

ACHIEVING RESILIENCE WITHIN COMMUNITIES THROUGH LOCAL CURRENCIES

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Abstract

Purpose – *The paper aims to investigate the possibility that a local currency system becomes a source of strengthening the local economy in Baia Mare, in its objective to become sustainable and, in the long term a resilient community.*

Methodology/approach - *As an approach, the primary qualitative observation method was used, combined with the literature review.*

Findings – *Open innovation has the potential of reshaping the entire urban ecosystem and incentivizing local stakeholders to act towards environmental protection, climate change mitigation, social innovation, and economic development.*

Research limitations/implications – *n/a.*

Practical implications – *A viable approach that can lead to improved sustainability of a local community.*

Originality/value – *Introducing iLEU (immaterial Local Environmental Utility), a cryptographic coin system that rewards civic action while supporting local value chains.*

Keywords: *resilient communities, smart cities, local currency.*

Introduction

As Callaghan and Colton (2008) pointed out „communities are dynamic with the ebb and flow of people, businesses, money, and ideas. They are periodically punctuated with unexpected crises, be they ‘homegrown’ or external in nature”.

The movement toward sustainable development lies neither in focusing solely on the bottom line immediate needs nor the abstract „sustainable future”, but in a middle ground that seeks to enhance long and short term community *resilience* through investments in all the various forms of community capital (Callaghan and Colton, 2008).

A widely used definition of sustainable development heralds from the World Commission on Environment and Development (WCED, 1987):

„Sustainable development meets the needs of the present generation without compromising the ability of future generations to meet their needs”.

The concept of resilience is one that has been developed around managing and responding to community crises (Paton and Johnson, 2001; Comfort *et al.*, 2004; Campanella, 2006). Resilient communities are those that can absorb and/or adapt quickly to change and crisis.

Ultimately the success of building a sustainable and resilient community depends on strong leadership, vision, and clear and open communication (Callaghan and Colton, 2008).

Achieving sustainability requires future-oriented thinking, proper long-term development strategies, and concrete action (Kettunen *et al.*, 2020). Sustainability and sustainable development mean that environmental, social, and economic aspects are all considered in decision-making (Echebarria *et al.*, 2017).

Amongst other factors, stakeholder engagement is vital for implementing effective sustainability strategies (Zeemering, 2018) and strategic thinking requires stakeholder participation (Bryson *et al.*, 2010; Zeemering, 2018). A similar observation was made by Evans *et al.* (2005), who argue that participatory governance with a broad spectrum of participants is a precondition for achieving local sustainability. Value creation, stakeholder engagement, and capability development are necessary components of this process of pursuing locally embedded sustainability (Laszlo & Zhexembayeva, 2011; Zeemering, 2018). By value creation, Zeemering (2018) means the collaboration and co-learning between local sustainability-related stakeholders, which improves their strategic thinking skills, and the provision of sustainable local services, to realize the immediate and long-term social, economic, and environmental benefits that add value. Such cooperation between diverse stakeholders provides local governments with an opportunity to steer, coordinate, and influence other actors and their capacity to participate in sustainability-related issues.

As Roseland (2012) underlined, sustainable community development requires mobilizing citizens and their governments to strengthen all forms of community capital. This includes minimizing the consumption of essential natural capital and improving physical capital, which in turn require the more efficient use of urban space. It also includes strengthening economic capital, increasing human capital, multiplying social capital, and enhancing cultural capital (Roseland, 2012). Community mobilization is necessary to coordinate, balance, and catalyze community capital.

In the years ahead, communities, enterprises, cities, and nations that learn how to strengthen all six forms of capital simultaneously are likely to be the ones that will thrive (Roseland, 2012).

The Covid19 pandemic caused lockdowns throughout Europe and forced the rediscovery of local resources, both for buyers and sellers of goods and services. Social Media Groups of local producers were rapidly created, supporting the local ecosystem. Resilience in communities increased, as external help is more difficult to provide. Climate Change, social resilience, support for NGO's and people in vulnerable situations are more efficient if organized at a local scale.

Consequently, a strong need for strategic thinking and strategic behavior occur, and local decision-makers have to deploy smart and long term envisioned strategies to ensure the communities they govern can overcome the threats that the pandemic induces, both directly and consequent.

Smart cities and innovative communities

„A Smart City is a city well performing in 6 characteristics, built on the ‘smart’ combination of endowments and activities of self-decisive, independent and aware citizens” (Giffinger *et al.*, 2014). The United Nations, define "A smart sustainable city is an innovative city that uses information and communication technologies (ICTs) and other means to improve quality of life, the efficiency of urban operation and services, and competitiveness while ensuring that it meets the needs of present and future generations concerning economic, social, environmental as well as cultural aspects" (Recommendation ITU-T Y.4900, 2020). Ideally, a Smart Sustainable City develops instruments and automated mechanisms to monitor its progress in the previously mentioned fields, as well as automated decision-making systems based on those metrics, indicators, and data.

However, cities across Europe, and especially Romania are heterogeneous entities. Development or lack of development is not ubiquitous. Diverse communities are created within cities, on criteria such as neighborhood, social status, age, occupation, hobbies, or even political principles. The diversity raises challenges that cannot be tackled on a city scale, while solutions often work for certain groups only. Public-Private-People Partnerships are part of the innovative solution if they identify specific needs and create local responses based on the community's capacity of understanding and absorbing innovation.

Resilience against disasters in Romania is ensured at a national and local level by authorities such as the General Inspectorate for Emergency Situations, as well as municipalities and volunteer groups. The main bottleneck cities face are lack of expertise and lack of funding. Often, policies are created by external, highly qualified experts. This increases the void of local expertise and reduces the community's capacity to react to an unprecedented crisis.

The gap can be overcome through capacity building at a local level, through strengthening ties between local resources such as companies, research centers, academia, authorities, and civil society. Ties are built over time, mainly through the creation of local ecosystems, local economies, and favoring local and regional resources.

Local currencies as a potential solution for overcoming the crisis

Overcoming economic and financial crises require innovative solutions, especially in small or remote communities. Controversial theories such as Silvio Gesell's concept of „free money”, initially inspired by the 1890 financial crisis gain traction in similar depression times. In 1891, Gesell published his first important work: „Currency Reform as a Bridge to the Social State”, proposing money to have an „expiration date”. To avoid expiration, the money would have had to be stamped, which incurred a cost (or depreciation). This would render saving money costly for citizens. After World War 1 Europe's financial and political problems, the Great Depression, raised further challenges such as lack of jobs, fear of spending the little money people had, and low incomes. In 1932, Michael Unterguggenberger, mayor of Worgl, Austria, and enthusiast of Gesell's theories, decided to turn the city's 40.000 schillings into stamp money. This money was then used by the city to pay for public works. Companies used it to pay employees, which, in turn, used the Wir (local currency) to shop for their daily needs. As a result, infrastructures (road repairs, sewerage, etc.), jobs, and the overall quality of life in the city increased tremendously, concluding with advance payments of taxes. Unfortunately, The Austrian National Bank abruptly ended the successful experiment in 1933. Similar initiatives took place throughout the world in early 1930, most of them being highly successful for short periods. Modern initiatives, such as the SARDEX in Sardinia benefits from cooperation amongst local entrepreneurs sustaining one another in a supplier-credit type of mechanism. All participants have a zero balance at the beginning. They purchase goods and services on „credit”. Yearly, they must rebalance their accounts, through acceptance of the SARDEX coin or EURO compensation. Fureai Kippu, a Japanese local currency rewards people for helping the elderly and it has been successful since 1995. The coin can then be spent on paying services for one's elders or kept until the owner will need to be supported due to old age.

The Baia Mare Urban Innovative Action

The city of Baia Mare has been a playground for urban innovation since early 2000. Urbact funding provided the city with strategic approaches for societal challenges such as Environment Remediation, Social Innovation, or Urban Planning. However, the former mining and metal processing capital of Romania, lost part of its glory, due to the mining and processing sector's foreclosure in late 1990, leaving the city with dozens of hectares of heavily polluted sites. Lead, Cadmium, and Arsenic soil's pollution are expensive and difficult

to remediate through conventional methods such as excavation, and do not solve problems, but rather relocate them. Phytoremediation might be a slow answer, though faster than the non-action over the last 30 years. The European Commission, through the Urban Innovative Actions (UIA) initiative, has decided to support the city in finding innovative ways to address its historical and contemporary problems such as lack of entrepreneurship initiatives in high-added-value fields, population aging and outwards migration, and community disengagement. Phytoremediation not only cleans soils, but helps to landscape and generates usable vegetal resources, that can provide heating, thermal insulation for buildings, or innovative materials. At the same time, citizens' mindsets and resilience to climate change need to be addressed more abruptly. iLEU (immaterial Local Environmental Utility) is the city's transversal transformational tool and liaison amongst the fields, a cryptographic coin system that rewards civic action while supporting local value chains.

Oversimplified, the iLEU quadruple helix stimulates citizen-centric services from the public and private sector, while empowering citizens, business, and NGOs to support the co-creation of public services. The Business sector benefits from the iLEU as a local economy booster (iLEU can only be spent locally) while shaping itself according to specific local needs of citizens, NGO's, and authorities. NGOs' actions are sponsored through iLEU, with the condition they answer specific challenges within the city.

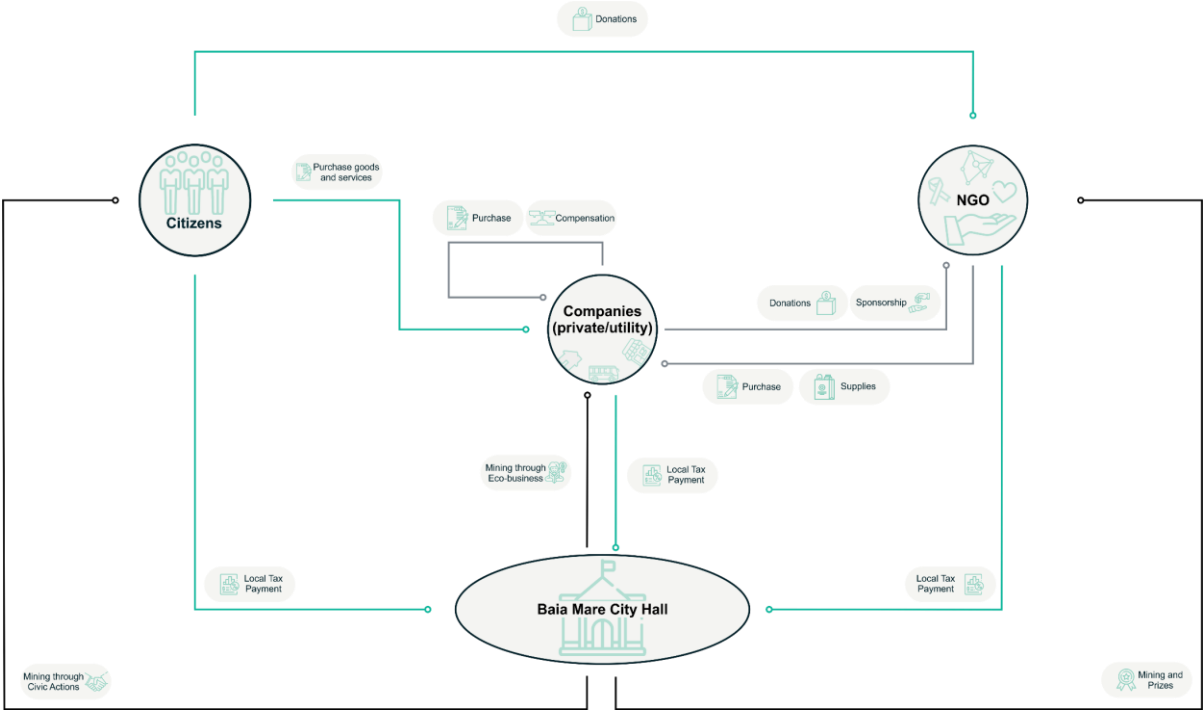


Figure 1 - iLEU community model

Just like any local coin or currency, the iLEU is only usable within the Baia Mare Metropolitan Area. This implies that only locals can benefit from it.

iLEU has several unique features, separating it from „traditional” cryptocurrencies, as well as from electronic money, as follows:

- iLEU cannot be purchased or transformed into real money
- iLEU usage is voluntarily
- iLEU can only be used at an equivalent value of 1 iLEU pe 1 RON

- iLEU is „mined” through environment-friendly actions such as walking or using a bike to work, participating in phytoremediation events called „plantathlons”, involvement in the SPIRE project actions, etc.

iLEU is expected to generate new business opportunities, support companies' cash flow, as it merges the supplier credit, and direct/indirect compensation mechanisms. As it can only be used to purchase goods and services, we consider it should have increased velocity, as saving iLEU would not grant any interest to the user.

It all works through a simple mobile phone App, whose main qualities are usability and simplicity. Users can instantly transfer iLEU from one's wallet to another.

Future steps and envisaged outcomes

iLEU's relevance is bound to the number of acceptors. Acceptors will be rewarded both through intrinsic and extrinsic means.

Getting users on board is conducted by a three-fold strategy. On one side, getting accepting parties on board is the main challenge, considering the pandemic-generated crisis. Initial acceptors of iLEU to be involved are The City of Baia Mare, museums, theatre, utility providers, and private operators.

Second, getting iLEU into the market is done by rewarding desirable actions, such as alternative mobility, participation in SPIRE Hub events, plantathons and competitions

The third, and most difficult is the transformation of iLEU into innovation and environmental vouchers, supporting entrepreneurs to develop green business and processes, as well as use renewable energy and materials. Implementing cradle-to-cradle policies for their products or supporting environmental regeneration. For natural persons, this step coincides with vouchers for green business, selective garbage collection, energetic home enhancements, usage of ecologic materials for building, etc.

As iLEU gets released to the public, citizens, entrepreneurs, or NGO's will have limitless opportunities to create new, innovative usages for it. iLEU, as an innovative tool for digital transformation, empowers its users to creatively create new business and sustainability models, such as funding social innovation, creating participatory budgeting initiatives, redesigning commercial cooperation. It is meant as a participatory tool for urban co-creation of value chains and resilience.

Financially, an estimated 1.4 million iLEU are to be released within the Urban Innovative Action SPIRE, an amount that totals 50 percent of the online collected local taxes in 2019, respectively 5 percent of total taxes collected from natural persons in the city. Its financial justification was also correlated with the city's users (approx. 140.000).

Conclusions

Open innovation, especially coming from the ICT sector, has the potential of reshaping the entire urban ecosystem and incentivizing local stakeholders to act towards environmental protection, climate change mitigation, social innovation, and economic development. It is a community enhancer, strengthening the ties between citizens and their city, empowering them as co-creators of public spaces, increasing their sense of belonging and ownership of their city.

iLEU reinvents the local identity and tradition of mining, through a smart transition from mining gold and silver minted into coins, towards mining crypto, minted into local tokens of modern economics.

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