

Community Currencies and Sustainable Development: A Systematic Review

Arnaud Michel and Marek Hudon

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This paper aims to fill the gap by exploring whether complementary currencies contribute to the three pillars of sustainable development. We use the systematic review methodology on an original dataset gathering most academic publications published on the topic in English, French and Spanish. Our main findings suggest that community currencies mostly contribute to social sustainability, and that their economic benefits are somewhat limited due to their small scale and the lack of awareness on their scope. Moreover, very few studies explicitly identified environmental outcomes. Finally, this review reveals some limits regarding current methods for impact assessment in this field. Therefore it encourages more standardisation to provide greater accuracy and strengthen the legitimacy of community currencies' in order to foster their continued development.

CEB Working Paper N° 15/012
April 2015

Community Currencies and Sustainable Development: A Systematic Review

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A slightly revised version of the paper is forthcoming in *Ecological Economics*

Abstract

Community or complementary currency systems have spread all around the world. Most often, they have been promoted as tools to foster sustainable development albeit they differ in terms of specific objectives. While many case studies have tried to assess the actual impact of these systems, there has been no global analysis summarizing their global impact.

This paper aims to fill the gap by exploring whether complementary currencies contribute to the three pillars of sustainable development. We use the systematic review methodology on an original dataset gathering most academic publications published on the topic in English, French and Spanish. Our main findings suggest that community currencies mostly contribute to social sustainability, and that their economic benefits are somewhat limited due to their small scale and the lack of awareness on their scope. Moreover, very few studies explicitly identified environmental outcomes. Finally, this review reveals some limits regarding current methods for impact assessment in this field. Therefore it encourages more standardisation to provide greater accuracy and strengthen the legitimacy of community currencies' in order to foster their continued development.

Acknowledgements

This research has been carried out by Marek Hudon in the framework of an "Interuniversity Attraction Pole" on social enterprise, funded by the Belgian Science Policy (SOCENT).

1. Introduction

Over the last few decades, a growing number of social movements have turned their attentions to the challenges of globalization in terms of sustainable development. Concerns have been raised about the conventional monetary system notably that such a system is unsustainable because of the constant drain of financial resources going from poor to rich segments of the population, and the obsession for economic growth as main economic philosophy (Seyfang & Longhurst, 2013; Lietaer et al., 2012; Goerner et al., 2009; North, 2007). All of this results in the amplification of economic disparities and the decline of local economies (Robertson, 1999; Strange & Bayley, 2008) and even frequently the depletion of natural resource (Jackson, 2009). In response, a few ‘new economic’ approaches argue that we need to revise priorities away from the principal objective of economic growth and more oriented towards the well being of society and community-level sustainable development (Seyfang and Smith, 2007; Ekins, 1993; Frankova et al., 2014). They argue that all three pillars of sustainability need to be addressed and given some importance.

In parallel with this approach, and frequently inspired by green movements, community currencies have been developing all around the world by non-governmental organisations (NGO’s) and non-profit organisations (NPO’s). The motivations to create such systems vary. Gesell (1958) conceptualised them as a new economic order. Some of them were established in response to crisis situations to protect local livelihoods. For instance, Conill et al. (2012) argue that community currencies were part of community economic alternatives that have spread in Catalonia significantly due to the recent crisis. Many recent community currencies now emerge more and more deliberately as grassroots innovations with the aim of promoting sustainable development (Colacelli & Blackburn, 2009; Douthwaite, 1996; Meechuen, 2008; Seyfang, 2001). More specifically, these currencies could, for instance, ease the transition to a lower-energy economy (Douthwaite, 2012; Joachain and Klopfert, 2014). Over the last decades, the number of community currency projects has experienced dramatic growth around the world (see Lietaer, 2001) and during one of their studies, Seyfang & Longhurst (2013) recorded more than 3000 clusters of projects across 23 countries and 6 continents.

Within the large amount of papers studying this movement, the terminology of these new forms of exchange remains however confusing and contested (Seyfang & Longhurst, 2013). Amongst others, they are alternately called local currencies, alternative currencies, parallel currencies, community currencies or complementary currencies (Blanc, 2011). However, for

reasons of clarity, only the terms “community currency (CC)” and “community currencies (CCs)” will be used in this paper.

Typically, CCs design the broad family of currency systems that exist alongside conventional currencies, circulate within a defined geographic region or community, and arbitrate exchanges of goods and services without bearing interest (Lietaer, 2001). Some of the most famous examples of CCs are Time banks, Ithaca HOURS, Local Exchange Trading Systems (LETS)¹, WIR and the Red de Trueque. They vary impressively in their design, with some using physical paper-based currencies while others are only recorder as debit and credit lines in registers or electronic databases (Evans, 2009). They also differ in scale and objectives and a typology will be presented in a later section of this paper.

The CC field is currently on its way to develop itself as a solid discipline with an increasing amount of studies discussing the matter (Place, 2013). However, while the existing works have deeply searched and highlighted the diversity, the motivations and the potentials of community currencies, few have presently evaluated their concrete impact. Moreover, publications assessing outcomes of these systems consist generally of individual studies of one particular CC project (e.g., Jacob et al., 2004; Pacione, 1997) or national studies evaluating similar exchange systems (e.g., Birch & Liesch, 1997; Seyfang, 2002). To date, it would seem that almost no study has comprehensively assessed the global impact of community currencies. The only exception we are aware of is Dittmer (2013) who reviews English academic research about local currencies.

Still, impact evaluation and proof of positive outcomes is needed for different reasons. Firstly, as DeMeulenaere (2008) discovered in his study that CCs rely mostly on external financing, convincing governments and financial institutions could help to get more support. Secondly, while CCs are generally small-scale systems, McBurnie (2012) found a positive correlation between the awareness of community and environmental benefits and the willingness of non-members to start using the currency. As a result, more people and businesses would possibly join CC systems if evidence of positive impacts is correctly demonstrated.

For these reasons, this research attempts to draw a global picture of the actual impact of community currencies and assess how successfully they achieve sustainable development. With this aim, a systematic review of the most comprehensive and available literature has been conducted. Following Seyfang & Longhurst (2013), the CCs analysed were categorized

¹ LETS are also sometimes called Local Exchange Trading Schemes.

in four main types according to their objectives and the extent to which these objectives correlated with actual outcomes of each type was also evaluated.

The remaining part of the paper proceeds as follows: the next section describes the theoretical context for the review, introducing the new economics approach, describing the link between the three pillars of sustainable development and community currencies, and presenting the typology used for the analysis. Following this, the particular methodology of this research is explained. Next we present the findings, including the characteristics of the analysed studies and the observed impacts. A discussion of these findings is then provided. Finally, we conclude with some implications of this study for the future.

2. Theoretical Framework

2.1. Community currencies and sustainable development

According to Robertson (1999) the current monetary system challenges sustainable development for two main reasons. Firstly, resources are systematically relocated from poor to wealthy segments of the population. Kennedy (2001) referred to it as the “fairness misconception”, stipulating that everyone is in fact not treated equally in our monetary system. In her study comparing the interest paid and received by German households, he found that the mechanism of interest only benefited a small minority of rich people, while the majority (80%) paid almost twice as much as they receive. Secondly, Robertson (1999) denounces constantly higher levels of production, consumption and investment resulting from the money-must-grow imperative.

The basic vision of sustainable development stipulates that our decisions should bear in mind the interconnection of the economic, social and environmental spheres. With the aim to realize these objectives, new economics organizations and academics attempt to create new institutions or parallel infrastructures that comprise more sustainable systems of production and consumption (Douthwaite, 1996). The development of new monetary systems through the establishment of community currencies systems is one such example.

Without question, the fundamental basis of community currencies is the rejection of the credit-money foundation of the capitalist system, and more specifically how conventional money is created. CC advocates criticize how the creation of money, by engendering debt and the repayment of credits with interest, leads to an ever-expanding monetary system

(Rowbotham, 1998). As Kennedy (2001) states: “*Interest leads to compound interest. Compound interest leads to exponential growth. And exponential growth in turn – wherever it cannot be transformed – is unsustainable.*” (Kennedy, 2001:1).

While the general objective is to create more resilience in the monetary system, CCs are generally promoted to make sure that a bigger part of savings and local income circulate within the local community. Community currencies have commonly been supported by practitioners of green and political economy movements as tools to stimulate sustainable development (Douthwaite, 1996; Greco, 2001; Robertson; 1999). They are considered as grassroots innovations that introduce bottom-up solutions for sustainable development by responding to the local situation and the interests of the communities involved, focusing on the social economy rather than the market economy, and offsetting the loss of local autonomy at the expense of the global market (Seyfang & Smith, 2007).

This paper aims to examine the impact of CC’s and also the ways in which they can effectively foster sustainable development. Before entering into the subject in more detail, let’s first explore the numerous theoretical ways in which CCs could potentially contribute to sustainable development and classify them according to economic, social and economical sustainability.

Economic sustainability is grounded in the recognition that natural resources are being depleted on an increasingly large scale by the economic system. CC advocates frequently argue that CCs can contribute to sustainability first of all because they can promote localization or foster local economic activity by preventing global outflows of wealth and increase the circulation of money in the community (Douthwaite, 1996; Collom, 2005). When the usage of the currency remains local, it is safe to assume that the money will circulate faster and in larger proportion, thereby stimulating the local economic multiplier and increasing local incomes (DeMeulenaere, 1998). Moreover, CCs can help to recognize informal work and value skills that are not valued by the formal labour market (Aldridge et al., 2001; Lietaer & Kennedy, 2008; Scott-Cato, 2006; Through local import substitution, local businesses are provided with a market advantage that helps sustain their activity. Additionally, CCs may incite the establishment of small enterprises and stimulate an entrepreneurial spirit, with lower financial risk.

Social sustainability is the second dimension. It implies the maintenance of social capital, the promotion of cooperation, trust, and cohesion within the community for the benefit of all (Goodland, 2002; Kahn, 1995). By creating small circuits of exchange, CCs have the propensity to foster community building, through increasing trust and stronger relationships

between businesses and users (Collom, 2005; Jacob et al., 2004). Through the exchange of goods and services, people are able to expand their social networks and make new connections (Thorne, 1996). Another objective of these systems of exchange is tackle social exclusion (Lietaer, 2004). Plus, they can boost the self-esteem and confidence of such socially or economically excluded groups by acknowledging that everyone's time and skills are equally valued (Gomez & Helmsing, 2008). Ultimately, recognizing informal work of women is an opportunity to address gender inequalities (Raddon, 2003).

Finally, the environmental dimension of sustainability translates into sustainable consumption, taking into account the biophysical limitations of the environment. It also stresses that that natural resources used for human needs must be regenerated faster than they may be consumed, and that the environment can properly assimilate waste (Goodland, 2002; Kahn, 1995). With respect to CCs, localization can potentially moderate the environmental effects of global flows with import substitution and the reduction of transportation costs (Douthwaite, 1996). Additionally, CCs represent potential vehicles for raising people's awareness about environmental issues and tools to promote eco-friendly behaviour (Seyfang & Longhurst, 2011).

2.2. Typology of Community currencies

Since the 1980's, the rapid multiplication of Community Currencies has also been accompanied by an important process of differentiation, or fragmentation, that has led to significant contrasts in terms of their design, scale and objectives.

Despite this great diversity, several attempts have been made over the past ten years to categorize and establish a typology of these systems (Blanc, 2011; Kennedy & Lietaer, 2008; Martignoni, 2012; Seyfang & Longhurst, 2013). However, the present paper will only consider the classification proposed by Seyfang and Longhurst (2013) as it categorizes CCs according to their objectives but more importantly because it is divided along the economic, social and environmental dimensions that we have just mentioned. However, it should be noted that this typology remains a "simplification of the full range of activities and motivations in existence" (Seyfang & Longhurst, 2013: 69). Moreover, the authors (ibid.) excluded some emerging new models of CCs and also the projects of STRO², which did not easily fit into the main types.

² STRO is a Dutch NGO that developed some innovative currency projects in the Netherlands and South America.

Essentially, four main types of CCs can be identified³: Service Credits; Mutual Exchange; Local Currencies; and Barter Markets.

Firstly, Service Credits such as Time Banks represent the most common type (50,2% of the clusters identified by Seyfang & Longhurst (2013)) and are grounded on the idea that everyone's time has the same value with a time-based currency. Members receive a time credit for each hour they provide a service to someone else and they can use this credit to benefit a service from another member. They target building social capital, cohesion and inclusion.

Secondly, Mutual Exchange currencies such as LETS comprise 41,3% of total projects in the sample of Seyfang & Longhurst (2013). Their value can either be linked to a national currency, be time-based or even a mix of the two. As two members exchange goods and services, one account is credited and the other is debited of the same amount. The sum of all accounts is always zero and the value of the currency is preserved by the trust the participants have in each other to meet their respective obligations. Moreover, they aim to provide access to additional liquidity and interest-free credit, and to encourage import substitution. Yet, they usually tend to balance between social and economic goals.

The third category, accounting for 7,1% of the systems, are Local Currencies. They are paper-based currencies sometimes convertible to national currencies and circulate within a geographically confined region. Some of the better-known examples of this type are Ithaca Hours in the USA, Regiogeld in Germany and Community Banks in Brazil. Their purpose is to complement the national currency, increase the local economic activity and support local businesses.

Lastly, Barter Markets that constitute a hybrid between a mutual exchange and a local currency represents only 1,4% of the reported projects. The most popular example of this category are the Argentinean barter clubs. Participants usually join a club and receive then some local currency, basically an interest-free loan. These currencies are not convertible and are utilized to exchange goods and services at regular market events. They mostly aim to foster solidarity economy but they also sometimes incentive the re-use of goods for environmental reasons.

Table 1 resumes the purposes of these four types. Accordingly, this paper will evaluate if the observed impacts reflect the stated objectives.

³ Seyfang & Longhurst identified those four main categories from a total of 3418 clusters of projects across 23 countries and 6 continents.

Table 1: Categories of community currencies and their stated objectives

Type of CC	Objectives
Service Credits	Build social capital, cohesion and inclusion
Mutual Exchange	Provide additional liquidity; ease access to interest-free credit; encourage import-substitution
Local Currencies	Increase local economic activity; support local businesses
Barter Markets	Foster solidarity economy; encourage environmental behaviours

3. Methodology

To assess the impact of Community Currencies, we conducted a systematic review by following guidelines of the PRISMA Group⁴ (Moher et al., 2009) and Littell et al. (2008). The challenge consisted in collecting and evaluating the most comprehensive evidence of impact assessment frameworks available in the literature. With this purpose, a variety of sources and strategies were used to capture as many relevant studies as possible. To be clear, this involved gathering and making sense of existing studies, not directly studying any particular CC.

Figure 1 below summarizes the methodology used for this review and the next subsections will explain the framework used in more detail.

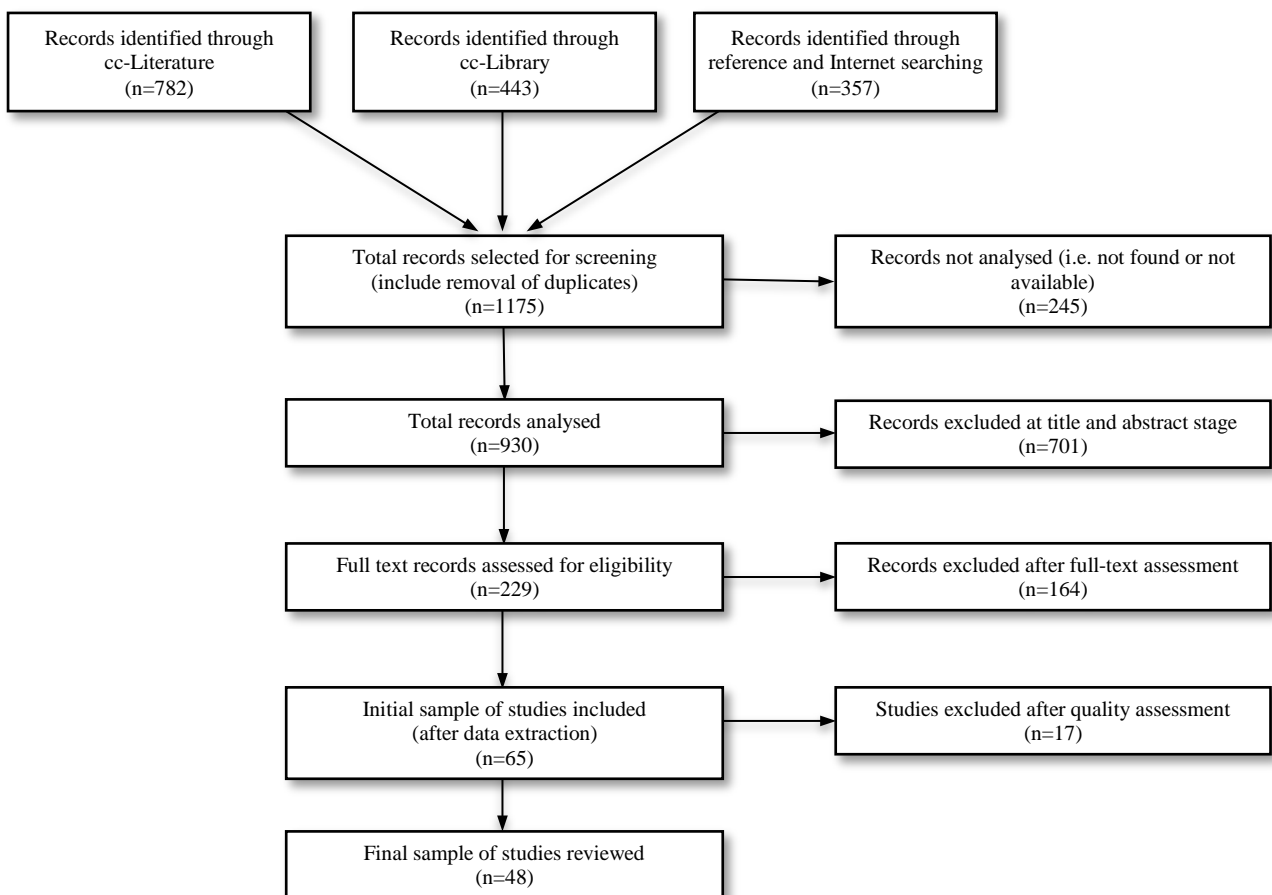


Figure 1: Methodological approach

3.1. Inclusion and exclusion Criteria

The following criteria have been used to consider relevant studies for this review.

⁴ PRISMA stands for Preferred Reporting Items for Systematic Reviews and Meta-Analyses

To be consistent with the primary purpose of this work, any studies assessing any impact of community currencies systems were eligible for the review. By contrast, papers referring indirectly to outcomes without directly evaluating them were judged as irrelevant.

On the one hand, both individual cases about specific CC projects as well as national studies of a specific type were included. On the other hand, studies assessing projects of a limited time-related scope with only short-term objectives were excluded as this paper focuses on impact for long-term sustainability.

With respect to language restrictions, only sources written in English, French and Spanish were included or considered. However, neither time nor geographical restrictions were applied.

According to the type of materials, newspapers articles and web articles were excluded. Moreover, I decided to include peer-reviewed studies as well as unpublished materials from the grey literature that I judged reliable, in order to extent the scope of the analysis. Nevertheless, as it will be explained afterwards, the quality of all the studies was assessed prior to the final analysis.

3.2. Search Methods and Strategies

3.2.1. Data gathering

The first step of this review consisted in grouping the widest array of publications dealing with community currencies as possible. With this aim, a total of three search methods were explored.

Firstly, we searched the online database of the field, namely the bibliography of community currency research, also called cc-Literature⁵, and a total of 782 papers were identified.

Secondly, the online library named cc-library was consulted on the Complementary Currency Resource Center website⁶, where 443 publications were accessible.

Finally, a total of 357 papers were identified through personal enquiry, including research on search engines and on-line publication databases (CIBLE+, Proquest, and Google), and the consultation of reference lists of papers dealing with CCs. Consequently, a total of 1582 records were identified for screening and after removing the duplicates, 1175 references remained to be examined further.

⁵ <http://www.cc-literature.de>

⁶ <http://www.complementarycurrency.org/>

3.2.2. Data selection

The second step was to determine whether the papers were eligible for the analysis. Different aspects of the reports were then examined. The titles and abstracts were first checked for relevance, and 701 records could be excluded on that basis. Next, the full texts of the identified papers were collected when available and were assessed to select those that fitted the inclusion criteria. In particular, two papers were excluded as they evaluated small CC pilot projects with short-term goals, whereas CCs are generally implemented for the long term. As suggested in the systematic review methodology, two authors reviewed the set of papers to validate the selection.

Thus, after assessment, a total of 76 records were judged relevant and were selected for the analysis. However, this list should not be considered exhaustive as 245 papers have not been able to be analysed⁷.

3.2.3. Data extraction

Relevant data was extracted from the selected studies using a data extraction template that was developed and adapted to Microsoft Excel, so that data from the different studies could be easily compared. This data extraction template, available in appendix A, included: reference information, characteristics of the CC systems studied, the objective of the study, the data collection methods, period of the study, member characteristics, impacts, and a quality score.

During the data extraction, some papers were evaluating the outcomes of several CCs. When they did it separately in a clear manner, they were considered as several separate studies. Similarly, when different publications were studying the same CC, using the same data and getting to similar conclusions, only one was conserved. However, when the same CC was evaluated by various studies made by different authors, at different periods of time and using different data, each study was identified separately.

Taking these considerations into account, the amount of papers analysed was reduced to 61 papers for a total of 65 studies⁸.

⁷ Papers not analysed included papers that I couldn't find or that were not available.

⁸ It should be noted that the amount of papers and studies differ because one paper could account for several studies.

3.2.4. Quality assessment

As studies vary greatly in quality, and in order to select the most reliable sources, I assessed the reliability of the studies by using an identical quality appraisal tool as McHugh et al. (2014), that was adapted from Popay (2006) and Downs & Black (1998). Accordingly, studies were issued with a score out of 14, corresponding to the following seven criteria: aims and objectives clearly stated; description of context; description of the sample; description of the intervention; description of methods used to collect and analyse data; attempts to establish the reliability of analysis; inclusion of sufficient data to mediate between evidence and interpretation. Each criterion was issued with a score of 0, 1 or 2, meaning respectively weak, moderate or strong. To distinguish between papers of different quality, those that scored less than 5 were given a “Low quality” score; those scoring between 5 and 9 were considered of “Reasonable quality” score; and papers with a score above 9 were considered “High quality”.

Consequently, only high quality scores were retained and 17 studies were excluded at this stage, leaving a total of 48 studies to be analysed.

3.2.5. Classification of impacts

Finally, the observed impacts of the CCs were collected and classified among the three dimensions of economic, social and environmental sustainability explained before. Additionally, they were divided according to the four types of CC systems. However, one study (Groppa, 2013) assessed outcomes of a CC project developed by STRO, which Seyfang & Longhurst (2013) excluded from their typology. Therefore, it was only used to assess the general results and was not included in any category of CCs.

4. Findings

4.1. Characteristics of the studies⁹

4.1.1. Initial sample (65 studies)

After going through the most comprehensive literature available on the subject, the initial sample of studies evaluating the impact of CCs and respecting the inclusion criteria amounted to 65 studies. While all were not included in the final analysis, let's first draw a global picture reflecting the actual state of research in the field by describing their characteristics.

⁹ A table summarizing the main characteristics of the studies is provided in Appendix C

To begin with, the publications were issued between 1993 and 2013. However, most studies were conducted before 2004 and involved CCs implemented mostly before that date.

In terms of their geographical scope, the sample shows some contrast. On the one hand, the different sources contain 56 individual studies of specific CC projects. On the other hand, it also includes 9 national investigations assessing particular CC systems at the national level like for instance, Time Banks in the UK or LETS in Australia. The CCs studied differ also in terms of their scale. For instance, the sample shows respectively 35, 135, 220, 642, 800, or about 2500 members; but the majority counts between 100 and 350 members.

With regards now to their localization, the CCs surveyed are dispersed across 21 countries over 6 continents, with an impressive majority of studies of European-based systems, accounting for 42% of the total projects. However, this is largely due to the great amount of studies in the UK about LETS or Time banks (30% of total). The second most reviewed continent is North America with 33% of the sample, including 9 studies in the United States and 4 in Canada. Africa is the less reported region with only 2 studies in South Africa and Kenya. This repartition seems consistent with the findings of Seyfang & Longhurst (2013) that reported only 0,9% of total international projects in Africa, and 68,3% in Europe.

Concerning their methodology, the 65 studies are not always collecting their data with the same strategies. While 55% use a mix of quantitative and qualitative approaches, 28% just use quantitative methods and 15% only qualitative methods. Heterogeneity in the studies' objectives also characterizes this sample. Indeed, while some aim to report specific outcomes by evaluating the effects of CCs on human health, wellbeing (Wheatley, 2006), unemployment (Seyfang, 2001), social exclusion, gender relations (Walker, 2009), or on the stability of the local economy (Stodder, 2009); others are targeting more generally the social or economic impact of CCs; and others just evaluate if CCs achieve their stated goals (Seyfang, 1997). Furthermore, no single study aims to directly assess environmental effects, and few clearly aim to evaluate both economic and social outcomes.

Despite this heterogeneity in studies' objectives, a total of 54, 51 and 6 studies are reporting economic, social and environmental impacts respectively. On this regard, caution should be used before making any conclusion as not all impacts observed can be considered significant.

4.1.2. Final sample (48 studies)

The characteristics of the final sample of 48 studies globally present the same contrasts as the initial sample, although in smaller proportions.

Realised during the period 1993-2013, this sample counts 43 individual studies and 5 national studies, of which 63% (n=30) use a mix of qualitative and quantitative methods, 31% (n=15) just use quantitative techniques and 6% (n=3) solely qualitative methods.

The CCs analysed are located in 17 different countries¹⁰ across 6 continents, with a majority of studies done in the UK (n=13) and the US (n=8). Moreover, the number of studies per type of CC can be summarised as follows: 19 (or 40%) Mutual Exchanges, 14 (30%) Service Credits, 10 (21%) Local Currencies and 4 (9%) Barter Markets.

According to the existing of impact assessment analysis, some economic, social and environmental outcomes have been observed respectively by 42, 39 and 5 studies.

Firstly, amongst the 42 studies of economic impact, are involved: all the studies dealing with Barter Markets (n=4) and Local Currencies (n=10), almost all Mutual Exchanges studies (n=18) and half of the Service Credits reports (n=9).

Secondly, with respect to the analysis of social impacts, the majority are analysing Mutual Exchanges (n=17) and Service Credits (n=13); followed by Local Currencies (n=6); and Barter Markets (n=3). Finally, the sample that addresses environmental impact contains only 3 studies of Service Credits, 1 of Mutual Exchanges, and 1 of Local Currencies.

As stated for the first sample, it is noteworthy that not all the impacts identified are significant, and the next section will present these findings in more detail.

¹⁰ In the alphabetical order: Argentina, Australia, Brazil, Canada, China, Colombia, El Salvador, France, Germany, Japan, Kenya, New Zealand, South Africa, Sweden, Switzerland, the UK and the USA.

4.2. Presentation of the results

4.2.1. Economic sustainability

The different impacts of CCs in terms of economic sustainability are summarized in Table 2 below.

Table 2: Summary of economic impact assessment

Rank	Economic impact	# Studies* (N=42)	Typology**			
			BM (N=4)	LC (N=10)	ME (N=18)	SC (N=9)
1	No significant impact on local economy	21 (50%)	2	5	13	1
2	Recognize and value informal work	15 (36%)	2	3	8	2
-	Improve employability	15 (36%)	/	4	6	5
4	Promote local economic activity	13 (31%)	2	5	2	3
5	Access to goods and services otherwise unaffordable	12 (29%)	1	4	3	4
6	Increase member income	10 (24%)	3	4	1	2
-	Improve quality of life in terms of standard of living	10 (24%)	/	6	2	2
8	Support local businesses	8 (19%)	1	4	1	1
9	Cushion External economic shocks	5 (12%)	2	1	1	/
-	Business incubator for small-enterprises	5 (12%)	1	/	3	/

*: Number of studies identifying each impact and, in parenthesis, the corresponding percentage of the total sample (N=42) assessing economic impacts.

** : Number of studies for each category (excluding the case of Punto Transacciones): Barter Markets (BM), Local Currencies (LC), Mutual Exchanges (ME), Social Credits (SC).

4.2.1.1. General results

Surprisingly, the most striking result to emerge from the analysis is that half of the studies (n=21) report that the economic activity of CCs is too low and not significant in macro-economic terms. For instance, Colacelli & Blackburn (2009) found that the implementation of the Red de Trueque had an added value to Argentina's GDP of just 0,6% while this system is considered as one of the most successful. Pacione (1997) also discovered that LETS activity in Scotland only represented a tiny proportion of GNP, while Williams et Al. (2001) referred to just £70 per person per year as average LETS trading levels in the UK. Furthermore, the studies of Birch & Liesch (1997), Seyfang (1997), and Fare (2012) of LETS systems in Australia, British LETS, and the French SOL revealed that the levels of trading were too low to have an meaningful impact on the local economy. However, 9 of these 21 studies observe that, despite this overall limited impact, it was significant for marginalized segments of the population. The second most visible impact, with almost 40% (n=15) of the sample, indicates that the implementation of CCs benefits the community by recognizing informal work and valuating skills usually not valued by the formal labour market.

Furthermore, according to a significant number of studies (n=15), CCs appear to improve employability either directly by creating jobs (n=3), either indirectly by the development of new skills (n=8) and the expansion of social networks (n=5). Still, 5 studies downplay this claim by describing that CC systems do not directly act as bridges into formal employment

and that the development of skills through these systems remains limited. For instance, Seyfang's study (2001) of the two LETS find that only 3 out of 45 people coped with unemployment and 2 acquired skills useful in the mainstream labour market.

Next, a third of the studies (n=13) highlight that CCs promote local economic activity, of which half (n=7) precise that CCs stimulated local consumption and increased the economic multiplier. Amongst these, a survey of 97 members of the French SOL indicated that 60,8% respondents consume more locally (Fare, 2012). Results from the program Punto Transacciones in El Salvador also support this statement: with about 500 businesses and 100 individuals, the operations of the scheme had generated the equivalent of nearly \$ 2.2 million during the year 2012 and engendered an increase in the spending multiplier (Groppa, 2013).

About 29% (n=12) of the sample report that CCs are effective ways to give access to goods and services otherwise not affordable, and this finding was confirmed by respectively 41%, 58,5% and 41,8% survey respondents taking part in two studies on the Ithaca HOURS (Jacob et al., 2004; Wheatley, 2006), the Calgary Dollars, and the Accorderie (Fare, 2012). Furthermore, a study on LETS systems in the UK found that 27.4 % of the goods and services would not have been acquired in the absence of LETS (Williams et al. 2001).

At the same time, about 24% of the surveys (n=10) observe that CCs help people to increase their income. Aligned with the previous result, 10 studies report that CCs increase the quality of life of participants through the accumulation of tangible benefits and improvement in standards of living. Additionally, several studies (Powell, 2002; de Franca Filho et al., 2012) indicate that it is even more the case for marginalized groups.

According to 8 studies, CCs also support local businesses, by increasing consumption and sales and giving them access to free-interest credits. Next, 12% of the studies sample (n=5) report that CCs act as cushions against external economic shocks during economic recessions. Amongst these, Stodder (2009) reported the counter-cyclical relation between the circulation of the WIR with GDP and period of high unemployment in Switzerland; demonstrating that the WIR had stabilizing effects on the national economy by notably securing employments. Finally, another minority of 5 studies indicates that CCs enhance the creation of small enterprises.

4.2.1.2. Results of the typology

The analysis now turns to the extent of economic impact each one of the categories of CCs have had so far.

Beginning with Barter Markets (BM), 3 studies of the Red de Trueque clubs observe an increase in members' income; and 2 out of the 4 highlight the stabilizing effect of CCs, the recognition of informal skills, and the promotion of localisation. However the study of Gomez & Helmsing (2008) reports that the positive effects disappeared in period of stability.

With regard to Local Currencies (LC), of the 10 papers studying this type, 6 are stating that LC improve living conditions and 5 describe LC as tools to promote localisation. However, 4 studies also find no significant impact on the economy. Moreover, 5 studies evaluate that LC support local businesses, improve employability, increase incomes and give access to unaffordable goods and services.

Regarding Mutual Exchanges (ME), a majority of 13 studies out of the 18 indicate no significant impact although 4 report significant impacts for excluded groups. However, respectively 8 and 6 studies consider that ME benefit the economy by valuing informal work, and improve employability mainly through the development of new skills (in 5 studies).

Next, with respect to Service Credits (SC), the most reported impacts are improved employability, easier access to goods and services and localisation of economic activity; each reported by 4 studies out of the 10 dealing with SC. Furthermore, the improvement of living standards and the increase in members income are each identified by 2 studies.

4.2.2. Social sustainability

Among the total sample analysed, 33 studies are identifying social outcomes (described in Table 3)

Table 3: Summary of social impact assessment

Rank	Social impact	# Studies* (N=39)	Typology**			
			BM (N=3)	LC (N=6)	ME (N=17)	SC (N=13)
1	Foster community building – build social capital	30 (77%)	2	6	13	9
	<i>Expand social networks</i>	21 (54%)	2	5	8	6
	<i>Increase trust</i>	12 (31%)	1	3	2	6
	<i>Improve relationships</i>	10 (26%)	1	4	3	2
2	Tackle social exclusion	12 (31%)	2	/	5	5
-	Boost self-confidence	12 (31%)	/	3	5	4
4	Improve quality of life in terms of well-being	9 (23%)	/	3	1	5
5	Act as social support	6 (15%)	/	2	3	1
6	Enjoy greater social than economic benefits	3 (8%)	/	/	1	2

*: Number of studies identifying each impact and, in parenthesis, the corresponding percentage of the total sample (N=33) assessing social impacts.

** : Number of studies for each category: Barter Markets (BM), Local Currencies (LC), Mutual Exchanges (ME), Social Credits (SC).

4.2.2.1. General results

Notably, a first observation emerging from Table 3 is that a strong majority of the sample (77%; n=30) reports that CCs build community and social capital in various different ways. About 31% of the studies (n=12) identify an increase of trust in the community, 26% (n=10) observe better relationships and greater friendship, and more importantly, 54% (n=21) indicate that CCs enables people to expand their social networks and meet new people.

Next, a third of the studies (n=12) assessed CCs as tools to tackle social exclusion by empowering marginalized groups, allowing the participation of all. Moreover, the recognition of informal work and giving access to goods and services otherwise not accessible for financially excluded people as explained in the section of economic impacts, are ways to address social exclusion (Fare, 2012; Jacob et al., 2004; Seyfang 2004b; Wheatley, 2006). The groups that benefit this social inclusion are the unemployed (Seyfang, 2001; Gomez & Helmsing, 2008; Williams et al., 2001), the low-income (Collom, 2007; Fare, 2011; Jackson, 1993; Williams, 1996) and the elderly (Collom, 2008; Kyriacou & Blech, 2003). On the other hand, only one study clearly examines CCs as offering a way to readdress gender inequities.

Along with the previous statement, 31% (n=12) of the studies highlight that CCs also have psychological impacts. Notably, surveys of members of Ithaca HOURS (Jacob et al., 2004), LETS in Australia (Birch & Liesch, 1997), in New-Zealand (Jackson, 1993) or in the UK (Pacione, 1997) found that CCs boost people self-esteem and confidence, by valuing their work and skills otherwise not recognized.

Another result, more general, indicates that about a quarter (n=9) of the sample considers that CCs contribute to improve the quality of life in terms of general well being.

Finally, 3 studies of Time Bank, LETS, Calgary dollars and Ithaca HOURS report explicitly that despite low economic outcomes, CCs offer social benefits and that the social benefits outweigh the economic ones (Panther, 2012; Seyfang, 1997; Wheatley, 2006).

4.2.2.2. Results of the typology

With regards to the different types of CC's, let's now analyse their impact in terms of social sustainability.

Firstly, of the 3 studies assessing social impacts of Barter Markets, 2 report that it allowed people to expand their social networks while also 2 studies established that CC's helped those financially excluded.

Secondly, all 6 studies about Local Currencies (LC) comment that they foster community building through increase trust (stated 3 times), greater friendship (stated 4 times) and more

social connections (stated 5 times). Boosting self-esteem and improved well-being were also reported by respectively 3 and 4 studies.

Thirdly, out of the 17 studies identifying social outcomes from Mutual Exchanges (ME), a majority of 13 highlights that ME build social capital, and 8 report that they allow meeting new people. According to the results, 5 studies also describe ME as tools for social inclusion and 5 other note that they boost self-confidence.

Finally, 9 out of 13 studies of Service Credits (SC) identify that SC build social capital, of which 5 report an increase in trust among the community. SC also help tackling social exclusion according to 6 other studies. Moreover, according to 5 studies, CC’s improve general well-being and notably provide health benefits to elderly people with specific Time Banks projects.

4.2.3. Environmental sustainability

Table 4: Summary of environmental impact assessment

Rank	Environmental impact	# Studies* (N=5)	Typology**			
			BM (N=0)	LC (N=1)	ME (N=1)	SC (N=3)
1	Encourage pro-environmental behaviour	5	/	1	1	3
2	Reduce ecological footprint	2	/	/	/	2

*: Number of studies identifying each impact (4 studies in total)
 **: Number of studies for each category: Barter Markets (BM), Local Currencies (LC), Mutual Exchanges (ME), Social Credits (SC).

4.2.3.1. General results

Only 5 studies explicitly identified environmental outcomes for CCs. First, the study of the Bow Chinook Barter Community (former version of Calgary Dollars) by Berthold (2000) identifies CCs as tools for recycling, reducing pollution and fostering environmental education. Second, Caldwell (2000) finds that LETS help to sustain the environment by keeping resources local and encouraging environmentally friendly attitudes. Third, a study of the Accorderie surveying members, demonstrates that the majority of respondents consumed more respectfully towards the environment and also consumed less than before (Fare, 2012). Fourth, Fare (2012) also describes in her study of the SOL that the majority membership consumed in a more ethically and respectful way towards the environment. Finally, Ruddick (2011) observed an environmental impact through waste removal and tree planting using the Eco-pesa local currency in Kenya.

4.2.3.2. *Results of the typology*

Of the 5 studies identifying environmental outcomes, 3 highlight Service Credits (Berthold, 2000; Fare, 2012), 1 mentions Mutual Exchange systems (Caldwell, 2000) and 1 deals with a Local Currency (Ruddick, 2011).

5. Discussion

5.1. Community currencies' achievements for sustainable development

This review aimed to evaluate the impact of CCs and explore whether they contribute to sustainable development by focusing on the three pillars of economic, social and environmental sustainability. With regard to the economic dimension, it should be noted that although there is some evidence that CCs promote localisation and support local businesses, the results of the analysis demonstrate that CCs' impact on the overall economic activity remains marginal. In addition, their impact seems greater in period of instability as was the case in Argentina with the RT, Switzerland with the WIR or El Salvador with Punto Transacciones. In fact, with the exception of the case of the Argentinean barter clubs that helped a large number of people to meet their subsistence needs during period of financial instability, the economic benefits of CCs tend to remain marginal outside of the context of crisis. One reason generally outlined in the literature and confirmed during the data extraction process regards the small scale of CC systems, and the low number of transactions per member. With such small scales, CCs are thus creating relatively small local economic circuits of exchange, and only a small proportion of wealth remains local.

Moreover, the studies included in the review suggested that one reason for the low participation rate is the lack of awareness on CCs. In fact, either people don't know that CCs exist or what they are, either they are not fully conscious of their potential. One study in particular revealed that improved mindfulness leads to increased participation, which in turn provides greater benefits (Wheatley, 2006). Moreover, McBurnie (2012) found a positive correlation between the awareness of benefits and the willingness of non-members to start using the CC. Therefore, more support is needed to promote CC projects as valuable experiments, as was the intention of this review.

Nevertheless, at the micro level, the findings indicate that CCs' contribution is significant for a small but substantial part of the population, namely the marginalized groups of the population that are also the most in need. Actually, by recognizing informal work and skills commonly not valued, improving employability through the expansion of social networks or the development of skills, and by giving access to goods and services otherwise not affordable in the formal market, CCs help a small but significant proportion of members that are usually excluded from society or trapped in poverty.

Moving on to another dimension, the argument is made that CCs achieve positive impact for social sustainability. There is strong evidence that they build social capital by increasing

trust, expanding social networks and improving relationships among the community. Moreover, CCs foster social inclusion by recognizing informal work and stimulating the participation of all without considering their situation in the formal economy. CCs thus contribute to more equitable and ethical relations of exchange away from the primary objective of economic growth.

Concerning the third dimension, the limited number of studies assessing environmental impact makes it difficult to come to any conclusion. This result is in line with Kennedy et al. (2012) who also suggest there is a small number of projects with specific environmental aims. In fact, there is little explicit evidence that CCs promote environmental sustainability. There is some evidence that CCs stimulate local economic activity, this could reduce the need to import products from other regions or countries and impact environmental sustainability by reducing transport costs and pollution.

CCs thus appear to have a greater social dimension of sustainability than on the economic and environmental ones.

5.2. Confronting goals and impacts of community currencies' categories

The sample of studies covered all four types of CC as defined by Seyfang & Longhurst (2013) and described in the theoretical section. Our attention now turns to whether the observed outcomes of each category reflect its stated goals.

Based on 3 studies on the Argentinean Red de Trueque clubs, evidence suggests that Barter Markets have a stabilizing effect on the economy, and that it indeed fosters the emergence of a more inclusive economy by helping people otherwise trapped in poverty, to recognize their skills, and expand their social networks.

As regards Local Currencies, there is some evidence that they achieve their objectives to increase local economic activity and support local businesses. Moreover, the results strongly suggest that they foster community building by developing social networks and promoting relations of trust.

Considering Mutual Exchange systems, although they are mainly claimed to support the local economy with interest-free credits and encourage import-substitution, there is more evidence that they benefit the community by recognizing informal work and improving employability through the development of new skills. Moreover, the results suggest positive outcomes in the social sphere, revealing that these schemes build social capital by expanding social networks. Actually, this insight is consistent with the view of Seyfang & Longhurst

(2013) that Mutual Exchange systems “lie on a continuum between economic and social objectives” (Seyfang & Longhurst, 2013: 73).

Finally, the observed impacts for Service Credits are reflecting quite well their social oriented objectives. As a matter of fact, the evaluation presented above has revealed that they are successful in building social capital and increase trust among the community. Moreover, they tend to tackle social exclusion by helping excluded groups and offering easier access to goods and services that would otherwise not be accessible.

Accordingly, whereas Service Credits is the only category of CC’s focusing on social objectives, Local Currencies and Mutual Exchanges also appear successful at building social capital. Otherwise, apart from Mutual Exchanges that do not appear to achieve their economic objectives, there is some evidence that the different CC’s types tend to realize their desired outcomes.

5.3. Impact assessment in the community currency field

Our results exposed should be considered with caution as more research is needed to draw definite conclusions. In fact, the limited number of studies evaluating CC’s impact represents a first constraint¹¹. Moreover, most of the CC schemes studied have existed for a long period of time and thus the evaluation doesn’t consider the development of more recent hybrid types of CC such as the project of Punto Transacciones that seems to offer modern and great solutions for sustainability.

Additionally, this research has demonstrated some limitations regarding the current state of development of impact assessment frameworks in the CC field. As highlighted previously, the present studies are using a wide range of different frameworks, methodologies and performance indicators to assess CCs’ outcomes, thus it is hard to make a comprehensive comparison. Moreover, in the high diversity in their objectives and in the type of impacts they evaluate, the impact assessments may ignore existing but non-observed outcomes. For instance, by focusing on social benefits, the analysis of economic outcomes may have been neglected, limiting in turn the global impact evaluation.

¹¹ Furthermore, the non-exhaustivity of the sample used for this review should be taken into account.

6. Conclusion

Community currencies have arisen in many communities with the purpose of affecting structural change and mitigating harmful effects caused by globalisation and our current economic system. This paper aims to contribute to the field of community currencies by providing an overall examination of their impact. Based on a systematic review of the most comprehensive and available evidence of impact assessment analysis in the literature, this paper explores whether CCs contribute to sustainable development on three dimensions: economic, social and environmental sustainability.

Although the results of the analysis provide some evidence of economic benefits on employability, informal work and localisation, one of the more significant findings to emerge from this study is that CCs do not seem to have a significant impact on local economic activity. Moreover, their implementation generally seems to only benefit a minority and, to a greater extent, groups that are excluded from the formal labour market or society. However, there is more evidence to suggest that CCs do have an impact on social sustainability by building communities of trust, support and stronger relationships on the one hand, and by fostering social inclusion of excluded groups on the other hand. Concerning the third dimension, the lack of assessment of environmental outcomes makes it difficult to make any definite conclusions and thus gives little support to the argument that CCs already contribute to environmental sustainability.

This paper also aims to verify whether the different types of CCs achieved their stated goals. With the exception of Mutual Exchanges that do not appear to fulfil their objective of supporting local economies, there is some evidence that the other CC's types do tend to realize their desired outcomes. Furthermore, whereas it is not the primary goal for all of them, Local Currencies, Mutual Exchanges and Service Credits seem to be successful at building social capital.

Taken together, these results suggest that the most positive contribution of CCs are their social benefits, and that the economic benefits are somewhat diminished by the small scale of these systems and the lack of awareness on their scope, making it difficult for them to have a significant impact on the local economy. Therefore, their impact on sustainable development remains relatively small for now. This is in line with Dittmer (2013) who finds out that existing research suggest that CCs only weakly supports that potential of local currencies as a tool for purposive degrowth. However, more research is needed to assess the impact of more

recent types of CC systems that have emerged over the last years, as they seem to have learned from previous experiences. A few new CCs with environmental aims have, for instance, been recently initiated.

Additionally, one should take these results with caution before drawing any definite conclusions, as this review has also demonstrated some limits regarding the current impact assessment methodologies applied in the field. Indeed, the examination was limited by the high diversity in methodologies used by the different studies analysed, which might narrow the observed results. More standardisation would help to provide a better overview of the evaluation data, facilitate a comparison of the different systems, draw greater general conclusions, and thus establish a greater degree of accuracy. Therefore, this paper encourages the use by future studies of common frameworks such as the “Impact Assessment Matrix” proposed by Place (2013) to further evaluate the impacts of existing and emerging CCs types. Such an extensive evaluation, it is hoped, would strengthen the legitimacy of CCs and foster their development.

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Appendixes

Appendix A: Data Extraction Template

Study info	Reference :	
	Title :	
	Date of publication :	
	Date of the study :	
	Type of study :	
CC info	CC studied :	
	CC type :	
	CC location :	
	Date of CC implementation :	
	Number of members :	
Methods of data collection	Qualitative methods used :	
	Quantitative methods used :	
	Characteristics of the sample studied :	
Objectives	Objectives of the study :	
Observed Impact	Economic sustainability :	
	Social sustainability :	
	Environmental sustainability :	
Quality	Quality score :	
Other	Additional notes :	

Source: Personal work

Appendix B: Summary of the characteristics of the initial and final samples

		Initial sample	Final sample
Sample size	Total studies	65	48
Type of studies	Individual studies	56	43
	National studies	9	5
Methods used	Qualitative	10 (15%)	3 (6%)
	Quantitative	18 (28%)	15 (31%)
	Qualitative & quantitative	36 (51%)	30 (63%)
Timing	Date of publication	1993 – 2013	1993 – 2013
	Date of CC implementation	1934 – 2008	1934 – 2008
Location	Countries, continents	21 countries, 6 continents	17 countries, 6 continents
	Europe	28 (42%)	18 (37%)
	North America	22 (33%)	13 (27%)
	South America	9 (13%)	7 (14%)
	Asia	13 (19%)	4 (8%)
	Oceania	10 (15%)	5 (10%)
	Africa	2 (3%)	2 (4%)
Type of CC studied	ME	23 (35%)	19 (40%)
	SC	22 (34%)	14 (30%)
	LC	14 (22%)	10 (21%)
	BM	5 (8%)	4 (9%)
	Other	1 (2%)	1 (2%)
Type of impact observed	Economic	54	42
	Social	51	39
	Environmental	6	5

Source: Personal work

Table 5: Categories of community currencies and their stated objectives

Type of CC	Objectives
Service Credits	Build social capital, cohesion and inclusion
Mutual Exchange	Provide additional liquidity; ease access to interest-free credit; encourage import-substitution
Local Currencies	Increase local economic activity; support local businesses
Barter Markets	Foster a solidarity economy; encourage environmental behaviours

Table 6: Summary of economic impact assessment

Rank	Economic impact	# Studies* (N=42)	Typology**			
			BM (N=4)	LC (N=10)	ME (N=18)	SC (N=9)
1	No significant impact on local economy	21 (50%)	2	5	13	1
2	Recognise and value informal work	15 (36%)	2	3	8	2
-	Improve employability	15 (36%)	/	4	6	5
4	Promote local economic activity	13 (31%)	2	5	2	3
5	Access to goods and services otherwise unaffordable	12 (29%)	1	4	3	4
6	Increase member income	10 (24%)	3	4	1	2
-	Improve quality of life in terms of standard of living	10 (24%)	/	6	2	2
8	Support local businesses	8 (19%)	1	4	1	1
9	Cushion external economic shocks	5 (12%)	2	1	1	/
-	Business incubator for small enterprises	5 (12%)	1	/	3	/

*: Number of studies identifying each impact and, in parenthesis, the corresponding percentage of the total sample (N=42) assessing economic impacts.

** : Number of studies for each category (excluding the case of Punto Transacciones): Barter Markets (BM), Local Currencies (LC), Mutual Exchanges (ME), Social Credits (SC).

Table 7: Summary of social impact assessment

Rank	Social impact	# Studies* (N=39)	Typology**			
			BM (N=3)	LC (N=6)	ME (N=17)	SC (N=13)
1	Foster community building – build social capital	30 (77%)	2	6	13	9
	<i>Expand social networks</i>	21 (54%)	2	5	8	6
	<i>Increase trust</i>	12 (31%)	1	3	2	6
	<i>Improve relationships</i>	10 (26%)	1	4	3	2
2	Tackle social exclusion	12 (31%)	2	/	5	5
-	Boost self-confidence	12 (31%)	/	3	5	4
4	Improve quality of life in terms of well-being	9 (23%)	/	3	1	5
5	Act as social support	6 (15%)	/	2	3	1
6	Enjoy greater social than economic benefits	3 (8%)	/	/	1	2

*: Number of studies identifying each impact and, in parenthesis, the corresponding percentage of the total sample (N=33) assessing social impacts.

** : Number of studies for each category: Barter Markets (BM), Local Currencies (LC), Mutual Exchanges (ME), Social Credits (SC).

Table 8: Summary of environmental impact assessment

Rank	Environmental impact	# Studies* (N=5)	Typology**			
			BM (N=0)	LC (N=1)	ME (N=1)	SC (N=3)
1	Encourage environment-friendly behaviour	5	/	1	1	3
2	Reduce ecological footprint	2	/	/	/	2

*: Number of studies identifying each impact (4 in total)

** : Number of studies for each category: Barter Markets (BM), Local Currencies (LC), Mutual Exchanges (ME), Social Credits (SC).

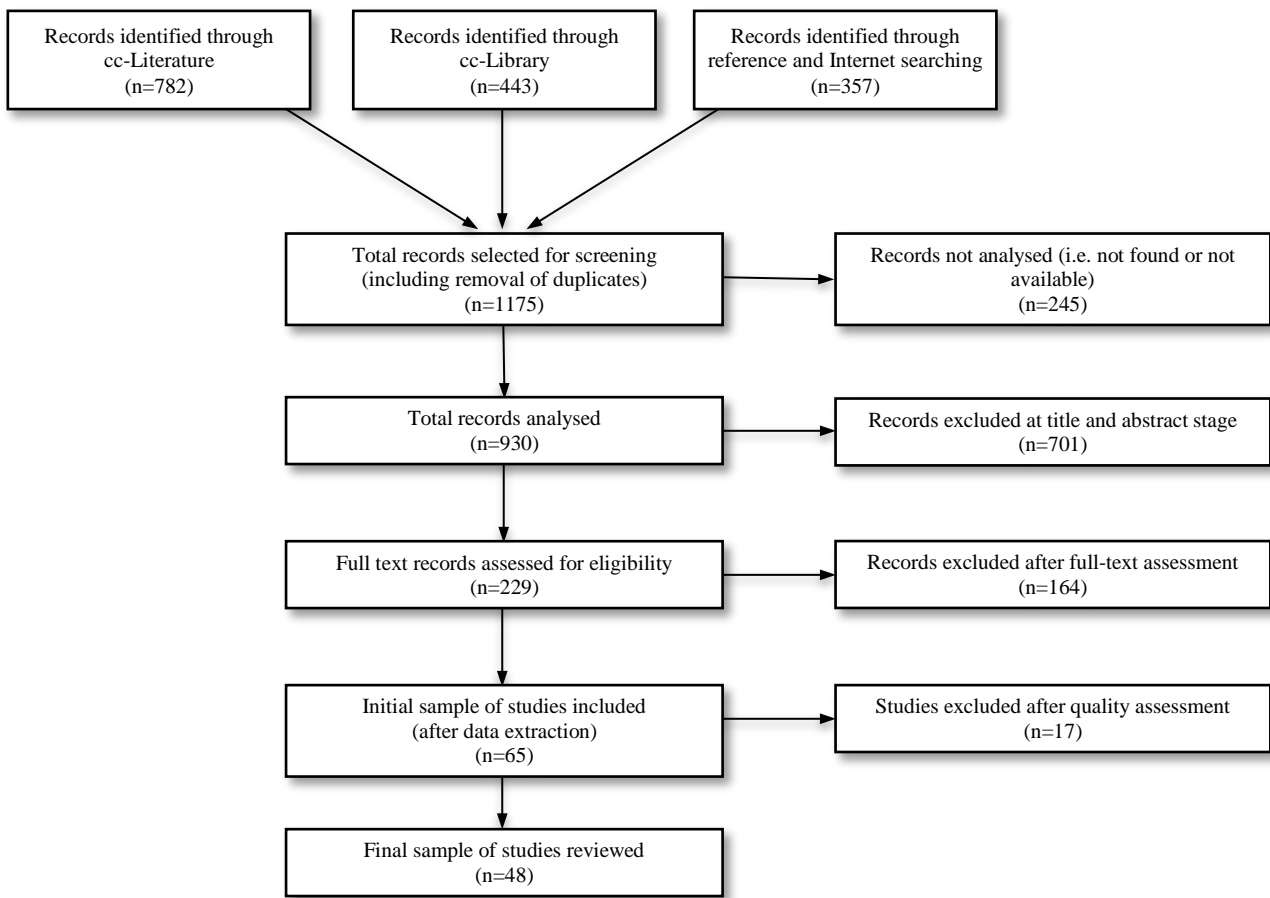


Figure 2: Methodological approach