

The potential of Grassroots Innovations for sustainability strategies: a case of study of the Spanish Community Currencies

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Introduction

The most of the sustainability policies, like governments large-scale post-carbon/transition strategies, are based on technological innovations and carbon reduction targets, but they lack strategies to mobilize the social change that would be needed to get the necessary social support for an effective action. Previous analysis detected the need of further research to identify effective strategies for deploying social innovation, understanding how a socially just approach to climate change can be translated to action, and mobilization of local community innovation and activism (Wiseman, Edwards, & Luckins, 2013). Social innovations contribute with new practices and understandings to face the problems through restructuring social institutions (Seyfang & Smith, 2007). The inclusion of social solutions could improve its performance significantly if they target to enhance social capital due to the existing linkages between social capital and sustainability (Dale, A., & Onyx, 2010).

When the social innovation comes from an initiative of civil society it is called a "grassroots innovation". A relevant number of grassroots initiatives supporting sustainable development are soaring worldwide. In the case of Spain, they appear in the form of eco-villages, transition and degrowth communities, community currencies, innovative cooperatives, co-housing, consumer groups, local food systems, social markets or agro-ecologic initiatives.

We use the term 'grassroots innovations' to describe networks of activists and organizations generating novel bottom-up solutions for sustainable development; solutions that respond to the local situation and the interests and values of the communities involved. In contrast to mainstream business greening, grassroots initiatives operate in civil society arenas and involve committed activists experimenting with social innovations as well as using greener technologies (Seyfang & Smith, 2007).

Grassroots innovations promote more sustainable alternative systems to produce and access resources collapsed by the crisis. Those resources range from goods and services like food, green technologies or knowledge, to social benefits like trust, esteem, cohesion and participation.

The most of them promote common values, motivations and behaviors related to social justice and environmental balance. Also they build new relational networks that improve the social capital of the community and, therefore, their resilience and adaptive capability. Like any other social movement, the grassroots initiatives are "intentional collective actions which result in the transformation of the society values and institutions, whether they achieve or not their own goals"(Castells, 1997, p3). The ways to think and behave of their members may help to emerge social transformative initiatives. Therefore, they develop experimental initiatives and become potential social change agents that will be valuable allies for sustainability policy and strategies.

Studying the potential of Community Currencies (CCs) for social change

This paper proposes to analyze Grassroots Innovation as experimental initiatives with potential to generate solutions for sustainable development and extend their influence to the rest of society. Particularly will be explored the case of Community Currencies (CCs) using Community Exchange System CES in Spain in the 2013 – 16 period.

Community Currencies are parallel exchange systems that allow alternative transactions within the members of its network or community. Their design would depend on the nature of the different projects which would imply different guiding principles. The specific design of LETS (Local Exchange Trading Systems) will be taken as they are most popular scheme worldwide. They consist on grassroots initiatives aiming to build a sense of community and to keep wealth locally. Their exchange unit is the mutual credit or time units, which are created at the time of the transaction and negative balances don't charge interest payment. The value of exchanges is backed by mutual trust, and reciprocity is the guiding principle. They are democratically and transparently run by volunteers. Literature review shows how all those principles of CCs contribute to improve community social capital, resilience and therefore sustainability (Caldwell, 2000; Jacob et al., 2004; Wheatley et al., 2011; Williams et al., 2001). There is an interesting evolutionary perspective on Blanc's classification that places LETS as a first generation CCs, and describes its capacity to adapt to new circumstances later on, according to their particular experiences, references and needs: convertible schemes, local business inclusion and partnerships with ONG or government (Blanc, 2011). In some cases, these alliances with institutions have constituted innovative social solutions which allowed to face, more or less successfully, significant social needs in health, exclusion or educational matters, as occurred in the cases of Brazilian Curitiba City and el Saber, or the Japanese Fureai Kippu (Lietaer & Belgin, 2011). Consequently, for sustainability purposes, it will be highly advantageous if the Grassroots Innovation meets specific characteristics for diffusion and if participants have the willing to adapt and evolve. Otherwise they could become closed clubs, which only generate benefits among their members. Interesting examples of LETS adaptation and evolution can be found on CCs incorporation to the current transition movement in UK. In the cases of Totnes, Stroud, Lewes and Brixton, which had active LETS in 1980s or 1990s, some of people who run the LETS now are involved in the Transition Local Currencies (Ryan-Collins, 2011).

This paper proposes to explore the case of community currencies in Spain for the 2013-16 period to check if they are contributing to sustainability through their specific social effects and if they meet some of the key conditions for a successful diffusion as proposed on the co-evolutionary niche theories of innovation diffusion (Seyfang and Longhurst 2014). A review of the existing literature that explored senior experiences from other countries contributed with specific research and framework in the field. In this framework, the data from a survey among community currency users taken on 2013 and data updated in 2016 regarding their network structure evolution allowed to contrast the results for the Spanish case.

The research:

The original 2013 research aimed to find evidence on the contribution of the Spanish CCs to the social capital and resilience of their communities and to identify the circumstances that may condition their adaptability and potential as social change agent (Oliver Sanz, 2016). The research outcomes also provided useful data to analyze if they meet some of the key conditions for a successful diffusion (Seyfang, and Longhurst, 2014).

2013 investigation was conducted in two stages: the first step was a LETS literature review, and the second was an on-line survey among CES system participants in Spain in order to know

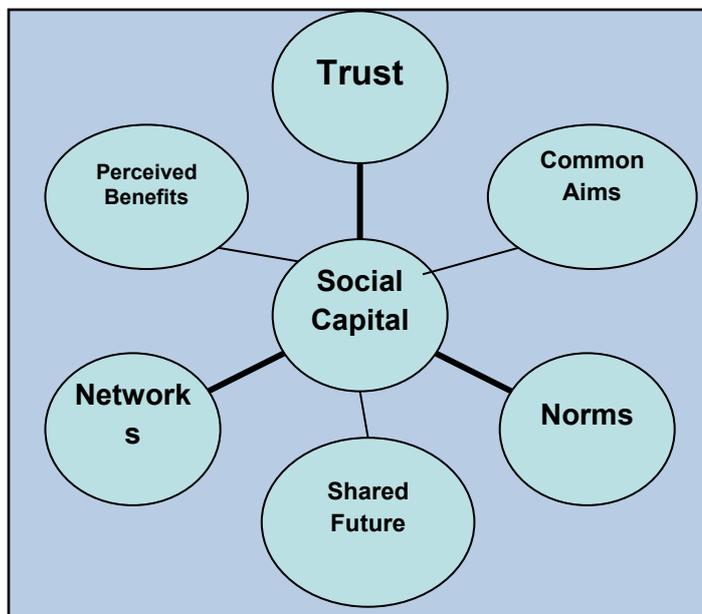
their patterns of participation, values, motivations, social benefits, current perceptions and perspectives regarding their own community (Oliver Sanz, 2016).

Previous research literature revealed that participation on community currencies enhanced well-being and built social capital (Jacob et al., 2004; Wheatley et al., 2011). Exchanges improved the well-being of the participants through transactional and social benefits, although the monetary value of the transactions had little relevance when compared to the social value (Jacob et al., 2004). That's the reason why the research focused on social effects and their contribution to sustainability.

For the theoretical framework, first was used the concept of community as a complex adaptive exchange flow system in which social capital emerges from user participation, proliferating links and networks, thus improving its relational structure. The second foundation was taken from social capital theory, where trust and norms (Putnam, 1995) explained how organizational capability improves to pursue a common aim. Community behavior is oriented by: normative basis (trust, reciprocity, cooperation and participation); trust and the common aims of the members. With common aims and norms, community self-organizing capability improves its daily management and the ability to cope with future disturbances. A third theoretical framework has been added from co-evolutionary niche¹ theories of innovation diffusion (Strategic Niche Management) to identify the conditions required for Grassroots Innovations to successfully diffuse their ideas and practices (Seyfang & Longhurst, 2015). All those frameworks together offer results that allow a better understanding of how G.I. experiments are run and how their networks are built according their values, how are founded, and how they could spread their ideas and behaviors.

Selected social capital indicators (Figure 1) were used for contrasting the Spanish case results with other LETS experiences, some of which reported similar values and behaviors among most members (Oliver Sanz, 2016).

Figure 1 - Selected Social Capital Indicators



Source: the author

¹ At that point Seyfang and Longhurst distinguished between niche as local projects/experiments and global niches. Both constitute emerging institutional fields where knowledge aggregation occurs.

Resulting experience and knowledge provided cases of success and failure, types of CCs, common adversities-strategies. Strategic Niche Management applied by Seyfang and Longhurst contributed with analytical framework to detect three key internal processes for successful niche development:

- Visions and expectations are widely shared and are robust, tangible and specific.
- Necessary networking to stablish constituency around the innovation.
- Shared learning (instrumental and theoretical).

Those key factors, plus favorable external conditions in regimes and landscapes should be able to diffuse their innovative into wider society along three potential routes:

- Scaling-up: increasing participants, size, activity or impact
- Replicating: the model in new locations or contexts
- Translation: partial elements of niche ideas are incorporated into mainstream contexts (Seyfang, G. and Longhurst, 2014)

The resources available for the research limited its scope for the empirical study to the online *Community Exchange System CES* database. *CES* consists on exchange network software with a similar operating system to LETS and other credit mutual exchange systems. It uses as exchange unit both mutual exchange and time units. *CES* is officially running since 2002 ([Web CES Database, 2013](#)). By 2013, it was surprising to check that among the total 500 *CES* communities existing around the world, 145 were Spanish evidencing the strong interest aroused in the country. After 3 years the interests keeps alive: from 818 *CES* communities worldwide, 230 are from Spain, although only 50 have more than 50 users ([Web CES Database, 2016](#)). Spanish communities had been registering since 2008, and most of them were set up in 2012.

It may be mentioned that *CES* network allows connecting different communities between them. So that, as exchanges spread between communities, the available number of nodes may increase, thus meeting one of the proposed characteristics that would allow community exchange systems to become viral (Bendell and Greco, 2013).

Results and discussion

1 Network structure: user profile, transactions and node quantity and variety

User profile was similar to the literature review cases: middle-aged and middleclass working people with high educational level. Just slight differences regarding genre distribution were found.

Regarding the network structure in 2013, compared to senior LETS experiences, the Spanish cases had lower number of users and similar transactions number. It was obvious that Spanish CCs were in a thriving early stage of its life cycle, with community and individual needs arising from the social and economic Spanish crisis. Given that one of the main weakness for LETS is that the lack of critical mass usually hinders its consolidation and prevents the extension of its use (Seyfang & Longhurst, 2013), it is noteworthy that the most of them keep on working after three years, registering similar exchange volumes and more users. Actual scaling up in transactions is only found in five of them: Osel, Copin, Eco, Ebro and probably Gota. Future investigation on the specific circumstances of those communities could identify strengths and good practices favorable for effective diffusion.

Table 1: Spanish CCs users and transactions evolution 2013-16

Community	2013					2016			USERS INC	TRANSACTION INCR
	Users (may 2013)	Exchange unit (Virtual Money)	Foundation date	Exchange/month	Value Exchange/month	Users (March 2016)	Exchange/month	Value exchange/month		
Puma - Community currency Network North-Seville Historical Downtown	585	PUMA	21 feb. 2012	160	1365	917	148	1481	57%	-8%
ECO - ECO Network Tarragona	415	ECO	31 oct. 2009	49	1850	634	N/A	N/A	53%	N/A
Exchange community Sierra Norte - Madrid	400	Mora	14 mar. 2012	157	1411	520	157	1168	30%	0%
15M Camp de Túria	274	ECO	18 jul. 2011	120	1636	364	146	1966	33%	22%
Asturian Barter Community Network	266	Copin	18 oct. 2012	121	2289	1292	454	6535	386%	275%
Osel Murcia	256	OSEL	12 aug. 2012	32	462	448	120	953	75%	275%
Aragonese Integral Cooperative	72	Ebro	24 nov. 2012	9	95	416	40	430	478%	344%
Time Bank Collado Villalba	72	Tempo	18 jun. 2013	N/A	N/A	75	0	0	4%	N/A
Eco Network Milaguas Teruel	33	Gota	29 sep. 2012	13	184	118	N/A	N/A	258%	N/A
Eco Alt Congost	40	Eco	2012	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Source: the author

When checking the 85 new communities founded after July 2013, the most of them hadn't registered activity, but it was significant that a dozen of these new communities showed increasing number of users and transactions. This positive performance evidences CES system capacity to replicate in new communities.

The increase in users confirmed the improvement of the quantitative relational network among users, but survey results revealed their low diversity in contrast with other LETS research cases where users were diverse in age, education and income. In the specific cases of Calgary Dollars and Ithaca Hours, indicators related to race, nationalities and income diversity confirmed improvement of the community social capital by increasing nodes and transactions' quantity and diversity (Jacob et al., 2004; Wheatley et al., 2011). Those results show an important weakness, suggesting the convenience of increasing participation of local business and underrepresented collectives such as students and pensioners.

It must be considered that Mutual Exchanges are based on personal interactions and reciprocity thus may not grow beyond the point where members feel a sense of community (Seyfang & Longhurst, 2015).

2. Motivations for founding and participation: sustainability and local economy - In order to assess agreement intensity on proposed motivations and values, answers were graded from 5 (strong agreement) to 1 (strong disagreement). After that, average values were calculated for each motivation. Users surveyed agreed with the proposed motivations, "to contribute to a sustainable society" and "local business promotion", similar to the most mentioned motivations in the [Worldwide CCs Database](#). Statistical analysis found positive significant correlation between the following motivations:

- "Contribute to sustainable society" and "Local business promotion"
- "Exchange goods and services", "Offer/receive support to/from the rest of the community" and "Sustainable".

- "Interact with people who have similar values to mine" and "Promote sense of community".

Unanimity in the motivations proposes that participants have the initiative to promote prosperity, acting locally and under the vision of an economic sustainable paradigm where exchanges emerge with the guiding principles of reciprocity and sustainability.

3. Predominant Values: solidarity, social justice, ecology, relationships and participation - All respondents agreed with the proposed values of: solidarity, social justice, ecology, personal relationships value and participation. These results were similar to those obtained from other investigations like Calgary Dollars, UK LETS and Ithaca Hours, which proposed that the projects which have CCs as allies should include environmental and social aims. Given that in some CCs Spanish cases, demurrage² collected funds are assigned to projects related to the answered common values related to environmental balance and social justice (Hughes, 2015), there is evidence about how common values and motivations are guiding real outcomes consistently. It must be taken in to account that the origin of those values could be either a consequence of participation or a prerequisite of the participants.

4. Norms and Behaviors: cooperation, reciprocity and participation.

The evidence about predominant motivations and values related to participation, reciprocity, community sense promotion, interpersonal relationships and affinity values implies that their behavior would have the same orientation. Either participative attitude or reciprocity behavior implies that cooperative behavior is another of the guiding principles for members' actions.

All those predominant motivations and values constitute the common guiding objectives of the communities. Combined with cooperative norms, social capital can be enhanced through an improved capacity for self-organization.

5. Perceived Benefits: participation, trust, esteem and wellbeing - When trying to identify the results of participation, respondents overall response agreed with proposed topics related to participation, trust and esteem, all of them improving components for social capital as a consequence of reciprocity and participative behaviors. 50% of the respondents perceived wellbeing improvement, as similarly evidenced in Calgary Dollars and Ithaca Hours. By contrast, low perceived utility³ was a significant weakness that could affect negatively users' commitment and therefore community consolidation.

It is noteworthy that the unemployed users answered that esteem was the most important benefit. Taken together with the significant correlations between participation/companionship and trust relationships increase/esteem, can be deduced that participation in CCs contributes to generate effects allowing helping facing social exclusion and crisis consequences, as proposed by Caldwell (2000) and Wheatley et al. (2012).

Business users' answers confirm that their participation is useful despite the low volume of transactions. This result is similar to Calgary Dollars and Ithaca Hours users, which highly valued both the obtained positioning and the loyalty generated by their customers (Jacob et al., 2004; Wheatley et al., 2011). Literature usually recommends a higher participation of business to improve utility and diversity in order to contribute to community consolidation. Also it could help to avoid pooling, or excessive positive credit accumulation, which is one of the main risks for CCs survival (Greco, 2013).

² Penalty collected when the unit of exchange is not been used

³ Instrumental or individual benefits like loneliness and business promotion

6. Satisfaction as a result of participation - Data collected revealed that 79% of the users were satisfied or very satisfied. This favorable attitude constitutes an important source of support for commitment in the short term. Similarly to referenced investigations results (Caldwell, 2000; Jacob et al., 2004; Wheatley et al., 2011) satisfaction increased among users who mainly exchange everyday products and had larger exchange volumes. Satisfaction also increased with positive perception of participation and trust relationships, and among users who believed that economic activity must be oriented to ecological and sustainability values.

7. Expectations and Future Prospction - 70% of respondents believed that new users' entry would improve the functioning of the community. There was also consensus to support community projects which pursue common aims like appropriation of space for collective use and collaboration with projects related to social justice and local business. This result reveals an evident potential contribution to social capital provided by the members open attitude towards extending community social effects and establishing alliances with institutions like NGOs and business alliances. However, half of the respondents see alliances with public administration with considerable suspicion. Given that public administration involvement is a key allied for successful delivery of social effects, as Calgary Dollars and LETS in UK cases show, there is an urgent need to recover citizen confidence, although this basically depends on public administrations.

Therefore, despite this good predisposition and high satisfaction levels, previously referred weak points may threaten the accomplishment of users' expectations and community positive effects extension. It is important for CCs administrators to be able to monitor and identify their own communities' common aims in order to guide their management towards users' needs and expectations. With the collected data they could promote participation, encourage commitment, lead changing processes, inform and train users and design suitable alliances, like those recommended by Caldwell's conclusions, who proposes CCs as potential collective to boost social and ecological transformative processes (Caldwell, 2000).

When interpreting these results, the reader must take in to account that the data is referred to communities using CES system exclusively. It must be taken in to account that there are other CCs in Spain using alternative systems like Ekhi (Bizcaia), Res, Orué (Valencia), Henar (Alcalá), Zoquito (Jerez), Jara (Aljarafe), Común (Málaga), Demos (Canarias), Pita (Almeria), Choquito (Huelva), Gita (Bilbao) and Galeuro (Galicia) and some of them are components of more mature and wider social projects like the Boniato for Madrid Social Market and the Turuta for the Vilanova i la Geltrú Transition movement. It may extend to all of them the conclusion that they share common values related to environmental balance and social justice, as most of the LETS experiences worldwide; that user's behaviors are driven by reciprocity norms, aiming to achieve alternative relationships guided by cooperative and trust behaviors which help consolidate a community able to transcend the current monetary system and its negative behaviors (Lietaer & Belgin, 2011). In addition, CCs governing systems are participative and transparent, thus they promote an alternative thinking that relies on the generated trust relationships.

1. CONCLUSIONS

Spanish CCs are in a consolidation stage. The results of the referred 2013 investigation provided evidence on how CCs participation in Spain was improving community social capital through the proposed dimensions. Positive trend in the volume of users and transactions evidences their scaling up capacity and new CCs born in the 2013-16 period confirm their potential to be replicated. Given its positive relation to diffusion, these results could be

completed with future research related to their translation into mainstream projects, learning activity and internal network actions.

It is concluded that CCs participation mainly responded to ideological motivations, becoming some kind of activism. Indicators regarding values, motivations and perceived social benefits were similar to those shown by previous CCs and G.I. research, indicating that transcendence is a strong point for commitment. The predominant values of social justice, ecology and local economy promotion placed these initiatives as Grassroots Innovations aiming to drive transition dynamics towards feasible and sustainable communities.

Those results confirm that CCs in Spain meet favorable characteristics to be suitable allies for environmental and social projects. They already are exercising social change for sustainable development and their experience is leaving knowledge, practices and skills to support them as sustainability tools. Monitoring those conditions and correcting their weaknesses could guide Spanish CCs to consolidate improving their access to social relationships and alternative exchanges to *mainstream* market. That will make them more resilient and allow transcending the current monetary system (Bendell et al., 2013).

The extension of social positive effects beyond its members is an opportunity that local business collectives, public administrations and NGOs should consider in order to exploit synergies and pursue together common objectives related to environment and social sustainability. That point strongly supports the potential effectiveness of building bridges among top-down and bottom-up strategies for sustainability strategies like post carbon and green projects. Their experience offers knowledge related to local community innovation and activism mobilization towards a socially just approach to climate change. Including G.I. on institutional initiatives could provide a favorable socio-cultural context to outline proposals related to environmental or social innovations. Another way to collaborate would be to influence for removing obstacles, and promote G.I. visibility and good standing in order to prepare a suitable context for their operation and diffusion. For that purpose, they shouldn't be introduced as isolated and unusual cases. This involves introducing them as good practitioners instead of a threat for social stability, emphasizing their social role and value. They constitute potential solutions to specific environmental and social problems that the mainstream economic system produces, worsens and ignores.

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