Contributions of Social Currencies to Alternative Short Food Supply Chains

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CORE IDEAS

Social currencies provide many of the conditions to approach producers and consumers.

It allows consumers to meet their basic food needs without using conventional money.

It enables the added value of exchanges to remain local.

It enables cooperative alternative compensation systems for producers.

It reduces the dependence on external inputs in the territories.

ABSTRACT

Social currencies are monetary instruments that provide networks for goods and services exchange parallel to the conventional economy in which people's needs are met using resources that are available in a territory, without requiring conventional money. Alternative short food supply chains are initiatives of grassroots innovations that reduce not only physical but relational distance between consumers and producers of any type of products. This research aims to identify the contributions of social currencies to create short food supply chains in the territories. For this, a case study is exposed: the consumption groups and community supported agriculture (CSA) of RASTRU from Asturias, northwest Spain, and its social currency Copin. Through surveys and participant observation, it is evidenced how social currencies generate proximity and trust-based relations between consumers and producers based on inclusion and fair access to food for people.

THE PRECARIOUSNESS of the global agro-food regime to provide access to food to the world’s population and a sustainable livelihood to agro-food producers without negatively impacting the environment constitutes a problem for sustainable development. Food sovereignty is a framework of action that intends to bring the food systems and its resources under the control of the actors present in the territories, especially those whose livelihood relies on the land, to meet the food needs of people considering the biophysical limitations of the ecosystems. Alternative short food supply chains are mechanisms through which the actors present in the territories have the chance to get control over the food systems and its resources to meet the food needs of people by generating proximity among the actors composing the agro-food systems, thus enhancing social interaction and reducing the ecologic impact.

Social currencies are innovative monetary mechanisms that create parallel circuits of value by allowing people to offer and purchase goods

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and services without conventional monetary compensation by using a common agreed-upon means of exchange. The currency is also a tool to heighten socially undermined occupations providing an exchange value to individual talents and skills, and encouraging practices depreciated by the market economy within a territory.

In this research, the possibility of using these monetary innovations as tools to shorten food supply chains and advance on the path toward achieving food sovereignty is explored. It is assumed as a departure point that social currencies can bring not only the material mechanisms to facilitate the approaching of consumers and producers, but also that it provides other symbolic assets such as trust, reliability, and relational proximity, essential to develop an alternative to the competition-oriented and individualistic global agro-food regime.

The purpose of this paper is to understand the way and the limits of a social currency to shorten food supply chains and hence to contribute to sustainability, through the examination of one case study: RASTRU, the Asturian Network of Barter Communities (Red Asturiana de Comunidades de Trueque, in Spanish). In this sense, in the second section, a brief conceptual review on social currencies is presented; in the third section, conceptual considerations are presented for ‘short food supply chains’; and in the fourth section the field work on the case study is addressed, with the corresponding analysis of the data collected. Some conclusions are provided in the last section.

**SOCIAL CURRENCIES**

In this section, the main features of social currencies will be developed beginning with a definition and a brief historical review in the first part, followed by some considerations on the contributions of social currencies to sustainability in the second section, and finishing with a brief characterization of the most relevant types of social currencies. Social currency is understood here as (i) a non-traditional means of payment (Lietaer, 1998, p. 41) that (ii) connects unused resources with unmet needs (Lietaer et al. (2012), p. 18) (iii) to create new circuits of value (Seyfang and Longhurst, 2013, p. 1).

**Non-traditional Means of Payment**

Social currencies are born as a criticism to the conventional money system issued by central banks (modern money). The main criticisms from these new currencies to the conventional monetary system can be enumerated as follows: (i) creation of value from the very use of money (interests), (ii) money as a speculation tool, (iii) creation of value only from scarcity and, as a consequence, (iv) participation in the systemic economic crisis.

These criticisms start from considering money not as a “taken for granted paying mechanism” but as a socially constructed agreement that has a specific historical background. The agreement relies on citizens to accept using a single piece of paper or metal as a means of exchange to acquire goods or services. This pact is legitimized when the creation of money is centralized in the modern nation-states, and institutions are created to control and supervise that process.

Only recently, people are starting to question this “taken for granted paying mechanism.” In the context of financial crisis, they are getting more aware of the role that banks are playing and how they have gained control over the money creation process. They are also aware of its consequences in terms of increasing inequalities, concentrating wealth, and excluding the poorest from access to resources. Different social movements have denounced this situation and provided solutions.

The criticism of the current global financial system leads to the following question: if current legal tender relies on the agreement between government-banks and citizens, why could an agreement not be created around new values, such as those of social currencies? This is how social currencies constitute an alternative means of payment to the bank-created legal tender.

**Connecting Unused Resources with Unmet Needs**

The global market economy has values such as competitiveness and productivity that determine if some sectors are more or less attractive to investment. Transactions based on the exchange of conventional money exclude economic areas that are not considered profitable or attractive to investment. There are activities traditionally undervalued by a market economy like the “care economy” that is a feminized sector including babysitting, housework, nursing, etc. In other cases, lots of capital previously invested in productive sectors (i.e., small scale agriculture) has flown to speculative markets. Activities such as arts and handcrafts also lose value from transnational mass production based on outsourcing to cheaper labor markets. However, demand in some of these fields still grows, especially in agricultural products.

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1. “Modern” conventional money was created in the late Middle Ages when gold owners started using receipts emitted by goldsmiths to purchase services and products, maintaining gold stored in a safe place (which contemporarily is known as a bank). The reliability on the goldsmith allowed receipts to become a trustworthy means of payment and value store. According to Lietaer (1998) from its creation, this pact of reliability has been “altered.” Banks, with the legitimation of the newly created nation-states, started issuing more “receipts” (bonds, debt securities) without an actual value support (precious metals or other goods) based on the expectation of new future incomes: debt interests. The “fractional reserve system” allowed banks to create new non-backed money— also called fiat money— that permitted more liquidity and less transaction costs for the depositors, and more profit for banks charging for storing and lending. While banks gained the monopoly of paper money emission (legal tender), governments, in turn, profited from money printing to finance the wars that shaped the modern nation-states.

2. Especially the economic institutions from the 20th century (Bretton Woods System, Gold Standard brake).

3. Reforms aimed at bringing more autonomy to the banking system to increase assets’ liquidity, reduce government’s control (deregulation), and create institutions to bring liability to the system itself (insurance companies, rating agencies). In this way, fiat money gets institutionalized and a market of non-backed debt securities is inaugurated, leading to speculative movements.
Table 1. Contributions of social currencies to sustainability according to Seyfang and Longhurst (2013).

<table>
<thead>
<tr>
<th>Economic sustainability</th>
<th>Environmental sustainability</th>
<th>Social sustainability</th>
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<tr>
<td>Eco-localization: because they build local circuits of economic value and prevent wealth ‘leaking away’</td>
<td>Reduction of ecological footprints: more localized consumption patterns and import substitution.</td>
<td>To enhance social aspects of wellbeing: by rewarding acts of neighborly support which promotes a sense of community, building trust and social capital among disparate social groups.</td>
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<tr>
<td>Revalue of non-market economy: informal work-skills exchanges, voluntary activity and domestic labor are valued, recognized, exchanged and rewarded due to social currency.</td>
<td>Sharing economy: Social currency facilitates resource-sharing and provides an accessible reusable market for unwanted goods through new social institutions for collaborative consumption and sustainable ‘product service systems’ to form.</td>
<td>Mental health: These currencies allow people to meet their psychological needs (such as for recognition, belonging, self-esteem, sense of purpose) through social interaction.</td>
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<td>New way to meet needs: They offer a supplementary means to access goods and services for those who might otherwise be financially excluded or unable to find formal employment.</td>
<td>Pro-environmental behavior: Some currencies directly address pro-environmental behavior, for example rewarding citizens who participate in recycling programs, or who purchase more sustainable products or use public transport.</td>
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In some cases, where cyclic economic crises occur, there are serious concerns about the availability of conventional money to address various social needs (unresolved by welfare state), and simultaneously high rates of unemployment or informality. The social currencies appear as a way to take advantage of the present resources that are not valued, and often excluded, in the market economy (i.e., unemployed workforce), to address social needs that are not completely addressed by the market economy (i.e., caring activities).

Social currencies can tackle scarcity by providing liquidity where the conventional currency is in short supply. However, unlike these currencies, social currencies do not intend to be an “all-purpose currency.” In other words, they are normally designed and implemented to address a specific social need, but in practice, and as will be explained later, they potentially provide benefits in multiple dimensions of sustainability (see “Social Currency and Sustainability”).

To Create New Circuits of Value

When goods or services that are not commonly traded acquire an exchange value, and someone accesses a good or a service one would not have with conventional means of payment, a new circuit of value is created. Circuits of value are not only made between two people who trade but at a territorial scale. New territorial circuits of value refer to (re)localization of economic activities generating added value in a proximity relation with consumers and producers. (Re)localization aims not only to (re)activate local consumption and production chains but to reduce ecological impacts of long trade chains, especially in terms of the carbon footprint associated with transportation in the context of a globalized economy.

Social Currency and Sustainability

Social currencies are considered a tool that aims to develop new monetary systems toward sustainability (Boyle and Simms, 2009), promoted and developed by social and solidarity economy actors and grassroots innovations. The characteristics of the current monetary system, summarized in the first section of this work, have implications for sustainable development. The notion of growth is one of the most problematic elements, which brings social currencies closer to the discourses of degrowth. However, even if the vision of sustainability of social currencies is sympathetic to the idea of degrowth, their contribution in this sense is rather limited (see Dittmer, 2013), as their role in the economy so far is complementary.

Lietaer et al. (2012) identifies five “unsustainabilities” of bank-debt money. They are interrelated to each other, and consist of the pro-cyclical character of the money creation process which amplifies both the upturns and downturns of the business cycle, “the systematic encouragement of short-termism because the interest feature on money programs ‘rational’ investors to discount the future,” “a compulsory growth due to the mechanism of compound interest,” “concentration of wealth,” and “a devaluation of social capital.”

Social currencies have provided mechanisms to address the unsustainabilities of the monetary system, among which the absence of interests—or the negative interest—stands. However, there are many ways in which social currencies contribute to sustainability. Seyfang and Longhurst (2013) identify the actions by which social currencies contribute to the three components of sustainability: the economic, the environmental, and the social dimensions (Table 1).
credits, (ii) local exchange trading systems (LETS), and (iii) HOUR currencies (fiat money). There is a type of complementary currency that is mostly profit and business-oriented; this is the convertible currencies which are not included in this classification since they have no ‘social’ orientation. They are all ‘ideal types’ because most currencies combine features, i.e., mutual credit + convertibility; convertibility + fiat money; mutual credit + fiat money, etc.

**Service Credits (Time Banks)**

This is the most widespread type of social currency and is based on the exchange of time units among users who provide or require a specific service. When someone provides a service, a time credit in their favor is created, and they can use it by purchasing a service from another member. The most common time of service credits are the time banks in which the credit unit is 1 h. In this system, everybody’s work unit has the same value regardless of their social or economic conditions, based on the premise that everybody’s time is of equal worth. Time banks have no access restrictions, and no need for initial investment or special qualifications.

Time banks give value to non-recognized talents from those excluded and marginalized in the market economy. In other words “reciprocal exchanges aim at providing help to the elderly, to the sick, to women as well as to any persons in want of help and in capacity to provide services” (Blanc, 2011).

Time banks are normally implemented by non-profit associations; however, they are starting to receive attention from local governments with whom they are creating partnerships. Also, local governments are implementing time banks as a part of their social policy programs.

The main criticism of time banks for sustainability is their limitation to the exchange of services, given the hardship of assigning a time unit to the exchange of goods. Another limitation is related to the “under-professionalization” that raises questions about the quality and appropriateness of the services exchanged; simultaneously, it warns skilled participants to offer services that are appreciated, and well as remunerated, by the market economy (Dittmer, 2013).

**HOUR Currencies**

HOUR currencies are those created with no backing from a mutual credit or legal tender, and usually are paper based and locally distributed. They are all ‘fiat’ systems in that the currency is issued by some kind of local ‘authority’ that guarantees the validity of the currency and in many cases backs it. The value is usually defined by confidence in the administrator(s) to the point that changing the “coordinator” may deteriorate the whole exchange circuit. The most renowned HOUR currency is Ithaca Hours, which is backed by the promise to supply goods and services.

The main criticism to HOUR currencies is related to the risk of high inflation due to the centralized money creation process. The system includes a “Board of Directors” that are the equivalent to a Central Bank. Although the decisions are handled in a democratic way, through the “Board of Directors,” it is a tricky task to decide how much currency has to be issued to control inflation and avoid the loss of purchasing power. Besides, other problems have to do with the over-accumulation of HOURS by businesses that cannot easily access their minimum supplies through the available offers (Dittmer, 2013).

**Mutual Exchange (LETS)**

Mutual exchange is the second most common type of social currency after service credits. It is largely explained since the case study belongs to this category. The currency is created at the moment when two members exchange goods or services; one of them has a credit in the system and the other one obtains a debit. As the currency is created in the act of purchasing, buyers are supposed to earn credits by offering products/services or starting with negative balances in their accounts. In some cases, legal tender can be used to acquire the social currency, at different ratios but usually at 1:1.

The value of the currency depends on mutual trust and transparency; that is why the accounts are normally disclosed and everybody can check the other’s accounts. The most common mutual exchange system is the LETS, Local Exchange Trading System or Scheme, created by Michael Linton in Canada in 1983 and spread primarily to the UK, New Zealand, and Australia.

Some of the LETS are issued in paper (as regular notes) but they risk counterfeiting; therefore, most of them are based on online digital platforms that permit more controlled counting and transparency. Additionally, the web sites are used as directories where members can find offers and demands, and interact with other members. The most used software platform for mutual exchange is the CES (Community Exchange System; www.community-exchange.org; accessed 7 Sept. 2017), created in 2000 in South Africa, which today gathers 808 exchange groups worldwide, according to their web site.

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4Ithaca HOURS was created by Paul Glover in the city of Ithaca (New York, USA) in 1991. The currency is aimed at boosting local economic activity by encouraging locals to spend their time and money locally. The system is based on a newspaper in which the offers of products and services traded in Ithaca HOURS are published. Each advertiser receives four HOURS when its announcement appears in the newspaper; they can then be used to purchase someone else’s offer. One HOUR is equivalent to the payment for 1 h of work that is USD10. HOURS bills can be found in denominations of two, one, a half and one quarter of an hour. Advertisers simultaneously accept HOURS and dollars, and they control what percentage of the price goes in each currency. A percentage of 9.5 of the total of the HOURS issued is donated to local non-profit organizations.
Most benefits of LETS schemes are related to community-building, with contributing individuals able to develop a wider network of friends, develop deeper friendships, and to foster self-help networks. Additionally, they help unskilled people to gain knowledge that may contribute to employability. Indirectly, LETS also contributes to employability by boosting self-confidence and enhancing self-esteem (Williams et al., 2001).

Problems of LETS include excessively negative credits in some accounts that effect confidence in the exchanges, lack of involvedness of the majority of participants and a lot of engagement of a few ones, or a single individual, whose role is crucial to the continuity of the system.

**SHORT ALTERNATIVE FOOD SUPPLY CHAINS**

In this section, short food supply chains are presented as a strategy that contributes to food sovereignty within food systems. For this, first, a working definition of food sovereignty is provided. Then, the importance of the concept of short food supply chains, and its main challenges, are addressed. Next, short food supply chains are discussed in terms of cultural, organizational, and material dialectics. Finally, its relation with social currencies, in theoretical terms, is presented.

The idea of new alternative short food supply chains responds to the need not only related to relocalizing and bringing food back to the local space, but also to reinvent the values and orientations around which the food system is operating, in the direction of achieving food sovereignty. Food sovereignty (based on Wittman, 2011) is here understood as the correct and actual possibility of people from a territory of controlling the food systems on which their livelihood is based from an agro-ecological perspective.

The creation of alternative food supply chains is a key element to bring the control of food systems back to the producers and the territory’s actors, considering the importance of distribution channels as an essential component of the corporate food regime (Soler and Pérez, 2013). Vertical production, one component of the global agro-food model in which corporations absorb the added value of agriculture activities, leads producers to depend on the agro-food industry, excluding their participation in the decision-making regarding production conditions. This logic may also occur with ecological and localized products to the extent that agrofood producers cannot control the distribution phase of the agro-food system.

Short food supply chains lead producers to avoid the crescent cost of technological inputs and to skip prices and quantity restrictions stated by corporations that control the access to markets. Low prices and considerable amounts of homogeneous food are opposed to productive diversity, biodiversity management, and the need for stable incomes of agro-producers. In this way, short food supply chains provide some of the benefits of localization (proximity, fair trade, quality), but emphasize the desire for the improvement of the producers’ conditions in the global agro-food context.

Proximity, in terms of short food supply chains, implies not only a market in which there is no more than one agent between the final product and the consumer, but a market in which producers and consumers have the chance to decide what they want, how it is produced and how much it should cost. Thus, this proximity is not strictly correlated to the physical distance, as relocalization discourses propose, but to the relationship between producers and consumers that has to be direct, trust-based and agreed by both parties. As a consequence, the producer (and seller), not the retailer, has the possibility of obtaining a larger portion of the added value, and the consumer acquires a trustworthy product whose origins are known (Di Masso, 2012, p. 71).

The creation of short food supply chains faces a lot of difficulties. First, it is important that producer values match with those of consumers, considering consumers’ different motivations to join a short trade circuit, including ecological awareness, health and body care, and concern for inequalities aroused from the agro-food system, among others (Soler and Pérez, 2013). There are some debates about how to reconcile the interests and possibilities of producers and consumers participating in short supply chains. In terms of production offerings, the possibility of a constant food supply is defined by seasonality so consumption must be adjusted to the peasants’ harvest calendar. In terms of price, it is not easy to define a ‘fair’ value of production, that is to say a price that values the efforts to provide a quality product but is realistic to the actual purchasing power of consumers. This implies that the creation of short food supply chains is a challenge of great complexity for local food systems’ actors.

Short food supply chain creation consists of at least three elements: (i) limitation of physical distance, saving energy and money; (ii) proximity between the producer, in his or her own way to produce and, as a consequence, trust on production quality; and (iii) guarantee that the added value remains in the rural space (Di Masso, 2012, p. 73).

Following the Whatmore (1995) model, short food supply chains propose stronger relations between components of the agro-food systems territorially defined considering proximity and trust-based relationships. It implies reducing the importance of the retail sector, and bringing household consumption closer to the agro-breeding producers.

According to Soler and Pérez (2013), the possibilities of creating alternative agro-ecologic supply chains depend on the resolution of three dialectic tensions: cultural, organizational, and material. The cultural component is related to the priority of values that motivates and defines an alternative supply chain. The organizational component has to do with the types of relations between actors and their arrangements. The material component deals with biodiversity management, agroecosystems design, and production modes and transport. The elements of these components are shown in Table 2.
The authors clarify that these elements are not completely explanatory of all the dynamics that influence the possibility of alternative short food supply chains. Nonetheless, they are guidelines to understand the main tensions surrounding its emergence. While on the left side are elements based on values of competitiveness, individualism, consumerism, and commodification; on the right side alternative values such as proximity, ethical consumption, trust, cooperation, and awareness of ecological limitations prevail.

The contribution of social currencies to short food supply chains depends on the type of social currency: service credits, mutual credit, or HOUR currency. In the case of service credits or time banks, people can earn time credits through working hours in other people’s gardens or farms. In this way, social currencies can encourage people providing time and skills for agriculture to carry out work that would not otherwise be done. In turn, workers can obtain time credits to access other services offered in the network. For example, two working hours in a garden may be exchanged by 2 hours of language teaching. Cooking services can also be offered in time credits, compensated with other time-equivalent services. Nevertheless, concerning basic needs, it is not easy for time banks to create or help create short food supply chains considering that they are basically concerned about service exchanges. Service credits do not allow other types of non-individual initiatives such as community or collective projects, nor products exchange.

In turn, LETS and HOUR currencies have a larger potential to create or improve short food supply chains. Mutual credit, as was already mentioned, permits goods and services exchange within a network where social currencies circulate. The currency is created at the time of exchanging a product or a service among two people, one of them has a credit in the system and the other one gets a debit, and the credit can be used to purchase other products and services offered in the network. Food producers may obtain different benefits trading with social currencies; for instance, increasing customers or local access to other inputs they require for producing, while other more complex arrangements may include exchanges of working time for products. In principle, any person may have access to food to the extent that she or he has any skill or product to offer.

Short food supply chains question the meaning of ‘market’ itself from economics. According to Renting and Marsden (2003), the emergence of new food markets indicates that “short food supply chains are not the result of some kind of external, elusive ‘free market’. They result, rather, from the active construction of networks by various actors in the agro-food chain, such as farmers, food processors, wholesalers, retailers, and consumers” (p. 339). Initiatives involved in short food supply chain scope include: direct selling at the farm, veggie boxes, consumption groups, ecologic consumption groups, community gardens, producers markets, among others.

RASTRU: A CASE STUDY FROM ASTURIAS (SPAIN)

This section contains the main elements of the field work of this research. First, some methodological considerations are presented, which include surveys and participant observation. Second, the main features of the case study, relevant for the purpose of this research, are examined. Next, the analysis of the collected data is conducted. Finally, some observations from the previous analysis are provided.

In an attempt to identify the possibilities and limitations of social currency to shorten food supply chains, the case of RASTRU was selected considering two elements. First, it is the only case I could identify where the main goal of the currency is to achieve food sovereignty through relocalizing food production and trade. Second, it was operating on a
continuous basis through organic food markets, one of the most important strategies for shortening food supply chains.

**Methodology**

Participant observation is the methodological approach selected for this research and it is complemented with a survey. Concerning desk research, official reports, newspaper articles, and the social currency websites were also used as information sources. The participant observation included semi-structured informal interviews with main stakeholders as the method used to collect agents’ impressions and expectations. The tools that were used for the participatory observation were a field diary where I registered the facts and my impressions of all the case studies, and photographs of the main activities I was involved in. In the interviews the opinion regarding each person’s own experience with social currency, and the perception of change in terms of the dialectics that shape the transition toward short food supply chains is solicited.

Survey questions were asked through an online questionnaire facilitated by Google Forms and Google Drive platforms. Surveys links were sent through the social currency’s official communication platforms. Participation in the survey was totally voluntary and anonymous. As the mechanism for collecting the surveys relied on information technology platforms, there might be underrepresentation of non-skilled persons on informatics or people not accessing information and communication technologies. The 65-person sample measured was composed of social currency users, out of a total of 1032 users. The questionnaire included a total of 33 questions. The qualitative variables that the questionnaire intended to address, based on Soler and Pérez (2013) and summarized in Table 1, were: meeting basic needs, ethical and political motivations, stability and resilience, horizontality and cooperation through agreements, trust-based guarantee, relational and physical proximity through direct contact, distribution of production, respect of seasonality, and environmental limitations of local agro-ecosystems. Questions about age, income, amount of currency monthly exchanged, sex, and occupation were also conducted.

**What is RASTRU?**

RASTRU stands for Red Asturiana de Comunidades de Trueque or ‘Asturian Network of Barter Communities’ in English, the organization that created and manages Copin, a social currency which seeks to improve ecologic agriculture, social inclusion, and proximity production in Asturias, northwest Spain. RASTRU, according to the official website, “is an alternative economic system based on indirect barter of goods and services between individuals, companies, or associations without money. It allows everyone to contribute to the common good by offering their talent, resources, and skills to the community and to meet their subsistence needs without the restrictions that unemployment and shortage of money currently impose” (italics added by the author).

RASTRU was created in 2012 by already existing local social projects from Asturias. The two funding associations were Partycipa, an organization located in Oviedo that promoted citizen participation projects through local assemblies; and Proyecto Fresneda, from La Fresneda, that provided free access to social services in a local health center. Thus, the project started as a territorial initiative that aimed to include the whole Asturias autonomous community. It is structured through local barter communities, also called ‘nodes’, that have autonomy to control exchanges, create markets, and manage social currency. It attempts to strengthen links between Asturian neighborhoods, villages, and towns. There are currently eight nodes which are located at Pruvia, Paraiso neighborhood in Oviedo, Gijón, La Pola, Siero, Lugones, and La Fresneda, all in urban and peri-urban areas, except for “La Fresneda” and “Cabranes” that are two rural zones.

What they define as an indirect barter is nothing more than a mutual credit system in which currency is created at the moment of exchanging a service or a good. The one who buys, gets a negative balance in their account (debit) and the seller gets a positive balance (credit). There is a ratio exchange of 1:1 between Copin and Euros for people to buy Copinos; however, they cannot be changed back to Euros. Nowadays, RASTRU has 1032 members in eight nodes spread across Asturias (see Figure 1). RASTRU is based on the Community Exchange System platform where all the transactions and accounts are registered.

Nodes have the chance to decide the destination of the self-taxation system of Copin through their Open Councils. RASTRU, unlike other mutual exchange systems, has a taxation system that allows social investments and a basic rent for the most vulnerable people. It consists of a tax which takes 8% of each transaction (4% from the “seller” and 4% from the “buyer”), and it goes directly to accounts of the various Open Councils that integrate the network. An Open Council is a place of dialogue and debate where anyone from the community (not only RASTRU) can participate in periodic meetings to decide how all the collected Copinos are used for the common good. So far, different kinds of activities have been

Fig. 1. Nodes of RASTRU– Asturias in Spain. Author’s creation based on Google Earth caption.
covered with the available Copinos such as English lessons for those who are unemployed, workshops to stop smoking, entrepreneurship initiatives, or solidarity income. The individual credit limit in the system is −50 Copinos.

Solidarity income is a monthly allocation that aims to cover basic needs of economically, physically, or socially disadvantaged people from the nodes. However, the support is not limited to providing Copinos, but also to encouraging projects and proposals for the integration of these people into RAstrup, where families or groups can become self-sufficient and meet their basic needs in Copinos. The amount of the income depends on the size of the family and their situation. So far seven families have benefited from this subsidy. Then, Copinos can be used to purchase food produced by the local ecological agro-food producers of RAstro through the consumption groups or to access other services or goods offered in the network.

To boost the circulation of the currency, and avoid one user retaining most of it, the different producers included in the network agreed on complementing each other instead of competing. Besides, producers may access a large set of services offered by non-professionals within the network, including education, caring activities, housework help, direct labor, aesthetic services, among others. And they may purchase other non-agricultural goods also offered by non-professionals, such as handcrafts or homemade derivatives (bread, jam, sweets, etc.). Other assets, such as transportation, can be partially afforded with social currency (assuming the cost of the fuel in Euro). In all this process, creativity and curiosity are crucial to find innovative ways to connect the present resources and needs.

**Ecologic Consumption Groups**

Each node is in charge of developing activities to improve the economies of the members, and their social links within the community and with other territories. At RASTRU, they have opted for ecologic consumption groups that are supplied by community supported agriculture–based production systems or by local ecological producers accepting social currency.

Consumption groups are composed of individuals and families that are organized to collectively buy a certain amount of food from local and ecological producers. In RASTRU, there are approximately 30 families in the consumption groups who consume products every week equivalent to 30 to 40 Copinos, and other 10 to 15 families who occasionally participate. There are eight suppliers, including professional farmers and artisan producers from which five are members of RASTRU and who exchange their production consisting of fruits and vegetables 100% in Copinos. The other three suppliers are local derivatives’ producers (olive oil, cheese, yogurt, and cider) who charge in Euros. Unlike veggie boxes, in the consumption groups each person chooses what and how much they want to buy from the weekly list of products. The main provider has a label of organic production validated by European Union standards.

All the transactions in the consumption group are done in social currency. About 60% of the consumers every week exchange Euros for Copinos that are used to pay the suppliers of derivative products. 40% of the consumers pay in Copinos which are used to pay back the other suppliers. The participation of consumers paying in Euros is relevant to maintain diversity of products (non-perishable food items). Suppliers accepting 100% Copinos use social currency to purchase other local food supplies and eventually to pay work time in Copinos.

Consumers from the group have to obtain Copinos to access the weekly food ‘basket’. One way is getting a credit from the system that allows users to obtain a negative balance with a maximum of −50 Copinos; another option is earning Copinos either selling goods or services, besides the ‘solidarity income’ already explained, or exchanging Euros at a rate of 1:1.

One last option, when someone has an account in the limit deficit or is not able to obtain Copinos either by the solidarity income or offering goods and services, they can exchange work time at the farms. The farmer pays a Copin salary per worked hour (10 copinos per hour) that can be used to purchase from the consumption group. Normally, work time at the farm does not exceed 4 h per day. If it is the case, the farmer and worker agree on social security and other legal requirements.

For the logistics at consumption groups, there is one person in charge of coordinating demand and supply, centralizing the orders, and organizing the deliveries at a meeting point. This person is responsible for uploading the accounts to the CES. They have a salary of 150 Copinos afforded by a monthly contribution from the consumption group’s users.

**Community Supported Agriculture**

The tax in Copinos’ transactions can also be used for community supported agriculture (CSA). In this case, part of the value coming from exchanges between members of a community are used to boost an individual or collective initiative aiming to set unused lands productive through agro-ecologic techniques. In other words, the communities’ budget is agreed to be invested in a project for the common benefit. Considering that the number of people eager to work in the farms was increasing, the assembly of RASTRU’s node in Pruvia decided to devote part of the tax collected to land reactivation for people who already acquired agricultural skills through the work at the farms.

To start, the association searches for unused lands and agrees on cession contracts for a period of time of at least 2 years. A credit of about 500 Copinos is given to the new farmer in their CES account, which can be used to access goods from the network exchange and to pay a salary to people willing to earn Copinos doing farm work. Before starting the seeding it is discussed within the network what can be produced to not be in competition with other producers assuring the profitability and complementarity of the initiative. Later, production from the new farms is sold in the consumption groups to cover the credit in the system. However, producers can also sell in regular markets in Euros, whereas that is sold directly to the consumer.
The new production complements the already present ecological food supply within the Copin economy, where the supply chains already exist and revolve around the social currency. It also enriches the local ecologic food supply that, at fair prices, reaches those who cannot afford ecological products and those who are not yet involved in social currency, encouraging them to participate. Besides the economic direct benefits for farmer and consumers, other environmental effects concerning ecologic soil restoration and social inclusion are favored.

**Data Analysis**

Five out of the thirty-three questions that composed the survey conducted to RASTRU’s members are presented in this section. They account for the most representative elements from the transition to alternative short supply chains described above. The first question asks the social currency users what is the sector they mostly spend social currency in; the second question asked whether and to what extent they considered the social currency helped them improve their food security; the third question asked whether and to what extent the social currency helped them to skip intermediation to access food and favored fair trade. The fourth question asked whether and to what extent the consumption of local food increases as a result of their participation in the social currency. The fifth question asks whether and to what extent the social currency has encouraged participants to produce their own food at communitarian initiatives.

The importance of food and food-related activities in the social currencies is confirmed in Figure 2, where the expenditure of currency by sectors is shown. This means that the function of the social currency is strongly related to food provision and this is a central domain in the exchange network. This also evidences that food stands for most of the offer of goods in the network, so that might explain that most of exchanges relate to food trade.

In relation with other variables, it is observed that those who do not spend social currency yet are the respondents who appear to have higher incomes (more than €2000 per month). Those with lower incomes seem to rely further on the food acquisition through Copinos.

In terms of the social currency’s effects on food security, the respondent’s perceptions indicate that Copin currency has a meaningful impact to the extent that 18% rate 10 (“completely agree”) to the statement indicated in Figure 3. Another large proportion answered with an average score (6) but still there is a trend toward higher values.

In relation with other variables, when income is compared, there is a correlation between having a lower income and strongly expressing agreement with the statement presented in Figure 3. In the same train of thought, the condition of being unemployed seems to correspond, to a lesser extent, to supporting the statement. Those who completely disagree with the statement seem to be less involved in the activities of the network, exchanging less currency and having higher monthly incomes.

Proximity between producers and consumers is given in two ways, either by reducing middlemen or by reducing distance between producers and consumers. When users were asked to rate a statement concerning reduction of middlemen and fair trade, a large proportion of respondents agreed on the importance of approaching consumers and producers as a motivation to use social currency. According to Figure 4, 50.8% of respondents from RASTRU totally agree (rated with 10) that they use the social currency because it avoids middlemen and contributes to fair trade. Only 3.2% of respondents (two people) completely disagreed with the statement. It could be observed that neither of these people are involved in projects and neither earn or exchange social currency, despite being part of the network.

The reduction of physical distance between producers and consumers is another component of proximity, which at the
territories is evidenced in the preference for locally produced food. In this respect, the surveys looked at consumption changes as a result of participation in the social currency. Figure 5 shows that there is a general trend of agreement to the statement proposed (“As a result of my participation in the social currency I increased the consumption of local produced food”). For RASTRU, 25% of the respondents totally agreed with the statement, rating it 10 out of 10.

In terms of other variables, it appears that those who completely disagree with the statement (5 respondents) do not participate in projects (consumption groups or community supported agriculture) within the network nor spend social currency yet.

Participant observation allowed me to show that there is a crescent interest in finding cooperative or individual mechanisms to produce fruits and vegetables for self-consumption in an ecologic and sustainable way. In RASTRU people willing to improve their skills in agro-ecology, earning social currency simultaneously, have the chance to work at the supplier farms and charge 5 Copinos per hour. One of the agriculture producers, who pays working time in Copinos, affirmed in one interview that it is fair giving a value in Copinos to the knowledge that members are acquiring in the gardens, because most of them start with no basics on agriculture. Figure 6 shows that the interest in producing food for self-consumption has increased for a large part of respondents after joining the social currency.

It is important to note that most respondents who completely disagree are not active participants in the network, and are not earning currency, exchanging goods or services, or participating in projects.
Provided 1 is “completely disagree” and 10 is “completely agree”, rate the following sentence: “As a result of my participation in the Social Currency I increased the consumption of local produced food”

Fig. 5. Social currency and local food consumption.

Provided 1 is “completely agree” and 10 is “completely disagree”, rate the following sentence: “As a result of my participation in the Social Currency my interest in producing my food at local and/or communitarian gardens has increased”

Fig. 6. Social currency and self-provision of food.

From the graphs, it can be observed that a certain amount of respondents (between 2 and 7%) who provide negative impressions (rating low scores for the proposed statements) belong to the network (have an account on the system), but might have not exchanged currency yet or participated in any of the projects. Besides, from the participant observation, it was evident that all 1032 users were not active and, according to the coordinators, about 30% of them have never used the currency. Therefore, it must be clarified that results of the graphs cannot be extended to the 1032 official participants, and the sample does not attempt to be entirely representative.

Observations from Data Collected in Surveys and Participant Observation

Summarizing the survey data and participant observation to abstract general inferences, the contributions of social currency to alternative short food supply chains can described in the following elements. They include some of the discussion elements which showed the path from conventional to alternative food supply chains:

- Help meeting basic food needs with economic sustainability: With the social currencies there is a transition from a rational and economistic model for food provision to a model in which people’s need and right for food prevails. Providing cashless ways to connect locally
produced needs and resources, social currencies bring new ways to meet basic food needs, either by earning currency through offering talents and skills unused or receiving allocations in social currencies. However, this does not mean that there is no economic benefit for producers. On the contrary, it is possible for producers to have a profit while charging in social currency. This currency also incentivizes the creation of local economies complementary to the agriculture production.

- Create local economies of food: Social currency brings the resources back to nearby actors that previously were going to external agents of the territory. In this way they are encouraging the territorial allocation of value; it means that the added value coming from agriculture activities remains in the territory and is not extracted by outsiders. In the case of RASTRU, this value is invested collectively in an open and participative way.

- Increase physical and relational proximity between producers and consumers, shifting roles of production-consumption: In the Copin economy, not only do the roles of producer and consumer approach each other, but the roles blend. In other words, the very structure of the food provision systems is modified, conceiving consumers as potential producers and small scale producers as key actors whose risks have to be socially assumed. Even though supplying the whole personal diet is hard in these types of initiatives, the personal food contribution seen on a large scale represents a large modification of the conventional food supply chains that social currencies support and boost.

- Encourage the changing of food-related habits (toward political and ecologic implications, enhancing personal food autonomy). With encouraging a change in food-related habits, such as encouraging accessible and profitable ecological production, generating awareness about the benefits of ecological and proximity consumption, and in motivating people to produce food by themselves in communitarian or domestic gardens, social currencies are generating a transition to environmentally responsible consumption habits.

- Support food exchanges in terms of trust and value: A social currency constitutes a guarantee label for food exchanges, because it informally certifies good practices and quality implicit at joining an exchange network; at the same time food backs the social currencies as a store of value and boosts its circulation in a given territory.

Fig. 7. Flow of money, products, and transport in conventional food supply chains. Author’s creation based in the results of case study and literature review.
It should be pointed out that the effects that a social currency has over the food supply chain within a territory are related to elements such as the social capital present, the level of integration of the community, geographical and climatic features, the conditions of the soil, among others. It is also important to highlight that for all this to occur it is necessary that producers have active participation in the social currency, as in RASTRU, so they are curious and creative to find ways to meet their needs with the locally present resources.

Figures 7 and 8, created from the analysis of the case study, show how the flow of resources in a territory changes from the use of a conventional to a social currency. Figure 7 shows the resource transfer among actors of the food system and how the farmers, especially the small-scale ones, are the ones receiving the smallest benefits from the conventional food supply chain. The graph schematizes the relation of consumers and food producers showing that it tends to be indirect and mediated by external actors. It also shows how the resources flow from food producers and consumers to the retailers and input producers. The figure includes the distance that food is transported, from production to processing and retailing to finally being consumed.

Figure 8, in contrast, shows the relationships among actors of the short food supply chains through social currencies. The main difference is the consideration of the territorial features, not only in spatial terms but as biophysical structure, with specific limited resources. Within the territory, where boundaries define the limits of social currency circulation, the actors generate arrangements based on the social currencies and the coordination mechanisms it provides. These arrangements may include direct participation of consumers in the farm activities, or creation of community gardens among a group of consumers, or coordinating collective food orders to producers (consumption groups). Thus, the social currency flows from consumers to producers in the food exchange, and from producers to consumers in the worktime exchange (green arrows), or through other exchanges benefiting both parties. In the graph the possibility of Open Councils is also included, which not only help the redistribution of resources but constitute democratic platforms to enhance citizens’ participation. Open Councils bring resources to create new farms, filling the gap of the lack of resources and the unprofitability of these kind of initiatives if financed with conventional money. Additionally, social currencies can be used to encourage application of ecologic techniques in fruit and vegetable production that allow farmers to reduce costs in terms of chemical inputs coming from conventional farming schemes. For example, seeds can be exchanged among producers through seed banks in social currencies. Organic fertilizers and pesticides can be created collectively with farm outputs, then can be exchanged in social currencies within the farmers network.
In terms of flow of conventional money, it is seen that it continues to be present but, unlike in conventional food supply chains, it is less important and determines the circulation of food-related assets to a lower extent. As it was seen in the case study, euros are used for accessing products they could not locally produce and to compensate for the transformation of some other derivatives. Producers require euros to finance those inputs that cannot be traded with/by social currencies such as fuel, water, and electricity supply. However, the crucial element is that access and exchange of food does not depend exclusively on conventional money. In this case, one can speak of complementarity between conventional and social currency schemes. Nevertheless, different initiatives of alternative energy based on solar panels and biofuel production can be integrated with social currencies and initiatives to shorten food supply chains.

Another positive effect that can be shown in the graph is the territorial allocation of value, which means that the added value coming from agriculture activities remains in the territory and is not extracted by outsiders. In the case of RASTRU, this value is invested collectively, a function that could also be performed by local governments to the extent that is participatory and democratic.

Other benefits include the encouraging of change in food-related habits, such as ecological production making it profitable, generating awareness about the benefits of ecological and proximity consumption, and in motivating people to produce food by themselves in community or domestic gardens. Besides, social currencies help short food supply chain initiatives extend territorially providing the structure to make agreements between producers and consumers elsewhere.

In terms of restrictions, there could be difficulties in terms of its application in developing countries where food consumption relies more on meeting basic needs rather than ethical or political concerns. It is to be seen whether this model is still feasible and sustainable in a developing country scenario where organic and proximity consumption are not crucial values defining food choices, and where other difficulties may exist in terms of lack of social fabric, inequalities, and violence. That is to say that values guiding food consumption have to be addressed according to the context that determines the choice (if there is one) of what to eat. Also every territory has unused resources that can be met with needs through social currencies that are to be identified.

Another challenge is related to the legality of all the practices involved in the short food supply chains based on social currency. The legal framework of social currencies is defined by national regulations that can be more or less restrictive. For the case of Spain, activities are ruled by social and solidarity economy regulations, according to which all type of goods exchanges are valid between members of the same association without fiscal or legal implications. However it does not specify the labor or contractual obligations where the exchange extends to services. Thus, for the Spanish case the possibility of extending social currency initiatives could be threatened or boosted according to political will to intervene.

**CONCLUSIONS**

Some general conclusions emerge from the previous sections and are recapitulated as follows. The presentation of the social currencies framework explained the ways in which this type of monetary mechanism enables the creation of alternative exchange networks in which the dependence on conventional money is reduced, providing alternative circuits where the local available human and natural resources are connected with population needs. The concept of short food supply chains appears as a strategy to increase physical and relational proximity between producers and consumers at the territories.

The collected data analysis showed that there are some dimensions in the shortening of food supply chains that are more influenced by the existence of a social currency and that it depends as well on the specific arrangements in which it is based. One of these elements is the agreement between consumers and producers to enable alternative compensation systems, which is only possible when producers are active agents of the social currency network. Ecological producers with ethical and political concerns regarding food are curious to explore the different possibilities that the currency brings to access their production inputs locally and strengthen relations with consumers, without leaving aside the economic sustainability. This brings for consumers the possibility of meeting their basic food needs without using conventional money, just allocating value to their own talents and skills. From a territorial perspective, where these initiatives replicate, it permits the value of the exchanges to remain local and the dependence on external inputs to be reduced. It means that the contributions not only concern the individuals directly involved but the territories where the exchanges take place.

It is relevant to point out that food systems embrace complex interactions and just a few of them were addressed in this research. Considering that this topic is still a novelty in academic terms, it is necessary that further research provide perspectives to explain how social currencies can boost other components of the food system, such as food transformation, waste, catering, inputs production (e.g., renewable energies, seed exchange), etc. Also further analysis on the differential impacts of social currencies in food systems in cases from both developing and developed countries should be conducted, or in scenarios with various demographic and geographic features. Also further research on how social currencies create new local governance mechanisms, as the seen in the case of RASTRU, would be worthwhile to carry on.
APPENDIX

References
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