

FROM BRAUDEL'S TRIPTYCH TO THE CLOSED LOOP ECONOMY

(Inter alia about the regulatory environment of complementary currency in Hungary)

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ABSTRACT

Kékfrank, the regional currency which was presented at the International Conference on Complementary Currency in Lyon, found followers: the *Balatoni Korona* and the *Bocskai Korona*. These three local currencies and other initiatives attracted considerable media attention in Hungary, so the official Bulletin of the Hungarian National Bank published an article (Helmecci-Kóczán (2011): On trade vouchers called "local money". MNB Bulletin) to evaluate all these initiatives, following – as I will show – a typical mainstream-monoculture money paradigm.

According to Fernand *Braudel*, the traditional modern and global economy has three layers: at the bottom is the infra-economy, or the material life, where the economic life is based on unconscious daily routine. Above that is the market economy in its public form, where the daily transparent market exchanges are restricted to the surrounding area, there are no big surprises, the rules are known in advance. The top layer is the capitalist economy, or as Braudel notes: “the zone of the anti-market, where the great predators roam and the law of the jungle operates”. Braudel’s Triptich scheme gives us a tool to examine the internal characteristics of these essentially different three levels and to outline the middle level, as the operational area of the Complementary Community Currency.

Karl *Polanyi*’s teachings are still or even more relevant in our days. The metamorphosis is going on; the threat to destroy society is in full charge. Polanyi’s work can be very well adapted to reflect the present situation, where money as fictitious commodity is even more fictive than the two other commodities, land and labour. The regulation of it is much more important, due to money being an institution of society, an infrastructure that ensures division of labour, enables the flow of information and material between the participants.

Employing ecological principles based on the works of Braudel and Polanyi, we will argue for a financial framework of a closed or semi-closed loop economy. I will also show how the circular flow of local materials and money become increasingly important in the oncoming peak oil and post-carbon era.

¹ contribution to grammatical finalization by M. ÁBEL

INTRODUCTION

Kékfrank, the regional currency which was presented at the International Conference on Complementary Currency in Lyon, found followers: the *Balatoni Korona* and the *Bocskai Korona* in Hungary. With a short presentation of the regulatory environment we want to show how it is possible (if it is possible at all) to strengthen the grassroots innovation to build a closed loop economy.

Law-makers must realize that while monoculture may increase the efficiency of the agro-industrial production and means more profit for the agro-industry, no benefit is observed for the local population and our civilisation's resiliency will be much smaller. The understanding of Braudel's and Polanyi's views, and the form of existences of Local Money in their work could be awareness binding. Instrumented with this knowledge the legislation will have the chance to identify the right track, find better solutions.

THE REGULATORY ENVIRONMENT OF THE HUNGARIAN COMPLEMENTARY CURRENCIES – HOPE AND CHANGE

Since the introduction of the first local money in 2009, called *Kékfrank* in Sopron, innumerable variety of events occurred: newspaper articles, radio interviews, research papers² and conferences discussed the opportunities for local economic development. As it happens with all new things, it also had supporters and detractors.

The official business press was sceptic, and watched the growing initiatives and implementation intentions doubtfully. The separation of supporters and the opponent's camp was observed all along as well. The 2008 global economic crisis has amplified the social reaction to the LETS (Local Exchange Trade System) and the complementary currency movement. The representatives of the economic mainstream considered LETS to be a game of the losers, while the complementary currency movement was refused with reference to welfare losses³.

The introduction of *Kékfrank* and the preparations of *Balatoni Korona* and *Bocskai Korona* as three local currencies and other initiatives attracted considerable media attention in Hungary,

²see: K. Kohányiová (2012): The „Soproni Kékfrank”: Case Study of a Hungarian Complementary Currency, Thesis at Masaryk University, Bruno, available at: http://is.muni.cz/th/237762/fss_m/?lang=en;id=155658 and I. B. Tóth (2011): The Function of Local Currencies in Local Economic Development (The Bavarian ‘Chiemgauer Regiogeld’ and the ‘Kékfrank’ in Sopron), Public Finance Quarterly 2011/1 (p. 67-78.) Available at: <http://www.asz.hu/en/public-finance-quarterly-articles/2011/the-function-of-local-currencies-in-local-economic-development>

³N.N.. (2011): http://index.hu/gazdasag/magyar/2011/04/07/nincs_eleg_penze_csinaljon_maganak (Article titled: Don't have enough money? Create for yourself!)

so the official Bulletin of the Hungarian National Bank published an article in 2011 by I.N. Helmeczi and G. Kóczán, titled “*On trade vouchers called "local money"*”⁴ .

The authors declared their damning opinions immediately at the beginning of their paper; they wanted to express their opinion in relation to the growing Hungarian media attention surrounding the Hungarian events. They state (quotation): “*Despite the insignificance of local monies on the basis of international experience, local consumers (companies and households alike) may have encountered such instruments every now and then in the recent past. In view of increasing media coverage of the issue, we deemed it timely and necessary to reveal the key facts about these initiatives, and what the trade vouchers – commonly known as “local money” – actually are.*” As we see the authors launch negative hypotheses, their paper is based only on out-dated and bias-selected sources. In the first paragraph (Misconception in relation to the motives behind “local money”) they list the following five explanatory principles, which are considered to justify the new local currency by the initiators.

The first misconception by Helmeczi - Kóczán is: they deny that the traditional financial system would serve the global economy and disregard local interests, claiming that “*privately owned (sic! – Zs.E.Sz.) ... institutions are operated under separate legislation in all countries with a view to ensuring that clients’ interests and claims are protected under the law*”.

The third and fourth explanation, i.e. the inadequate supply of money and the accrual of wealth supported by interest thereby undermining economic growth is rejected saying: interrelations and terms on commodity standard money systems quite simply do not have any relevance in monetary systems based on credit.

The last explanation “*globalisation serves local demand to the detriment of local businesses, thus generating unemployment in the region*” remain unrefuted. Instead, they emphasise their basic arguments: *In modern monetary systems based on credit, money is not “created” by a central actor; therefore it is not in a position to issue money in “wrong amounts*”. According to them, only in war situations could “local monies” prove to be successful in economic terms. They mention only two old examples: the 1848–49 Hungarian War of Independence and the example of the village of Wörgl, about the latter they state: The success may “*attributable to the public project construction works organised then by the local government*”. They do not take in to account the fact that the local currency in Wörgl was initiated by the local government itself! At the end of this chapter (General characteristics of “local money” systems) is a judgment: “*since the 1970s “local monies” cannot be regarded as operating as supplementary money, even on a theoretical level*”.

Helmeczi - Kóczán state that the problem is already solved when “local money” initiatives incite consumption on a local level. Citing Helmeczi’s study: “*private individuals and companies alike primarily spend their money locally, such initiatives alone will not boost the revenues of shops and service provider*”. It may be true, but we should not neglect the locations of manufacturing processes. If we would take it into consideration, we would find that the process of production and consumption, the so-called supply chain is torn apart, the

⁴ I.N. Helmeczi and G. Kóczán (2011): *On trade vouchers called "local money"*, MNB Bulletin, April, 2011,

Available at:

http://www.mnb.hu/Root/Dokumentumtar/ENMNB/Kiadvanyok/mnben_mnbszemle/mnben_mnb_bulletin_april_2011/-koczán_ENG.pdf

end points are far away from each other in space and time. Helmeczi - Kóczán sees the economy not as a network, but as a set of one-step connections. At the same time they refer to the regional division of labour, which means: “*local shops obtain the majority of merchandise from other towns or countries, paying locally for the merchandise, and then transfer this amount (it is the purchasing power, the future viability! – Zs. E. Sz.) to a producer located far away through this merchant*”.

Local farmers, producers are going bankrupt, farm warehouses are empty.

It is worth to compare the German and Hungarian central banks’ working papers to understand the two different attitudes of mainstream thought. The German paper⁵ is written by Gerhard Rösl, published on the homepage of the Deutsche Bundesbank, titled as: Regional currencies in Germany – local competition for the Euro? The Hungarian is the above analysed Helmeczi - Kóczán paper. Both represent the authors’ personal opinions and do not necessarily reflect the views of the central banks. Both became frequently cited sources. The Hungarian paper refers to the German paper twice⁶, unfortunately at the conclusion from calculation of the so-called welfare loss the reference is inaccurate. Rösl points out altogether four times (pages 3, 4, 32 and 33) that “*current economic welfare losses resulting from the issuance of Schwundgeld are negligibly small*”. In contrast, Helmeczi - Kóczán states that “*the German central bank has revealed that widespread application of the scheme would result in considerable welfare losses*” (see: Helmeczi - Kóczán, p. 14).

The Helmeczi - Kóczán article follows (as we have seen above) a typical mainstream-paradigm.

While this paper is being prepared, a new complementary currency legislation in Hungary is in progress. The Parliament is discussing the proposal number T/10903/20. It is the modification of the Act CXII of 1996 on payment institutions and payment services. The forthcoming modification of regulation gives special meaning to the above analyzed paper.

The need for legislation was first raised by the above mentioned Helmeczi-Kóczán paper. This paper is not compliant with the Directive 2007/64/EC of the European Parliament and Council, which was adopted in Hungary in 2009 in the form of Act LXXXV of 2009 on the Pursuit of the Business of Payment Services. Helmeczi - Kóczán missed the definition of trade vouchers among the payment services. They state, that “*trade vouchers are not regulated in any other statutory legislation*”. Because all three complementary currencies in Hungary are trade vouchers, and the numbers of their followers are increasing, they found it necessary in their study to regulate the issuing and the acquiring of trade vouchers. The Hungarian proposal (which, if not corrected in time, goes against the EU Directive) wants to put local money-type i.e. trade vouchers under the scope of money transaction services and thus under the scope of prudential supervision.

⁵ G. Rösl (2006): Regional currencies in Germany – local competition for the Euro? Discussion Paper Series 1: Economic Studies, No 43/2006, Deutsche Bundesbank, Available at: http://www.bundesbank.de/Redaktion/EN/Downloads/Publications/Discussion_Paper_1/2006/2006_12_29_dkp_43.pdf?_blob=publicationFile

⁶ All other references in the subject of complementary currency rather old at the Helmeczi-Kóczán paper.

The proposal would require the originators to bear such a huge amount of costs (administrative and insurance) which they cannot budget through their system. It is important to know that these new types of costs will be revenue for the traditional bank system. Therefore the difference between the two systems, the traditional and the complementary bank system will be even bigger. Any economist would foresee that, in this construct the complementary currency initiatives in Hungary would go gradually bankrupt.

Hungary transposed fully and timely, the Directive 2007/64/EC on Payment Services through Act LXXXV/2009 on the Pursuit of the Business of Payment Services⁷. This opened a free way to use the cash substitutes, such as the introduction of local currencies in 2009. Now with the proposal number T/10903/20 it seems to be over.

There has to be regulation. We are not against it. Good rules are not restrictive, but possible to comply with. Within the framework of the part and the whole harmony it serves the wider community, the common good of a society.

The trouble of the world is not if we do something poorly. The trouble is that we do wrong things. If finally we would do good things, even if poorly, the result would be good, maybe less good. But if we intend to do the wrong things, no matter how well, the result is even worse. This idea comes from J. Agócs, who formulated the system of the vortex-type loop economy, where every loop mutually supports other loops, like in the biosphere as well - all works together organically, in an interdependent way.

Let us now shortly explore, how Fernand Braudel, the French economic historian described the operating field of local money, and how he inserted it into the economy as a whole. We will collect the operating characteristics of local money in from the works of Braudel.

THREE LEVELS OF WESTERN EUROPEAN ECONOMIC STRUCTURE BY F. BRAUDEL

In 1979, Braudel summarized his thoughts in *Civilisation matérielle, économie et capitalisme, XV^e-XVIII^e siècle*. (The English version was published in 1985: *Civilization and Capitalism, 15th-18th Century*.) It is a huge history of economic life consisting of three volumes: I. The Structure of Everyday Life: the Limits of the Possible, II. The Wheels of Commerce and III. The Perspective of the World.

This three-volume work is a broad-scale representation of the *economy of the world* and the *world-economy*. The *economy of the world* means the economy of our entire planet, or as it is called nowadays, the world economy. The latter phrase *world-economy* (with a hyphen in the middle) is more important, it is Braudel's own term, meaning: "...the economy of only one

⁷ EU-Commission Implementing Decision of 16 Dec. 2011(notified under document C(2011) 9197), Available at: <http://eur-lex.europa.eu/Notice.do?mode=dbl&lang=en&ihmlang=en&lng1=en.hu&lng2=bg,cs,da,de,el,en,es,et,fi,fr,hu,it,lt,lv,mt,nl,pl,pt,ro,sk,sl,sv.&val=639990:cs>

portion of our planet, to the degree that it forms an economic whole.”⁸ World-economy has three different features: it occupies a given particular location, meaning that it has boundaries (1), it has a pole and is centred around one particular city, a world city, whose centre can shift through time (2) and finally: it is divided into successive zones, so it is marked by hierarchies of regional economies (3).

In volume no. III. (The Perspective of the World) F. Braudel describes the world-economy as a “...fragment of the world, an economically autonomous section of the planet able to provide for most of its own needs, a section to which its internal links and exchanges give a certain organic unity.”⁹

Braudel’s approach was very unusual in his time, and it is still not fully acknowledged¹⁰. He sees the economy as a house with three stories: the ground level is the material life, or in other words the infra-economy. Economic life is based on this unconscious daily routine. It is the infrastructure of human life, based on local production as well as local consumption. The second floor is the market economy, while the top level is capitalism.

Braudel refutes two widespread views concerning capitalism, namely that

(1) capitalism is equal to the free market economy. Instead, he considered capitalism, as the system of counter-market, and that:

(2) successful capitalists were specialists, where he argued that successful capitalists only refused to specialize. To show his point, he distinguished two different types of economy – “economy A” and “economy B” – “that can be discerned with a bit of care, only through the human, economic, and social relationships they generate”¹¹.

Type “A” is the daily transparent market exchanges restricted to the surrounding area, which “involve no surprises, in which each party knows the rules in advance”.

Type “B” becomes predominant in the upper level, and forms a totally different circulation scheme compared to the public market in type “A”. Braudel refers to English historians who have shown: from the 15th Century the public market was accompanied by a private market (by Braudel’s term, “counter-market”), which flourished in long-distance trade. Braudel compares the past and the present: “The triptych I have described – material life, the market economy and the capitalist economy – is still an amazingly valid explanation, even though capitalism today has expanded in scope”¹². In Volume II. (The Wheels of Commerce) of his Magnum Opus he states: “above the market economy [...] is the zone of the anti-market,

⁸ Braudel, Fernand (1977): *Afterthoughts on Material Civilization and Capitalism*. transl. P. M. Ranum. Baltimore and London: The Johns Hopkins University Press (p. 81), Available at: (<http://www.scribd.com/doc/47156827/Braudel-F-1977-Afterthoughts-on-Material-Civilization-and-Capitalism> , 17.09.2012.)

⁹ Braudel, Fernand (1985): *Civilization and Capitalism, 15th-18th Century*, volume III: *The Perspective of the World*, p. 22.)

¹⁰ This chapter is more or less the same as in my paper presented at the 2012 Conference in Cracow: Zs.E. Szalay (2012): *Community currency from the point of view of the permaculture*, 2012 EAEPE Annual Conference, Cracow University of Economics, 18-21 October 2012.

¹¹ Braudel, Fernand (1977): *Afterthoughts...* p 49.

¹² *ibid*: p. 112.

where the great predators roam and the law of the jungle operates. This is the real home of capitalism¹³.” We should say: the driving force today is the same, but the range, the depth has increased significantly.

After we have briefly introduced the three layers of the civilisation (infra-economy, market economy, and the capitalism from the bottom to the top) and we have distinguished the two types of market (public and private market), it is time to find the field which is the home of the local money and consistent with Braudel’s economic structure: this field is the level of infra-economy organised by market type “A”.

We see and experience only the institutional manifestations of money. We are aware that in each of Braudel’s economic levels we should talk about different moneys. In the following, we attempt to characterize shortly the money of infra-economy, the money of market and the money of capitalism¹⁴. Until now what we described as money function is the most similar to Braudel’s middle level of the currency description.

Because of the novelty of our overview we are asking the reader’s patience and understanding. The following overview draws heavily on the thoughts and the studies of Dr. habil Dr. Csaba Vass philosopher, economist, sociologist and media researcher.

SHORT DESCRIPTION OF MONEY FUNCTIONS IN EACH LEVEL OF BRAUDEL’S ECONOMIC STRUCTURE

The scope of our paper makes it possible to list only some of the characteristics of the three types of money¹⁵. We are convinced that all Braudel-type economy levels have their own well-defined money with unique characteristics.

1. The characteristics of money in the infra-economy: the love-money

The first characteristic of money in the infra-economy: ensures the unity of existence and being (1), unifies the community (2), measures the degree of love. To understand this third feature we should accept that the love means (unselfish) work and network-building (3). The fourth characteristic provides redistribution *between* generations and *within* generations (4). It is a tool to reach a higher quality of life, i.e. above the pure existence (higher than subsistence comfort level) (5). The last characteristic manages and maintains the other two levels, the market economy and the capitalism (6).

¹³ Braudel, Fernand (1985): Civilization and Capitalism, 15th-18th Century, volume II: The Wheels of Commerce, p. 230,

¹⁴ Vass, Csaba (2009): Mammon’s furnace, *Ökotáj*, 41–42. sz. 2009. 114–142. o. Available at: <http://epa.oszk.hu/00000/00005/00026/ot41-10.htm>

¹⁵ Vass, Csaba (2012): Moneys in diverse economies (love-money, market-money, power-money) *Gazdaságok pénzei* (szeretetpénz, gazdasági pénz, hatalompénz) Lectures at the Researchers’ Night in Budapest at CUB, Available at: http://www.kutatokejszakaja.hu/2012/esemenynaptar/esemeny.php?id=831&menu_id=4

To understand this list, we ought to consider how long a market economy would function without reproductive labour force in the family, in the communities of love; and without institutions of mutual services.

2. The characteristics of money in the market-economy: the market-money

The following list of characteristics is valid independently of the type of a money system, that is, a positive or a negative money system we are speaking about. The first characteristic is the information service (1). The second is the division of time and space (2). The third is the regulation of movement of the market-participant (3). The fourth feature is valid only in a positive interest money system: increasing the value added, measured in terms of money. This fourth feature is realized instead of the living quality management (4). The fifth is the accumulation and the distribution of goods, as resources.

3. The characteristic of money in the capitalism: the power-money

The money with the expansion of capitalism has become the tool of power. It may be stated, that where the power has the right, there the right has lost its power. Here, the money is not in the possession of the public.

The first characteristic of money in capitalism: increasing the power added, measured in terms of different market shares (1). The second is the determination of flow direction between the different financial systems (dollar, euro, etc.). (2). The third is the commercial extermination tool (3). The fourth is the non-legitimate power distribution (4). The last characteristic of money in capitalism is the integration of the narcissistic minimal self and the power, which effectuates the despoilment (5).

At the end of the short description of money functions in Braudel's economic structure we want to stress once again, that the so-called love economy is the base of everything, it is the base of the human life. The love economy maintains the market economy; it belongs to that system's axiomatic conditions. The other two levels, i.e. the market economy and the capitalism depend on the love economy. In the love economy the model of Homo Economicus does not work, only the logic of love works here.

In the following, let us see how Karl Polanyi, the Hungarian historian described that great transformation which is meant to strengthen the capitalism, the top level in Braudel's structure.

THE GREAT TRANSFORMATION BY KARL POLANYI

Polanyi was a Hungarian economic historian and economic anthropologist. His main theoretic work¹⁶ is "The Great Transformation" which was first published in 1944; it deals with those social reactions, which took place in England during the rise of the market economy.

¹⁶ Karl Polanyi (1957): The Great Transformation. Boston: Beacon Press.

Polanyi described the situation before the evolution of market economy (i.e. the evolution of capitalism as we would define it using Braudel's term) in his main work. In "The Great Transformation" he states that the principle of use and the principle of gain are the key factors of the economy: *"All economic systems known to us up to the end of feudalism in Western Europe were organized either on the principles of reciprocity, redistribution, house-holding, or some combination of these three. These principles were institutionalized with the help of a social organization which, among others, made use of the patterns of symmetry, centricity and autarchy [...] The motive of gain wasn't prominent until the regulation was strict enough: custom and law, magic and religion determined the individual's behaviour"*.

After the great transformation the market behavioural patterns became dominant in the society. Polanyi said: *"The society-regulated market system transformed to a self-regulated market....The society protected itself against the perils inherent in a self-regulating market-system – this was the one comprehensive feature in the 19th century"*.

Commodities are defined as objects produced for sale. Polanyi noticed that *"Labour, land and money, as essential elements must be organized in markets, but they are not commodities, because they are not produced for sale [...] this type of description is false, all three are fictitious commodities"*. If only the producing and the selling of commodities *"would control the fate of human beings the society would fall apart"*, states Polanyi. With regard to the money, as fictitious commodity, Polanyi believes:

"The market administration of purchasing power would periodically liquidate business enterprise, for shortages and surpluses of money would prove as disastrous to business as floods and droughts [...] We should accept the reality that nature has its own needs and limits; that human beings are not replaceable units of labour, and the money-system is a social creation based on social trust and community governance".

Based on Polanyi we should say: Money is an infrastructural factor and ensures the division of the labour within the community. It enables the exchange of information and material between the participants of the activity trade. It serves the community; it is part of the common property. Not commodity but common property, which is not for sale.

The crucial question is: who regulates whom? The free market produces wreckages, commoditises everything. Not everybody shares this opinion, Garrett Hardin in 1968 has written his essay¹⁷ titled as: "The Tragedy of Commons", which recommends privatization, which is the abolition of common property. Hardin says: *"An alternative to the commons need not be perfectly just to be preferable..... Injustice is preferable to total ruin."*

We ask: Preferable to whom? Could we talk about community and continuation of human life without any common property? If we could ask Polanyi about the local money, he would mention one more thing beside the social defence mechanism, which is very important to understand. It is the substantive meaning of economy. Polanyi is the initiator of substantivism,

¹⁷ G. Hardin (1968): The Tragedy of the Commons, Science, New Series, Vol. 162, No. 3859. Available at: <http://links.jstor.org/sici?sici=0036-8075%2819681213%293%3A162%3A3859%3C1243%3ATTOTC%3E2.0.CO%3B2-N>

the important approach to economics. It emphasized the way economies are embedded in society. This view contradicts mainstream economics. The substantive meaning of economy has independent roots from the other meaning of economy, namely from the formal meaning. Formal derives from logic, the substantive from fact. Polanyi states: “*The formal meaning implies a set of rules referring to the choice between the alternative uses of insufficient means...The substantive meaning of economic derives from man’s dependence for his living upon nature and his fellows.*”

Summarizing this chapter we should say that the interpretation of local money which could be accepted by Polanyi too, and could be a compass for the future for our thinking is the following: Local money should be based on the substantive meaning of economy which defends the social interest, defends the sustainability of community.

Fortifying Braudel’s infra-economy and stabilizing the local communities with their local money-circle has become much more difficult. We should consider that we are already after an even bigger transformation, a global transformation. The metamorphosis is going on; the threat to destroy society is in full charge. Polanyi’s work can be very well adapted to reflect the present situation, where money as fictitious commodity is even more fictive than the two other commodities, land and labour. The regulation of it is much more important, due to money being an institution of society, an infrastructure that ensures the division of labour, enables the flow of information and material between the participants.

In the last chapter we want to discuss the community-level resilience more broadly.

THE ECOLOGICAL PRINCIPLES AND THE FRAMEWORK OF THE CLOSED OR SEMI-CLOSED LOOP ECONOMY

We want to examine the works¹⁸ of B. Lietaer et al. from multiple angles. According to B. Lietaer there are two basic conditions to mention in relation to the resilience of complex systems: interconnectivity and diversity. We believe that it is necessary to speak about resilience from the point of view of the communities. The resilience requires communities to have a certain degree of independence and self-sufficiency. The operation of the complementary currency system in a community strengthens the sovereignty of the local community, but only to the extent of self-service, where and when the material and financial circular flow remain within the boundaries of the community.

¹⁸ B. Lietaer et al (2010): Is Our Monetary Structure a Systemic Cause for Financial Instability? Evidence and Remedies from Nature , Journal of Futures Studies (April 2010), Available at: http://www.lietaer.com/images/Journal_Future_Studies_final.pdf

The economy could be described as an interaction-network between our outside and inside nature¹⁹. Our outside Nature (the natural and the built environment) surrounds us and our internal nature expresses our human essence. The human activities are changing the environment, in the last centuries they are rather harmful. Anybody doubting the validity of this statement should imagine something beautiful in Nature. Is there any sign of human activity? Nature without human interference is beautiful, with it rarely.

The industry, the whole human activity serves the consumption of the man and for such a purpose it uses the resources of the Nature and transforms them. This connection is one-sided: the natural resources are the input for the industry, the Nature gets into worse and worse conditions, while from the industrial output it gets the worst part: it becomes a waste container.

The biosphere is a self-supporting system, where four sustainable flows could be described, each presume and determine the other. These are: water, carbon, nourishment cycles and soil maturation. Every kind of consumption is limited in a finite system, not only the growing consumption, as we used to think about it. If the consumption is one sided and uses up the supply of the resources from that finite system, it does not countervail in it. In any finite system the permanent existence requires the nourishment never to end, the outputs of material circles never to accumulate. Any output should be an input. The one-way flows, i.e. from mines to carbide container, from the hill to the bottom of the sea, cannot be sustainable in long term.

The management of human activity should shift to another paradigm: until now we have been producing only for the needs of Man, this behaviour used up the resources, caused wastes and indigestible materials for the Biosphere.

It's time to introduce a new communication and behaviour system between the Man and the surrounding environment, based on the closed loop model. This model has four characteristics:

1. It works as a biosphere imitator
2. The human activity should also serve the needs of Biosphere
3. The linear processes should be transformed to cyclic flows, the waste formation should be diminished
4. The extent of the human activity should depend only on flow-type energy instead of stock-type.

The last one may sound a bit strange. Before the industrial revolution our civilisation used mainly flow-type resources, like solar energy, energy from wind, water, and only some from coal and

¹⁹ This chapter builds on: Szalay, Zs. – Dobos, I. (2011): The Closed Loop Model by Regional Economics or How Big is the Ants' Footprint? Third Annual Conf. on Globalization, Sustainability and Development, 2011, Hungary. Available: http://unipub.lib.uni-corvinus.hu/442/1/Dobos_Szalay_2011.pdf

wood. These formed natural limits to the growth of the population and the production as well. But the civilisation two hundreds year ago has found a very huge stock-type resource: it was the fossil energy, a concentrated form of the last 200 thousand years' flow-type solar energy. The success of industrial revolution was based on the fossil leverage, the civilization got another 200 years to continue its system of communication and behaviour with the Biosphere, while polluted it and used up its resources. At that time Malthus was right, as P. Krugman stated²⁰. After the industrial revolution the man used the above mentioned four sustainable flows of the biosphere (water-, carbon-, nourishment cycles and soil maturation) much more. It is time for a new, or better to say: an industrial counter-revolution.

The human activity and the biosphere should form an integrated closed loop nutrition circle from now on, where the human activity satisfies the needs of biosphere and vice versa. Instead of tailoring the nature, namely the Biosphere, the human activity should copy and imitate the natural processes. The flow of materials, the logistic system should be similar to a nourishment cycle, as resilient metabolism.

The phrase “cradle to cradle” created by Walter R. Stahel, spread by McDonough - Braungart expresses this requirement in a picturesque way²¹.

The closed loop approach is already used by other areas, like: regenerative economy, bio-mimetic approach, circular economy, cradle to cradle model. In the linear economy the process is the following: take the resources, make the product and at the end dispose the waste forever, polluting the Nature. But in the regenerative model the technical and biological nutrients should circle in an integrated system, each circle supports the other and there is no waste: money is circulating with it, accordingly.

The concept of regional material and financial circular flow will be more important with the oncoming peak-oil and post-carbon era. We should describe the outlines of closed or semi-closed loops economy more precisely in time.

²⁰ Krugman, P. (2008): Malthus was right! NY Times, The Opinion pages, 25-3-2008, Available: <http://krugman.blogs.nytimes.com/2008/03/25/malthus-was-right>

²¹ McDonough, W – Braungart, M (2002): Cradle to Cradle. Remaking the Way We Make Things, NPPress, 2002.

SUMMARY

We offered a brief insight into the legislation of complementary currencies in Hungary. We revealed that the regulatory environment creates obstacles in this type of small-scale local economy of Hungary. With the help of two historians, F. Braudel and K. Polanyi we tried to find the theoretical necessity of this type of economy: the infra-economy and the public market are those two concepts which describe the operational field of Complementary Currency. They provide the social network, which prevents the society from falling apart. We have defined different monies in Braudel's structure. Accepting their existence, we looked for a new paradigm which would be a change in behavior, so we outlined the framework of the closed-loop model.

KEYWORDS

Braudel's Triptych, closed-loop economy, Karl Polanyi, fictitious commodity, ecology, fossil leverage

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