LOCAL LEADERS AND THEIR RESPONSIBILITY IN SHAPING THE NEW ECONOMY OF FORMER INDUSTRIAL REGIONS

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ABSTRACT

This paper aims to highlight the importance of local leaders in the functional restructuring of former industrial areas, as the latter are struggling to reset their economic processes. The emergence of the third industrial revolution produces a series of vital changes and the most affected regions are the ones that were once dependent to the production and processing activities specific for the industrial age. This shift is undesired for stakeholders that were once dependent to the state economy, and they are now looking to reset their activities in order to adjust themselves to the market economy. There is a new regional metabolism that is setting, and the greatest responsibility in this process stands on the shoulders of people's representatives: local administrations (LPA). This metabolism consists of flows of materials and information in the process from production to consumption that has to be reconsidered in the new situation of the global economy and it has to be analyzed using both economic and spatial tools. This is where this paper brings a relevant contribution to research, by combining methods used in management, public administration and territorial planning. The result is an overview of the processes in industrial zones, highlighting the role of local leaders in each situation.

KEYWORDS: *leadership, metabolism, administration, process*

JEL CLASSIFICATION: R11, Q01, R58

1. INTRODUCTION

We reckon that major economic trends have a transversal impact, in every level of human organization, from the world flows of information, energy and materials down to the local communities and the interpersonal relationships. The communities that suffer the most are those dependent to only one of the processes, specific to only one stage of industrialization. All of the three industrial revolutions and stages of industrialization are the appanage of modernity. In this framework, considering the modern processes of production, consumption and extinction, there is the question about the raison d'être of the former mono-industrial communities and their role now, when we cross from the second to the third industrial revolution and, respectively, to the new paradigms.

Our study aims to highlight the role of community leaders for the regeneration of former industrial areas. Communities remnants of the industrial period are characterized by an occupational identity, which, once removed, leaves the group without any identity. Hence the role of leaders that must coalesce communities around new ideals and purposes, respondent to the new economic situation. But the most efficient leadership is applied to small communities, where there is a direct relation

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between the leader and every member, and each member can have a purpose in shaping the vision for the future development of the group.

2. METHODOLOGY

In this paper, we use the review of the latest literature relevant for shaping the new economic paradigm to which the communities must respond, and the most relevant methods of analysis in terms of spatial planning and flows of materials and information. Then, we take a closer look at the indicators of sustainable development in terms of communities, and we observe that there is a gap between what is seen as a priority by the United Nations and what is relevant for communities such as the former industrial ones. We combine the Maslow hierarchy for personal needs, and the Spiral Dynamics for community characteristics, together with the ISO 37120:2014 standard of indicators. The result is an integral chart which highlights the gap between the needs estimated from above and the ones that respond to the real problems of the former industrial communities in their quest for a new raison d'être. This chart is the main instrument for the observation of critical point and establishing the role of local leaders in generating the new local circular economy.

3. LITERATURE REVIEW

There are three issues that we address to establish the concepts used in describing the situation of former industrial communities. These issues are related to urban areas as organisms formed by communities existing as components of the ecosystem.

3.1. Urban metabolism

Nowadays, cities are the greatest consumers of energy and materials, impacting the ecosystem at a large scale, even beyond their own area of influence. The effects of urbanization are hard to be monitored and inserted into a singular representation of an urban area. This representation can use to the deeper understanding of the urban areas as complex systems seeking for sustainability. In order to deliver a holistic perspective about the economic flows that characterize a particular urban area, we must search for a type of representation that combines spatial and schematic characteristics. We use the model of metabolism, a relatively new approach emerging in both economic and spatial planning, as an efficient tool for the study of the relation inside cities and between them and their hinterlands.

Kennedy et al (2007) suggests that the concept of urban metabolism is studied since the 7th decade of the 20th century, with a gap of information in the 8th decade. But its roots seem to develop from even earlier attempts, during the 19th century. Back then, it was the context of rapid industrial development and the problem of agricultural fertilization or food production. The depletion of soil and the shortage of food in the new, fast growing cities resulted in the necessity for cycles that can use local waste as fertilizer for the production of local food. The concept itself, "metabolism", seems to be first introduced by Marx in "Capital" in order to described the exchanges between humans and nature occurring through processes of labor (Rapoport, 2011; Castán-Broto & Allen, 2011). In his acceptance, the metabolism is the circulation of money and commodities that are required to sustain the capitalist system, concentrated in large urban settlements. Human's contact with nature is not direct anymore, resulting in the alienation of the new modern society.

It is seen as a fundamental method that drive the emergence of the sustainable cities and communities. The general definition of the metabolism is "the sum total of the technical and socioeconomic processes that occur in cities, resulting in growth, production of energy, and elimination of waste" (Kennedy et al., 2007, p.45). It is based on the analogy between cities and organisms, consuming resources (inputs of materials and energy) and producing waste (outputs of materials and energy). Some of the first studies were conducted by specialists in domains that are not necessary related to spatial planning or economics: civil engineers, ecologists or chemical engineers. According to Kennedy (2007), there are many types of schools that can be differentiated in the history of studies about metabolism: the Odum school, describing metabolism in terms of solar energy equivalents; the method of material flow analysis (MFA), reporting stocks and flows of resources in terms of mass, which is also considered the mainstream method in urban metabolism studies; the inclusion of livability measures by Newman (1999), through health, employment, income, education, housing, leisure and community activities; and the studies of nutrients, a narrower preoccupation in the field, especially in the far east.

Kennedy et al (2011) recognized four types of application of the concept:

- Sustainability indicators, as the study of urban metabolism is a part of the reports about the State of the Environment, and so providing measures that create an objective characterization of the sustainability of a city;
- Inputs to urban greenhouse gas accounting, calculated by the multiplication of an activity level by an emission factor;
- Policy analysis by dynamic mathematical models, mainly developed by the MFA community, studying specific substances;
- Design tools, using the perspective of metabolism in redesigning cities and their infrastructure. This is described in Netzstadt by Baccini and Oswald (2003), by partially closing the loops, so that the input of energy, materials, water and nutrients are reduced. To support this application, Arup developed the Integrated Resource Modelling tool, used to assess the performance of different strategies for the built environment, in terms of sustainability.

In the MFA method, a city is seen as an integral part subsystem of the environment, because it uses the raw materials extracted from the nature to produce inputs in the urban area and sustain the its functions. The resources are partially transformed into products and materials that flow and, eventually, become waste that is eliminated back into the nature.

There are also critiques about MFA, especially because of the difficulty in the identification and gathering of accurate data of the materials and the flows of energy in modern cities. This represents a problem especially in the context of functional urban areas, in which commuting people working in the city live in the surroundings, thus increasing the amount of material flows with values that cannot be estimated.

The most recent application of the metabolism model is in the 2014 International Architecture Biennale in Rotterdam, through the collaboration between Gemeente Rotterdam, James Corner Field Operations, FABRIC and the Netherlands Organization for Applied Scientific Research, as parte of the IABR project. The methods used are new, driven by the concept that only new ways of thinking lead to new ways of doing things, and this new way of thinking is through design. As a result of the IABR project, design was used for actual innovation in practice, being used all over the Netherlands. The actual project consisted of thematic Ateliers, through which the city was studied and exposed, according to its relationships. The result was a set of spatial economic perspectives, as a fundamental research for the development of a sustainable city.

3.2. The next economy

We consider urban metabolism as a tool useful to analyze the emergence of current concepts in economy: the new economy, green economy or the next economy. All these three showcase the same problem identifiable in the capital economy of the industrial era: the fast-growing inequality between the urban societies and inside the same urban area. The alternative is seen as "an economy rooted in productive cities that have to be greener, healthier and more inclusive than the current ones" (IABR, 2016, p.7). This new type of economy is based upon the creation of the green collar jobs, as part of the environmental sector of the economy, with a focus on community economic

development. According to the Democracy collaborative (2016), the most important characteristics are the following:

- Developing of local assets for the benefit of local residents, opposing the traditional economic development which seeks to attract firms using incentives and increasing taxes that are to be paid by local residents;
- Promoting local ownership as the central feature of the thriving local economy, opposing the elite ownership supported by the traditional economics;
- Encouraging the strategies focused on local cycles of acquisitions and sales, keeping money circulating locally, instead of paying less attention to the leak of money outside the community;
- Bringing as many stakeholders to the table as it can, including the nonprofits, anchor institutions and authorities, instead of the decision-making based on governmental and private sector intentions;
- Aiming for the creation of inclusive jobs that help every family to enjoy a relative economic security, opposing the number of jobs created with no attention towards the period, wages or social profile;
- Linking training to employment and focusing on offering jobs to the disadvantaged people instead of relying on training programs disrupted from the actual practice and jobs;
- Developing institutions and ecosystems that are supportive for the creation of a new standard of economic activity, opposing to the acceptance of wealth inequality.

3.3. Community leadership

The development of new economies at a local level is based on local communities as a whole. In the scientific literature, communities are defined by four main dimensions: membership, influence, reinforcement and shared emotional connection (McMillan and Chavis, 1986). Its members feel as part of the community only if they have a clear role and they are able to make a difference within the spatial and personal limits. The sense of belonging to the community is built through shared places and experiences, including the time spent together. This means that the leadership in communities has a less hierarchical character (Onyx and Leonard, 2011) and it has a major volunteering component, and that it why it is related to an informal, non-elected relation.

Martiskainen (2016) proposes the use of Complexity Leadership Theory (CLT), drawn from the works of Keene (2000), Onyx and Leonard (2011) or Uhl-Bien et al. (2007). This theory is developed in order to deal with the society of the knowledge era (the emergence of the third industrial revolution). In the CLT framework, leadership is not about position and authority, but about emergence, interaction and dynamics. According to Uhl-Bien et al. (2007), there are three types of leadership:

- Administrative leadership, characterized by hierarchy and control;
- Enabling leadership, encouraging adaptability, learning by doing and problem solving through creative means;
- Adaptive leadership, empowering continuous change.

As a result of their studies, Onyx and Leonard (2011) identify the most successful elements for an efficient community leadership. In the first place, leaders must be embedded in the formal and informal networks of the community, being part of its activities and interests. Decision making must be shared by the community, as part of an open system of engagement with others. Leaders must prove to be leaders, in the first place by having a clear and sustainable vision about the future of the community. They have to be characterized by practical management skills, thinking about their potential successors. Nonetheless, true leaders have energy to cover actions in the entire community; they persist in their actions and are committed to implement the vision that is agreed along with the community.

Evans (2012) admits that the purpose of leaders in communities must be building power for the social change that the community expects: conditions, structures, cultural beliefs or practices. In this case, leadership is driven by observing the gap between the current situation and the situation that the community wants. Being a value-driven enterprise, it needs common values like social justice, inclusion or solidarity and the work together with others in order to affirm themselves.

The practice in enhancing community leadership generated a model that is relevant in every case of area regeneration, in democratic societies. This model is based on four cogs: the external policy environment, the structural arrangements of partnerships, the individual community leaders and the actual local community and neighborhood (figure 1).



Figure 1. The general model of community leadership *Source:* Purdue et al, 2000, p.42

In this representation, each cog is an important change driver. The regeneration policy is the main driver, because it determines the rules and resources for community regeneration. There are financial resources that flow into a neighborhood, accompanied by specific rules. These policies are implemented through local partnerships, where there are formal and informal rules that govern the structural arrangements. In this partnership, the most important actors that represent the local interests are the community leaders and the actual communities. In the case of former industrial communities, the role of leaders is more important than elsewhere, because they are all remnants of the former socialist situation, where relations between directors and employees were strict and the only ones who were allowed to think were the chiefs. This hierarchy is kept until today, and in consequence, the local leaders have a much more important responsibility than anywhere else.

In the new emerging economies, leaders have the capital role to envision the development of the community, overriding the loop of the current paradigm and mark its new reason to be. But the vision can only be built in accordance to the sustainability trends in economy, if there is to be a hope for a sustainable community (Irimie, 2014; Izvercian, Ivascu & Potra, 2014). The literature presented above recognizes the role of urban metabolism, and particularly of the materials flow analysis, in creating the most relevant picture for urban areas in the contemporary economic situation. Even though its limitations are recognizable, it is still the most efficient tool in the overall assessment for remote urban areas.

4. FORMER INDUSTRIAL URBAN AREAS TODAY

We face, today, the conceptual age, displacing industry in third or fourth world countries and leaving the second world countries to work in technology and communication. It concentrates the

new economic clusters around the main and secondary growth and development poles, mainly through the new offices and factories well connected to the main national infrastructures. In Romania, it is the case of Bucharest (as the Capital and the main city) and the two emerging metropolitan areas that are closer to Europe: Cluj-Napoca and Timisoara. This situation is, in fact, facilitated by the proximity of the main international mobility infrastructure (roads, railroads and airports).



Figure 2. Mono-industrial areas in Romania, remnants of the state economy model *Source:* the authors, based on Dumitrescu (2008)

This state of facts encourages economic development in particular urban cores, absorbing all the capable workforce from the surrounding regions. The most affected areas are the ones that cannot withstand the pressure of migration and cannot compete in terms of opportunities and quality of life standards. These are, especially, those areas that were the former drivers of economic development, in the former state economy that encouraged the creation of mono-industrial areas.

Today, the new global trends are pointed towards the emergence of circular economies, transforming the current linear ones, in which the materials flow in only one direction, from extraction to waste, that is subsequently destroyed or trapped. A circular economy tries to recover as much as the raw materials as they can, destroying the least quantity of materials possible. This way of thinking means that the city can increase the level of local revenue, and avoid unsustainable patterns of spatial or economic development, and it pushes cities forward to innovation according to their own needs. The new vision for spatial economic development is driven towards fulfilling the primary needs, such as food and medical, mostly through the new technologies. What is today going to waste, must be the subject of recovery and recycle, creating the activity of urban "mining" – seeking opportunities in used materials, that can be the source for new products as part of the

circular market economy. These raw materials can be recovered from waste, rivers or sewage and can be used as fertilizers in agriculture or as construction materials.



Figure 3. Former mono-industrial areas in the economic model of territorial development, according to the new law of territorial development, including the TEN-T network *Source:* the authors, based on MDRAP, 2015

5. CASE STUDY: JIU VALLEY, ROMANIA

The main aspect that characterizes Jiu Valley is the specific socio-economic context. The causes can be observed in two sources: the unsustainable mining processes, the result of forced industrialization that brought a population influx in the area above the level of sustainability, or, at a smaller historic scale, mine closure and the lack of strategic planning to counteract the negative effects. We present next the main issues for the area, as they were registered for the local development plan for the Petrosani Municipality (PMP, 2015). One of the main issues of the area is the relative isolation from the county and reginal administrative centers. In this case, the placement between natural areas protected by Natura 2000 is a disadvantage, meaning that there are a few points of access in the area, and the distances to the next urban settlement are relatively major. There is a lack of strategic planning when it comes to a rational planning of the urban surfaces, a lack of regular public participation and implication from the civil society and a lack of quality public spaces and landscape design. For the local administration, the main opportunity seems to be the development of tourism, but there is a low quality of accommodation infrastructure and no tradition. Another point that is against tourism is the degraded environment and the lack of civic culture that needs to protect the environment. There is a potential for summer sports, but the workforce is not qualified to understand this type of activities. Also, the infrastructure has a low quality, especially for the railroad, pedestrian sidewalks and bike paths. As result, there are large

marginalized urban areas, separated from the main urban cores by large infrastructures. The environment is degraded, as an inheritance from the industrial activities and the lack of education regarding the harmful effects of human activities against it.



Figure 4a. Left half of the material flow analysis for Jiu Valley *Source:* the authors, based on IABR, 2014





The greatest advantage is offered by the Natura 2000 protected areas, but it is diminished by a lack of protective measures on the main ecologic corridors that get into the urban area from the surrounding areas. The lack of trees planted along the main streets or the main water streams is noticeable.

In terms of people and workforce, we can easily observe that the natural demographic growth is negative, starting from 1990. The youngsters migrate to other areas, for studies or better paid jobs. Also, the ones that remain are qualified in useless jobs, without perspectives, meaning that there is a lack of collaboration between employers, potential employees and education institutions. The local economy is based upon activities of wholesale and retail, which means that the area is primarily consuming. The land available for crops is below 1% of the total land area, and the Valley keeps to be a mono-industrial economy through activities centering around Hunedoara Energetic Complex (CEH). There is a low level of competitiveness and entrepreneurship at the local level, both in terms of economic activities for residents and tourists. There is a reduced involvement of the University, through scientific research in industry. In health and social assistance, we notice the lack of specialists combined with a lack of training programs for medical staff of the Emergency Hospital. There is a continuously growing number of social assisted persons with an increased impact on local budgets. A database on all public and private social service recipients is missing. Also, there is a lack of spaces available for the development of social services such as day care centers for children, counseling and support centers for people with disabilities. In the field of culture, arts, mass media and sport, there is a low involvement of young people in cultural and artistic life, and an insufficient support for artistic and cultural activities.

All of the information presented above is about the effects. As Petrisor (2015) remarks, in this particular situation we need to observe the causes that determine all these problems, through a generative tree that can present and achieve an overall assessment. This is the reason we analyze Jiu Valley as an urban metabolism. The analysis is made in a graph, as a primary approach to the context, to respond to issues relating the influence of flows over the urban quality of life and the connection between this one and spatial development. Through this chart, we see the premises for a shift between the linear to a circular economy, as closest as it can get to the local community.

Today, one of the solutions that are seen for the regeneration of the Valley is the shift from an area dependent by welfare and grants, to an area that can manage itself. In fact, this is the shift from a linear to a circular economy, from an economy where raw materials are imported and then transformed into waste, to an area were waste is recycled and reintroduced in the process. This type of development can generate new models of income for the entire area. The waste materials and substances are not destroyed or eliminated, but they are recycled through *urban mining*. This is where the local university has a capital role, understanding the necessities and advantages that come from the research of regenerative materials and a new life cycle for the materials in all of their instances.

Together with the flows of materials and substances, there is a need to introduce, also, the migration of humans and the financial flows. Regarding this type of chart, we observe two types of attitudes. The first one is concerning the operating parameters for the entire system and the effects on the environment, and the second one regards the entire system as a purposeful one, searching the types of life that can be sustained and the socio-political context.

The chart (figure 4b) is a uniform representation of flows, from input to output, regarding cargo, food, energy, water and waste. A particular flow regards the migration of human capital, with 26016 inhabitants leaving the area and 120634 remaining, from the total amount of population that was present at the peak of industrial development. Another particular flow is the once concerning money, relatively opposite from the flow of materials or energy. Each operation has its own price, that is quantified in a particular set of flows. We can see that there is a large amount of inputs and a small amount of outputs, excepting the flow of money. A positive aspect is the internal flow of water, sufficient enough to supply the number of inhabitants in the Valley. To become resilient, especially in the elements that respond to the fundamental needs, it is necessary to invest in new means of food production, through contemporary technological solutions that replace the low potential and the lack of soil fertility. In this case, we also regard the fertilizers and local activities, such as animal breeding and collecting debris, turning them into compost and nutritive substances.

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Figure 5. AQAL diagram of ISO 37120:2014 indicators, based on their reaction to local needs. Each Group of letters correspond to an ISO indicator or group of indicators. Source: the authors, based on Beck & Cowan (1996), Irimie & Danciu (2015), Maslow (1968), Robledo (2013), Wilber (2000) The AQUAL diagram presented in figure 5 shows that most of the sustainability indicators are not relevant for communities such as Jiu Valley, where one can only hope to find a cultural level corresponding to the orange meme, of the multiparty democracy. But these indicators are the ones that sit at the foundation of every local development strategy and top-down policy framework proposed for the area, as part of the national or regional development strategy.

6. PROPOSAL

In the context of a former mono-industrial area, as the Jiu Valley will soon be considered, emphasized by a history of coal mining and intensive industrialization, we seek for new patterns and strategies for sustainable development or smart shrinking. Any new and contemporary vision uses the latest tools for analysis, as the urban metabolism is through MFA. We observe that there is a major gap between the current urban metabolism and a future circular system of flows and materials. We address to this difference with the proposal of a new type of strategy, one that can fill the gap and recycle the flows.

We do not try to present here this new strategy, but only to set the main targets for a sustainable region, either in development or shrinking situation. This needs the decentralization of the decision from the local authorities and collaboration with local institutions. The latter become anchor institutions, the drivers of change. They sustain the local economy by purchasing goods and services from local worker cooperatives, which, in their new role, hire residents of the surrounding low-income communities. There is another key stakeholder category, the one of non-profit corporations, which finance and assist the workers' cooperatives. The role of the municipal government is, therefore, reduced to creating a good environment for implementation and to partner and assist local non-profit corporations on economic development.

This is where the role of community leaders comes in action, because they have the following responsibilities (according to the general model of community leadership):

- They are the only ones that can influence national and regional policies, so they have to ask for and participate to the national and regional strategies and plans and propose what is specific and in the best interest of their community;
- They are appropriate to initialize local partnerships and influence the new institutional culture. They know who are the formal and informal leaders of the communities and which are their means of intervention: non-governmental organization, local institutions or initiative groups;
- They are the main joint between the decision for partnerships and communities themselves;
- They have the ability to decentralize the decision making process even farther than it is restricted by law. The best decision, for every community and neighborhood, is decided in the community itself. Especially in the particular case of former mono-industrial and mining areas, it is the attitude and interest of leaders that forbids or allows communities to voice their opinions and capitalize upon their own vision.

This proposal introduces the so-called Cleveland model, a type of social democracy inspired by the experience of Mondragon Cooperative Corporation in the Basque Country of Spain. In the case of small urban areas, such as Jiu Valley is, it brings the best local assets together to decide upon the future. And it is the role and responsibility of local leaders to lay and encourage the new vision, the cooperation with the national and regional government and the partnership with local institutions. In the case of Jiu Valley, the most important institutions are the University of Petrosani, the Emergency Hospital and Hunedoara Energetic Complex. They are the three and most important pillars of change and their relation to the local economic enterprises is essential in order to promote a sustainable reconfiguration of priorities. The local leaders are not just the mayors, but also formal and informal leaders of communities and neighborhoods, that have to be encouraged in order to act in the best interest of their communities.



Figure 6. The Cleveland model, applied to the model of Jiu Valley. *Source:* the authors, based on Democracy collaborative, 2016

7. CONCLUSION AND DISCUSSION

This paper aimed to create the basis for a potential dialogue between scholars and local institution regarding the future of the Jiu Valley. It started by presenting a review of the latest literature in terms of urban metabolism, the next economy and the role of community leadership in the regeneration of an urban area. Then, it presented the situation of former industrial urban areas in Romania today, without any raison d'étre in the situation of a continuously changing national economic profile. In the case study of the Jiu Valley, we highlight the main issues and the current local metabolism, one that is linear and unsustainable. Our proposal was to rethink the situation according to a new vision, one where the local institution pay a much more important contribution to the economic situation and capitalize upon local enterprises. This is where community leaders must take charge and reposition themselves as engines of change. Their responsibility is relevant in every level, from the national, down to the regional and local one.

This research has obvious limitations, given especially by the qualitative (as opposed to a quantitative one) methods used in research. We do not seek to exhaust the subject, but rather to open it for further research. We see the role of the main stakeholders, local institutions and leaders and we set fundamental directions for every new local strategy for this area. It is especially important, as the latest attempts of the Romanian Government are geared towards the release of a memorandum for the Jiu Valley and two other similar regions (Apuseni Mountains and the North of Moldova), with some measures that have the status of strategic directions.

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