în detrimentul naturii, modalitate des folosită și în prezent, atunci când dorința de îmbogățire rapidă, umbrește raționamentul protejării mediului. Exploatarea necorespunzătoare a depozitelor de sare a condus la dezastru cu efect atât asupra componentei morfologice cât și a celei umane. Etaple de exploatare a sării precum și efectele produse, le vom analiza în acest studiu, iar la final vom propune strategii de dezvoltare, prin valorificarea potențialului așezării în strănsă legătură cu arealele învecinate.

Key words: salt exploitation, Ocnele Mari, dysfunction, development strategy
Cuvinte cheie: exploatarea sârții, Ocnele Mari, disfuncții, strategii de dezvoltare

1. THE FRAMING OF THE STUDIED AREA

The Ocnele Mari City is situated in the Getic Subcarpathians, in the Topologului Valley and Bistrița Valley (from Vâlcea County) sector, known as the Vâlcea Subcarpathians, 7 km north-west from Rm. Vâlcea
The oldness in time of this city has been showed by the archeological discoveries that revealed the vestiges of the Buridava fortress, an old dacic fortress.

Because of the exploitation and commercialization of salt, this settlement received the appellation of fair, the first historical attestation dating from 1402, when Mircea the Old called it a fair into a document that was saying that a part of the obtained income from the salt trade should come to the Cozia Monastery. But there are no documentary data about the salt exploitation till 1247, when in the Ioanîti Diploma it is given the right for salt trade to the Teuton Knights.

In the XVIIth century has been opened the first mine (ocna) at Carpinis. After this opening, the settlement received numerous names through time, relieving the main character of the settlement: “Ocne”, “Târgul de la Ocne”, “Ocna de la Râmnic”, “Vel Ocna” and Ocnele Mari.

For better underline the setting up and the development of this trade, and the ways the salt was exploited through time, we will present the stages it has passed through.

2. RELIEF GENERAL CHARACTERISTICS AND THE PRESENT MORFODYNAMIC

The lithological complications appear in the Ocnele Mari sector because of the appearance of diapir folds, the salt massif reaching the surface through the Ocnele Mari - Ocnita anticline.

The geomorphological processes that appeared later were a result of the geological constitution of this sector oligocene clays with upper layers of diorite sands, grit stones and sands.

Salt sits in the diorite sand facies of the salt sector, being covered with sandy diorite or low cemented sands.

There are presenced two salt layers with different oldness: the older burdigalian/helvetic layer and the younger layer with ineralations of dacic tuff, limestone and tortonian fossilised grid stones.

The salt appears in a 7 km long massif, with a maximum development in Ocnele Mari - Ocnita region, where the thickness reaches 600 m.

At west Ocnita, this deposit splits in two parts: one goes north-west to the Tieuş Valley, and the other one goes south-west till it reaches Govora. The deposit contains both pure salt and earthly salt.

The town is settled into a small depression that’s an anticline weald, made by the Pârâul Sărat River through aggressive penetration and affecting the anticline ax at the maximum heights of the subcarpathian range.

The relief shows monocline structures-cuestas, especially in the northern part where it reaches the mountains.

Nowadays, at Ocnele Mari the geomorphological processes have a high dynamic (fig.1), determined by the long salt exploitation, with frequent collapses, slidings, highly affecting the slopes from the entire Pârâul Sărat basin. The collapses have a central place (the collapse of some galleries and halls ceiling from former mines).

Other phenomenon that appear in this territory are the modification lakes bed contour after the collapse of ceilings, the compaction in the course of the galleries and the appearance of cracks in the lakes neighborhood.
Over the slopes of the massifs composed of salt layers, the water has created some halls reflected at the surface through dolinas. Through this denudational process have been created other relief forms: pipping funnels and horns.

![Fig.1- The slope affected by sliding](image)

The growth of these processes in the last years is caused by the utilization of dissolution extracting method, which has begun in 1959, together with the opening of the chemical platform from Govora, which required large quantities of brine.

These were the elements that indicated the appearance of another phenomenon: different measure cracks in the soil bed at the land surface and into the houses walls.

Also, in this area appeared some earthquake epicenters from earthquakes of 4-6° on the Richter Scale, beyond a depth of 10m, which enhances the phenomenon.

![Fig.2- Abandoned houses after the inhabitants delocation](image)

3. THE STAGES OF SALT EXPLOATATION AT OCNELE MARI
The Ocnele Mari salt has been exploited since the dacite times, at the surface and used only as food. The way to extract fine salt was as „bricheta”, in other words through salt boil in soil pots till complete evaporation and till the pots were broken, the left salt becoming a „bricheta”.

From the XVIIth century begun the salt exploitation through mines, the first opened mine being at Carpiniș, with a highly increased production.

Another stage is connected with the exploitation of the curative qualities of salt waters, from the beginning of the XIXth century through spa resorts.

The exploitation of curative qualities continued till present, having its ups and downs considering the number of tourists it has received through time.

Another way to extract the salt - through dissolution - begun with the opening of 4 derrick camps from 1959, together with the establishment of two big industrial consumers: Govora Natrium Factory and Olchim Chimical Combinat.

In 1992 begun the opening of the Cocoști mine, and it was inaugurated in 1998, extracting only common salt.

4. DYSFUNCTIONS GENERATED BY THE UNCONTROLLED SALT EXPLOITATION

A dysfunction is the modification of the settlement hearth contour after a big slope collapse, through the displacement of a whole village, Tâica.

Another dysfunction is the destruction of a great part of the settlement’s infrastructure: the road that connects Ocnele Mari with the other settlements, the water pipe, electric network etc.

The surface and undersurface waters pollution with brine and oils used in the tightenment of cavern ceiling. Paraul Sarat River is polluted with brine from the soil when the retention lake cannot hold on anymore.

Ocnita lakes, formed over an old mine, are polluted through the discharge of brine and oil from the caverns, which are no longer needed in the industrial process. In this way the organoleptic qualities of the waters change.

The decrees of population number of this town through the displacement process into a near settlement and the negative psychological impact on the population direct hit, through the loss of their goods, or indirect, through the fear of a new process.

The landscape value of the decreased because of the abandoned houses around the affected slope.

The reduction of the town’s touristic potential because of the appearance of insecurity, excepting the curious ones and the researchers, where the curiosity and discovery takes the place of insecurity.

5. PROTECTION MEASURES IN THE OCNELE MARI CITY
To avoid town’s flooding with brine, there has been constructed a protection dam at the base of the crater, with an artificial lake in its back. The lake brine is drained and transported through seleoducts to the industrial consummators.

There have been made regularization works in the Pârâul Sărat Valley to prevent the reflooding of the area from the neighborhood, if there is to be another overflow from the retention lake.

Another measure includes the controlled falling of the caverns ceiling through injections with freshwater in some specific points.

The inhabitants relocation from the risk areas has been made by giving new houses or money.

Talking of giving houses, it was chosen the Copâcelu village, part of the Rm. Vâlcea town, 3 km from the risk area. This village belonged to Ocnele Mari territory till 1956, together with two other villages: Răureni and Stolniceni, after that becoming a part of the Rm. Vâlcea administrative territory. This way has been marked some some special surfaces in Copâcelu for the buildings construction.

There have been assigned some government fonds, and the citizens had to choose between to things: buildings constructed by the Government or some money.

In the repartion of houses mattered the old house room’s number.

This houses have all that is needed for a normal living, including cold water, hot water, heat, sewerage, phone, cable network and propane.

The physionomy of these houses resembles with the western ones, but has some traditional elements.

Into this dwellings appears the next components:
- The house
- Dependencies: stable, hen hoop, pantry
- Gardens: for flowers and vegetables

Each house has a sertain number of rooms for dwelling, halls, bathroom, kitchen, pantry and a room for the thermic station.

CONCLUSIONS AND DEVELOPMENT STRATEGIES

In this study we have underlined the positive and negative effects of salt exploitation over the hole Ocnele Mari dwelling.

We observed the existence of some stages that contributed to the city’s evolution and development through the help of the salt resource.

In this way this town has become well known, has slowly developed, but also has gained the title of town.

Also through the salt exploitation has interfered directly with the normal state of the slopes, which determined the start of some morphological processes (falls, slidings), with negative impacts over the settlement delocations, the decrease of its touristic importance through the fear created by these phenomenon, the demographic decline etc.

The going on with the same controlled collapse of the caverns ceiling and the maintaining of brine discharge control are main objectives that must be realized in the best ways, to avoid other disasters.

The risk area must be assured through massive labor to protect the downstream settlements if a disaster is imminent. The damages can take great proportions: great
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collapses, brine flows that can flood the downstream settlements for an over 20 km distance.

Development strategies:
- The dispose of some accommodation and treatment base for the hole year, not only for the warm season, rendering the curative qualities of salt waters;
- The achievement of modern leisure spaces: sport fields and halls, parks;
- The rearrangement of existent holiday villages;
- The cleaning and the introduction of the Ociuța lakes into the touristic circuit;
- The protection, promotion and valorification of historical, cultural and religious attractions;
- The opening of new restaurants and food service points
- The promovation through all the mass-media and internet ways.

Making this work can be done successfully by applying the post-adherence funds allocated by the European Union, for a wide palette of areas. But here is a hindrance, in that the settlement was placed in the areas with high risk morphological and a criterion for obtaining European funds is the location of the project to be not integrated in such an area. This criterion block of possible actions of private entrepreneurs, but these publics (municipalities) may apply especially for environmental projects (in our case), and beyond.

With all these being said we end this study remembering once and for all that us, the people, have a great impact over the environment, even if we are only a day in the Earth’s life: “flies for a day into a small world which can be measured with a jab”, and we forget that “this whole world is a suspended moment, / that before and after it only darkness shows.” (Mihai Eminescu – Letter I)

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