Perception of the Industrial Areas Conversion in Romanian Cities- Indicator of Human Settlements Sustainability

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1. Introduction

Industry is an economy branch with various valences in the current society. It is on one hand, polarizing territorial resources, sustaining on short and long term the welfare and different economical systems and on the other hand, it is generating socio-economic and environmental malfunctions (Iojă 2008).

The dual perspective makes the acceptance of industrial activities to be different at the world states level, depending on each system's ability to accept, withhold and solve the issues caused by the industry. (Saghin, Gavrilidis& Iojă 2011). Under the pressures triggered by these actions, the industry managed to maintain and even enforce its importance in some spaces, although the reduction process or even the shutdown is the dominant one. (Fig.1).

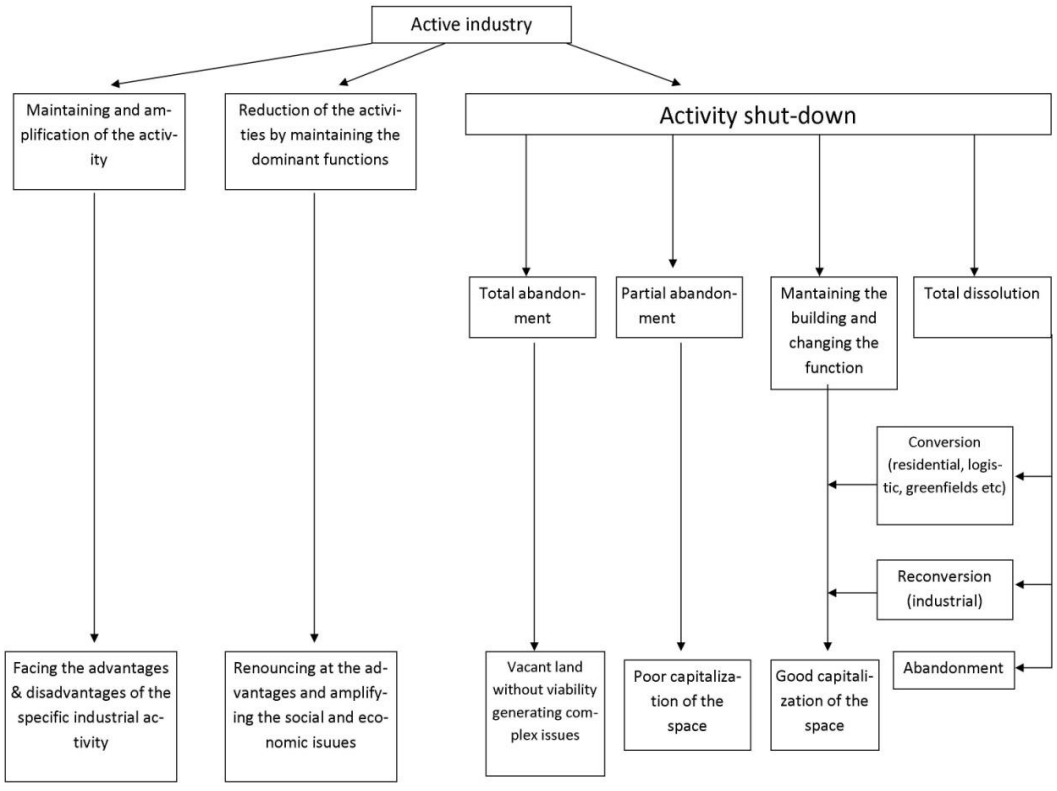

Figure 1: Potential evolutions of the industrial activities

Within this context, the industry conversion and reconversion represents a natural evolution in many countries with unstable or highly dynamic economy (Henderson and Thisse 2004), the raised issues being connected with :

- Decrease in terms of productivity of the industrial activities determined by various causes (poor management, competition etc.) (Ianoş 2004),
- Exhaustion of local resources (energy resources, raw materials, more expansive labour, infrastructure degradation) and the emergence of new ones (Lutzenhisier and Gossard 1998),
- Territorial dynamics as a result of which the industrial spaces get to have an inappropriate location regarding different urban functions that are more sensitive (Powe and Willis 1998),
- Pressure of the civil society or of the national, regional and local administration dissatisfied with multiple disorders (Verhoef and Nijkamp 2002),
- The need for space in order to achieve other urban function categories(Antrop 2004).

In various situations, the conversion and reconversion of the industrial activities were made in an unplanned way, which allowed many of the problems that were inherited from the industrial phase to be transferred also to the new features. Hereby, the physical , chemical and biological contamination of the substrate (Assante-Duah 2002), the social tensions (Beinat and van Drunen 1998), poverty (Appleton, Song and Xia 2010), the financial deficit resulting from the loss of productive activities (Ceccato and Lukyte 2011) are among the most important challenges that must be solved by the conversion and reconversion processes. (Table 1)

Table 1: Advantages and disadvantages characteristic to the industrial and post-industrial period

Active industry	
Advantages	***Disadvantages***
Resources polarization	***High consumption of resources and energy***
Consumption growth	***Environmental degradation***
Life quality improvement	***Activity dependence***
High level labour employment	***Urbanization***
Increasing the attractiveness	***Unprofitable models***
Post-industrial	
Advantages	***Disadvantages***
Rebalancing the space by adapting to the territorial potential	***Insecurity***
Functional reconversion opportunities offered by the industrial platforms	***Depopulation***
Easy access to multiple infrastructures Improving environmental quality and therefore the quality of life	***Management of the complicated environmental issues, especially contaminated sites***
	Significant costs for labour reconversion and health rehabilitation
	Social tensions

The perception of the local administration and of the population towards this process is a key element, in the context in which they are the beneficiaries of the future urban inserts, whether these are public utilities (green spaces, commercial spaces, built heritage

objectives) or have limited use for certain groups of users (individual or collective residential, business parks, industrial parks)(ONU 1992).

2. Industrial activities evolution in the former communist countries

After the fall of the communism, the transition to a capitalist economy meant developing services and the regression of the industrial activities (Andrusz, Harloe and Szelenyi 1996). Thus, the cities went through a long process of deindustrialization and industrial restructuring which usually occurred through two other processes: decentralization and industrial relocation (Cepoiu 2009).

Deindustrialization, under the effect of restructuring, has been a natural phenomenon, as a consequence of the displacement in terms of consumers' demand ratio from industrial goods to services. It didn't involve a total abolishment of the industry or its removal from the economic structure of the cities, but it tried to locate it between optimal limits.

In the same time, industrial restructuring aimed at creating a viable industrial environment, undistorted, based on competition and on a stable legal framework, simple and coherent, in order to ensure sustainable economic growth conditions (Cepoiu, 2009).

Industrial decentralization is typical for balanced economies and it introduces in the receiving spaces a number of linked advantages in order to develop the territories: for example, unemployment reduction leaves room for the increase of the active population employment in a wide range of activities. It leads in this way on the development and the socio-economic gradual revitalization of the region in which the phenomenon occurs.

The relocation of the industrial enterprises is an industrial process increasingly met in the former communist countries, especially after 2000. It occurs under the influence of the reflected globalization effects on production (translated, for example, by the increasing competition, the attempt to better satisfy the demand/supply ratio, the need for accessibility, the need to develop sustainable development strategies). The objectives of this process relate to the new production facilities in the areas where the demand registers the fastest growing and to the optimization of the financial situation by a production units 'specialization taking into account the advantages offered by some relocations.

The processes described above may apply to all states in the Central and Eastern European Region, especially for the former communist countries, with slight temporal lags from Russia and Soviet Republics.

2.1 Bulgaria

In Bulgaria, after the change of the communist regime, the policy makers have also chosen a pragmatic approach for the industry. All small enterprises were privatized and most of them have been taken by businessmen and small Bulgarian entrepreneurs. The units considered to be unproductive and unable to adapt to the new economic requirements have been closed since the early 1990s. A priority for the Bulgarian Government was the revitalization of the big industrial platforms and the trial to align them to the new economic conditions. Thus, the metallurgical platform Kremikovtzi has been privatized in 2011, a part of its departments have been closed and the remainders became more efficient form an economic point of view. Aurubis copper smelter was acquired by Aurubis AG Hamburg that has invested in it 44, 2 million Euros for refurbishment in 2011; Kardzhali zinc processing platform has been temporarily closed as an initiative of the Bulgarian Environmental Ministry for refurbishments, but for the moment there are no investors willing to finance this process; the network of cigars producers, Bulgar Tabbaco was taken in 2011 by the Russian state-owned bank VTB. At present, many production sections have been taken over by various international companies that produce cigars.

The machinery industry in Bulgaria is currently experiencing a crisis due to massive layoffs (29 000 people in the last 3 years), but all the industrial platforms in the sector are privatized. The cars industry is growing (it faces a profit growth every year) and it has been taken by the Chinese company Great Wall Motors. The pharmaceutical industry is mainly owned by the Indian company Elder Pharmaceutical and has exports in all the countries in the Balkan Peninsula and in Asia. In the future, the Sofia Government takes into account the possibility of opening new industrial platforms. The largest will be located next to the Bulgarian capital and having some Chinese companies as a financial support.

2.2 Serbia

After the collapse of the Republic of Yugoslavia, the Serbian economy had a lot to suffer. Most of the industrial platforms in the former Yugoslavia were connected between them and now they are in different states having serious issues in terms of raw materials and finished products exchanges. After the events that took place at the end of the XXth century, Serbia tried to keep its industries viable and productive. Mainly, it was a successful project. It concentrated on the energy industry benefiting by water power stations (on the Danube, on the rivers Drina, Vlasina and Lim) and by a series of electric power stations (Obrenovac, Kostolac si Obilic). Also, most of the industries from other domains have been preserved, being really important for the Serbian economy (mining, machinery, cars, petrochemical and pharmaceutical). Most of the raw materials necessary for these industries are imported. In the context of integrating Serbia in the European Union, the Belgrade Government has to privatise most of the industrial platforms, to restructure them and to refurbish them in order to satisfy the EU environmental policies. Most of the platforms have been keeping their activity profiles, except some industrial platforms that have been affected by the war (those next to Belgrade).

2.3 Hungary

Traditionally, the Hungarian industry has been oriented to the steel production domain, to the manufacture of buses, diesel engines, electronics and electrical components, to the pharmaceutical industry, medical and precision equipments, chemical and petrochemical industry. In 1923, the Hungarian industrial production represented 2/3 from that existing in 1985 and in 1997, they registered increases in the cars manufacturing sector, electronics and home appliances, cables, office equipments and computers, steel and aluminium products, metallurgy, cosmetics and household products, rubber and plastic, paper and derivatives. In 1992 Suzuki and Opel opened production units in Hungary. After 1990, the Hungarian profile switched to cars industry, plastics, electronics and home appliances.

The situation in Hungary is similar to the situation in Romania regarding the abandoned industrial buildings. They are not numerous and those that were not profitable anymore have been oriented towards commercial activities.

2.4 Poland

In Poland, a conversion example is that form the coal mine in Katowice-Kleofas that had a surface of over 30 ha. The mine was closed in 2001 after various years of programmed decline (since 1996). Because it was placed in the centre of Katowice, it became a commercial centre in the area where there was a direct contact with the main city's streets. It has been built by a Hungarian society and it opened in 2005. In terms of decontamination, over 1 million mc of polluted soil was treated. The commercial centre preserves some elements from the ancient mine even if the project needed an almost total destruction of what it was before and that because the recovery of the old buildings would have been too difficult and the landscape elements were too specific to the initial activity.

2.5 The Republic of Moldova

In the Republic of Moldova most of the enterprises are still functioning. The industry is concentrated especially on the processing of raw materials coming from the agricultural field, but also on chemical, wood processing or light industry. In terms of heavy industry, it is situated in Transnistria, mainly because it is raw material dependent.

The Republic of Moldova offers a counter-example in comparison with the other countries presented before. In spite of the production volume or the number of industry employees decreases, the industrial activities continue to exist even if their activity is mainly inexistent. Another issue is linked to the factories that have been shutdown once transferred in the Moldavian state property. There are only a few of them, but they are encountered in almost every „rayon" of the country. Their main function was the production of sugar, wine, cans or bread and now there are only extended spaces, with abandoned buildings and no possibility of conversion- they are called "industrial cemeteries" (e.g. Cans Factory in Nisiporeni).

2.6 Russia

For Russia, the situation of industrial conversion or reconversion becomes totally different in comparison with other countries and that is because the issue raised by this phenomenon is considered a national or regional problem and has never been thought of it as a local one. We are striving to improve facilities for activities in the city, concerning the valley, river basin or region and not insisting upon the industrial site, so there is a tendency to reduce the scale of the problem. Of course there are industrial areas, coming from the fact that certain activities have ceased, but their essential characteristic compared to other European countries is just the large size and length of these areas. This leads to a progressive decline of the area and can cause impediments in terms of conversion operations through the negative perception of the area, showing the risk of certain high costs.

The main effects observed in the analysis of the situation in Russia refer to the process of reducing the industrial site, such as motorcycle plant Irbit, Western Siberia, Irbitskiy Motocyklentyi Zavod (IMZ) thus diminishing economic activity related to the standardization of production conditions and having to reduce their production area. The plant was originally transferred from Moscow to Siberia in 1941 under the Nazi threat, and the products manufactured here are far below the Western market; they have excelled only through their grandeur and reputation earned over the years. Most areas were sold to other companies that have also developed industrial activities.(Edelbutte,2009)

Also, differences between the Moscow region and other regions are quite visible, both in terms of funding allocation and analysis. For Moscow region we can refer to the future Techno-park Skolkovo, designed as a future Silicon Valley of Russia that will encompass both research centres, universities, and five major industrial clusters in the IT, biomedical, energy, space and nuclear.

In addition, for Moscow region there is a Moscow Architecture Preservation Society (MAPS) that seeks to preserve the industrial heritage of the city. The problem insists upon the expansion of the industrial heritage of Russia and its diversification, which proves to be very difficult to make an exhaustive and urgent inventory.

2.7 Romania

In Romania we can distinguish five stages for the industry evolution: spatial diffusion phase (until 1918), selective concentration phase (1918-1945), regional polarization phase (1948-1969), spatial dispersion phase (1969 to 1989) and post-communist phase (after 1990) (Smith, 2000).

Last stage, after 1990 refers to the purpose of this study because dynamic changes in industry for the past 23 years have been extremely alert in comparison with the past 150 years. This dynamic was influenced by a series of reasons, the most obvious being related to changes of the political regime which brought change in the overall society and its priorities, imported Western industrial policies, range to the market economy, the follow-up of new economic strategy to ease access to the European and international bodies and last but not least, an extremely important factor being the implementation of environmental policies since 1990 and ratification of international treaties on the environment and its protection.

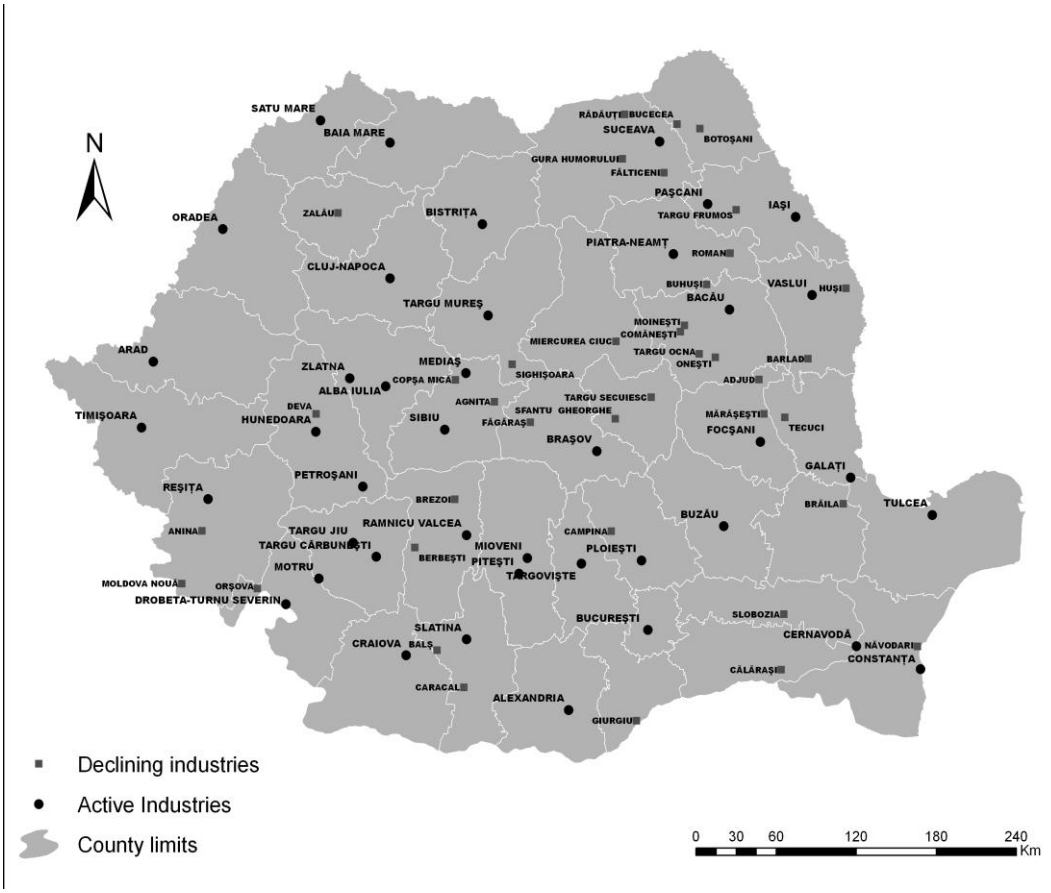

Figure 2: Cities with declining and active industries in Romania

Transformations after 1990 in terms of territorial planning, urban sprawl and economic policies have led to important decisions regarding future profitability and industrial platforms. Thus, conversion or industrial conversion processes occurred. So industrial sites located in urban areas were converted from units of production in units of consumption (shopping centres) or by systematic restructuring and controlled bankruptcies or by their relocation outside the cities. This happened especially in major cities, most likely in most county seats. In smaller towns platforms, which were not considered profitable, they have been abandoned, reaching now up to a degradation point (e.g. Bucecea sugar factory, textile factory Buhusi etc.) or were put under conservation status. Large industrial sites in the outskirts of urban centres have been restructured on these lands, opening a series of smaller industrial activities but without similar activity profiles (platform IMGB Bucharest, Suceava Burdujeni platform etc).

All these changes for the past 23 years have found an answer in the social and economic dynamic of the country. Although the strategies discussed were used as a pretext for making possible the access to the European Union and NATO, statistical data on

economic and social situation are negative triggering a series of results, which is reflected in the territorial planning component and in the environment.

For the Bucharest industry, there are examples of industrial units that have relocated a few years ago their production activities in areas situated at the capital variables (and closely related to growth opportunities in new areas of implantation), as others have gone through a process decentralization and led to a subordinate working pitting central decision-making centre.

Directions followed after 1990 by industrial units from the capital were very different from each other (Cepoiu 2009):

a) *Rental of areas held in addition* - developed based on gains derived from real estate higher than the production, and in the recent years there is a growing tendency of evolution. Ex: SC ELECTROMAGNETICA S.A. - Restructured its activities after 1990, besides introducing new fields (in addition to the main electrical sector), corporate governance and also appreciating real estate market opportunities. Thus, the society has invested in renewing former production halls in the area of about 20,000 m², to lease them later on.

b) *Liquidation and sale of industrial land belonging to these persons* - this way, while proving to be very profitable, based upon existing advantages in terms of location, accessibility and utility; this generally refers to large areas of land and they offer a wide range of investment premises.

Commercial and Offices (first Cora hypermarket in Romania) was built on land owned by company SC Granite SA Milk Factory SC MIORITA SA, privatized in 2001, was subsequently closed and demolished in 2005 to make room for the second hypermarket Cora in Romania, SC FAN SA has invested since 2003 in a shopping centre construction materials (Sphere building centre) KAUFLAND first store opened on the former soap factory STELA demolished in 2004, which was closed by Colgate Palmolive and then sold to the German network of supermarkets).

Residential (CENTRAL PARK was built on the former bread factory DÂMBOVIŢA, Rose Garden residential complex on the former cotton spools factory)

Commercial and office and Residential (largest real estate project market has involved transformation of the former plant SEMANATOAREA a housing complex, office buildings and commercial premises in the industrial park, SEMA PARC).

c) *Relocation of production activities outside the city*. This is a trend that seems to increase more and more, all industrial units in Bucharest could become potential targets for investors in real estate if we consider EU regulations that stipulate to move polluting industries out of town.

d) *Changing specialization according to market needs*. By speculating on market requirements, which are constantly evolving, some industrial units have decided to change the profile of activity: for example, the production of heavy machinery to textiles.

e) *Investing heavily in cutting-edge equipment* that produce cheap, quality and that comply with European environmental standards regarding pollution caused by industrial activities.

3. Evaluation of perception towards the conversion of the industrial spaces

To assess Romanian public perception concerning the industrial conversion, there have been selected by convention 30 cities (out of 320), that were affected by the restructuring and conversion of the industry (Fig. 3). Initial industrial activities specific to these cities were the mining industry (e.g. Moldova New), energy industry (e.g. Turceni),

petrochemical and chemical industry (e.g. Ploiesti, Campina, Suceava, Onesti, Bacau), metallurgy (e.g. Copsa Mica), machine manufacturing (e.g. Barlad).

During 2011-2012,193 questionnaires were applied, including questions about the perception of the initial function (industrial) and the current one, the vision of the population about the direction in which the conversion process should be oriented, plus a profile of the respondent.

Of all respondents, 65% are men and the dominating population is over 40 years (74%). Most of these persons had completed high school (48.2%) or a vocational school (43.2%) (Fig. 4).

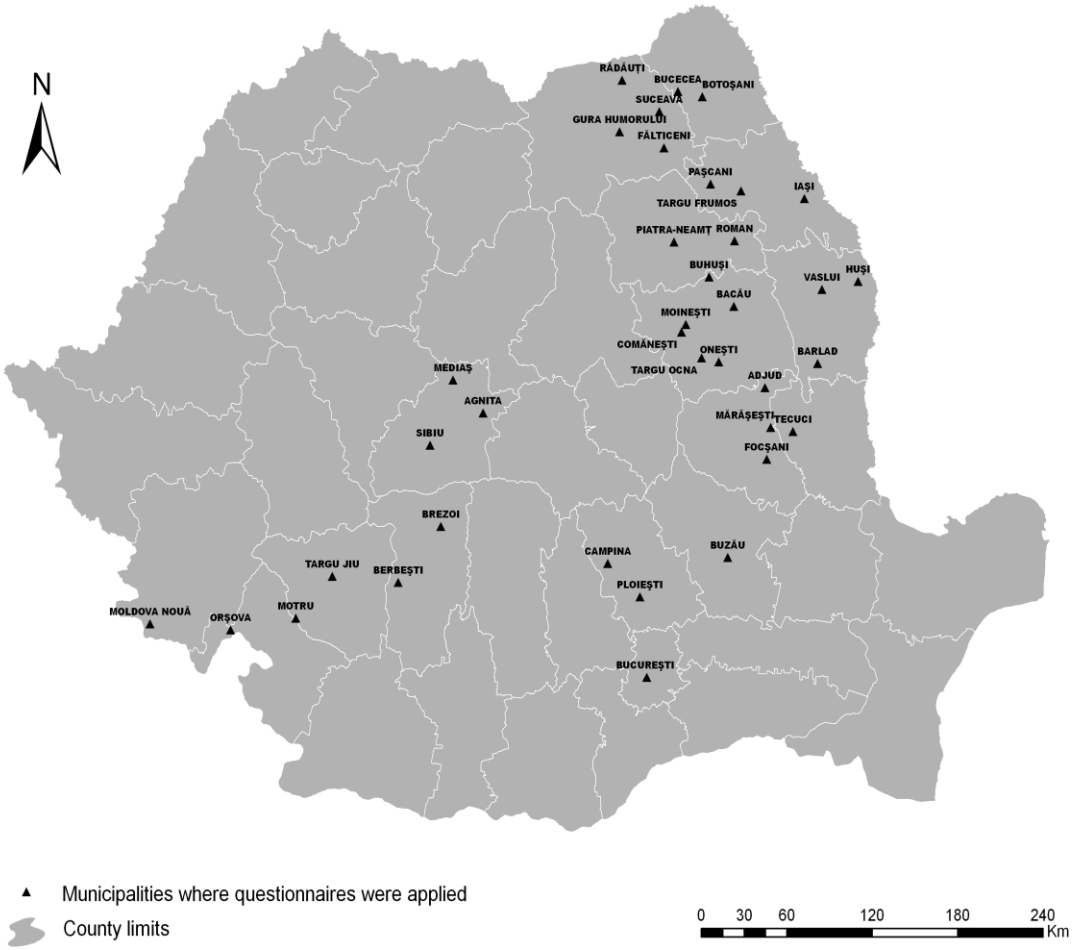

Figure 3: Cities where questionnaires were applied

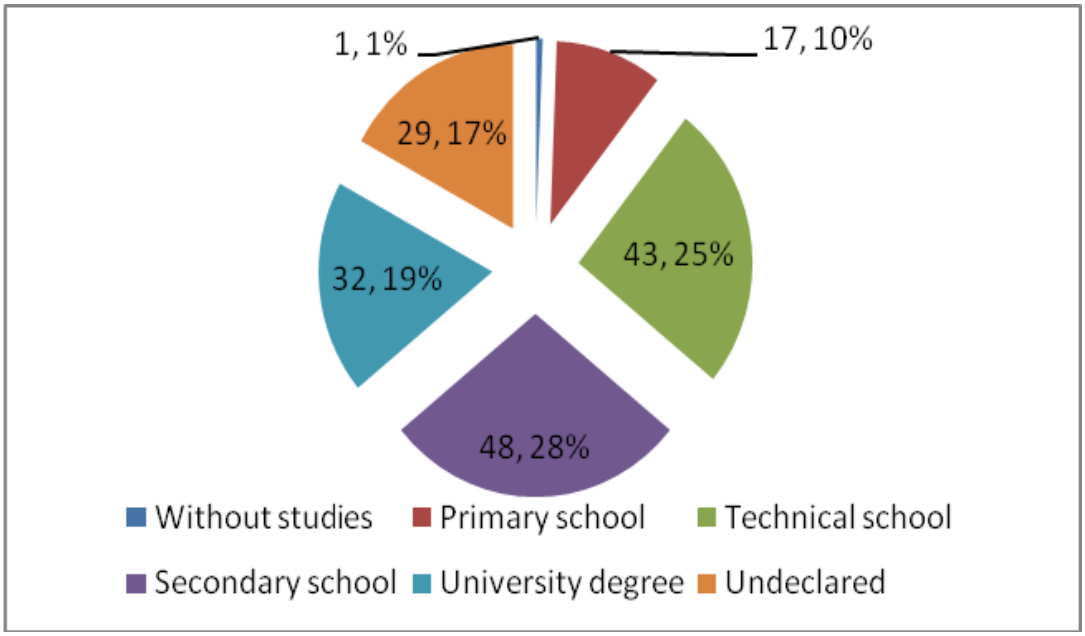

Figure 4: Respondents' level of education

3.1 Results

From the total of the interviewed population, 96% knew the initial function of the site, 78% knowing also the year in which the activity was closed or restructured. The moment in which a new activity started is not so important for the population, fact underlined also by the only 47% that perceived the moment of the change in the area.

The special attachment towards the initial activities is highlighted by the population perception in relation to them, 53.9% from the interviewed population considers that the existence of the activity has been very good for their town. The value is considerably different when it comes to the perception of the current function that is considered to be bad and very bad by 57.4% of the population (Fig.5).

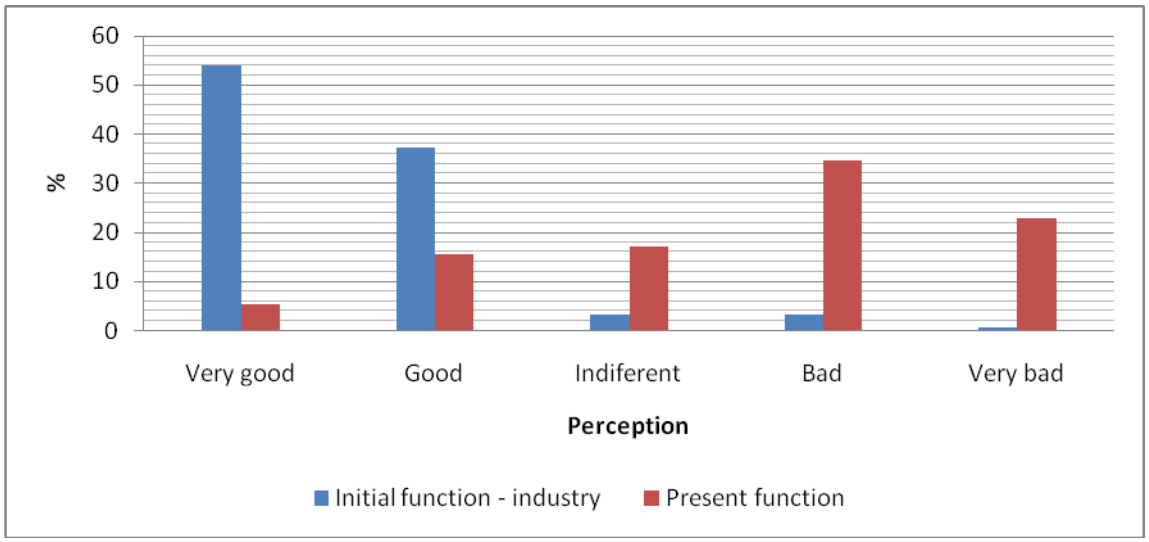

Figure 5: Population perception in terms of initial industrial function and the current one

The positive image of the initial industrial function is given by the fact that it generated employment and welfare for the town and the neighboring areas. Also, the fact that the unemployment rate is a real problem faced by most of the analyzed cities, especially by the age segment between 50-65 years (involved in high proportion in former industrial units), argues that perception.

The aggressiveness of the two functions can be observed by the fact that most of the population is not aware of the environmental issues specific to the operation period. (Fig. 6). However, aggression is considerably lower when it comes to the current function.

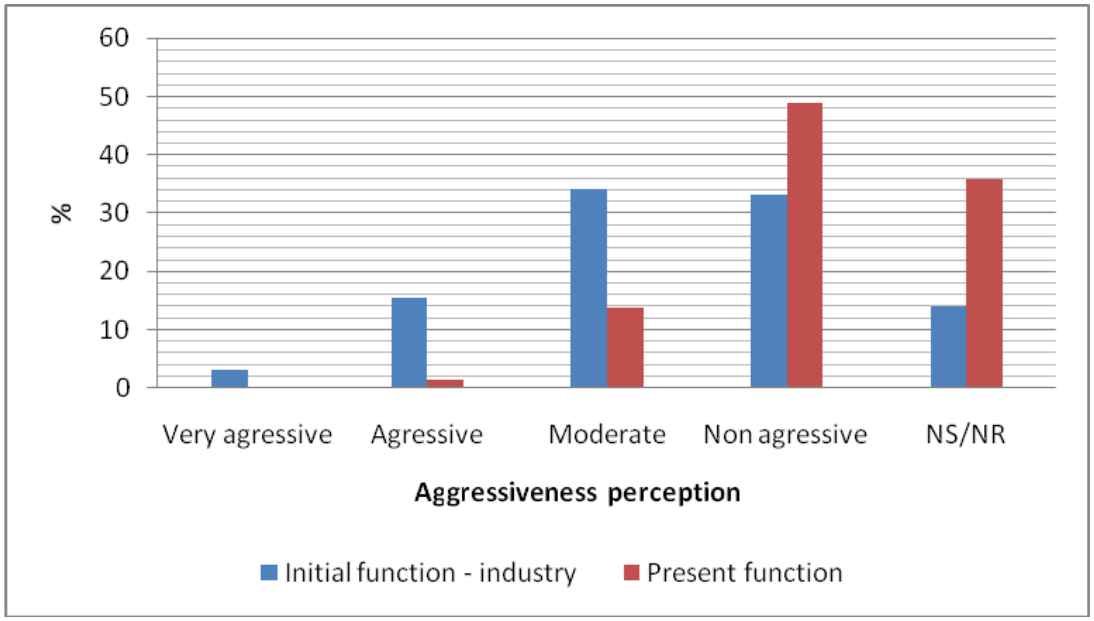

Figure 6: Aggressiveness perception

As for the conversion process, it can be observed that most of the population wants the reactivation of the initial function (39.9%) or the reconversion to another industrial branch (38.9%). The interest to the tertiary sector is extremely low. In this way, in most of the towns the interest for commercial or residential spaces is very low (Table 2).

Table 2: Population perception towards the conversion of the industrial spaces

Item	%	Item	%
a. To return to the initial function	39.9	e. To transform into a logistic park	0.5
b. To switch to other industries	38.9	f. To transform into a park or a public garden	0.5
c. To transform into commercial spaces	2.1	g. To transform into a services place	4.7
d. To transform into residential complex	1.5	h. To be preserved as industrial heritage or as a museum	0
Other opinion	11.9 (dominant is everything that is productive)		

4. Conclusions

The major findings of the paper are that the population is still relatively less willing to accept the conversion process of the industrial units as main forms of urban welfare support, during their operation. This is really important for the territorial planning, as the local and regional authorities should be aware of the extremely high pressure existing in the area when operating such processes. The disinterest for preserving some industrial sites as heritage elements is also worrying, especially as in this approach could be downloaded most of the social tensions and the conversion process would be easier accepted.

These types of perceptions are specific to all the industrial areas, but what is different from Romania is the interest of the administrative sector to change this situation and to diminish social tensions. This fact results in limiting opportunistic and speculative space planning and in the possibility of creating a long term vision that can ensure the sustainability of urban settlements.

The study's limitations are linked to the fact that in various human communities there is a high degree of suspicion when it comes to people from outside the community, which can cause a high number of neutral responses or some that do not reflect that the real position of the respondents.

The future researches will focus on delineating the profile of the people with varying degrees of acceptance in terms of conversion and reconversion processes.

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