

Growing Green Money? Mapping Community Currencies for Sustainable Development

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Abstract

Parallel sustainable monetary systems are being developed by civil society groups and non-governmental organisations (NGOs), informed by ecological economics perspectives on development, value, economic scale and growth, and responding to the unsustainability of current global financial systems. These parallel systems of exchange (or community currencies) are designed to promote sustainable development by localising economic development, building social capital and substituting for material consumption, valuing work which is marginalised in conventional labour markets, and challenging the growth-based monetary system. However, this international movement towards community-based ecological economic practices, is under-researched. This paper presents new empirical evidence from the first international study of the scope and character of community currencies. It identifies the diversity, scale, geography and development trajectory of these initiatives, discusses the implications of these findings for efforts to achieve sustainable development, and identifies future research needs, to help harness the sustainability potential of these initiatives.

1 Introduction

The need for more socially, economically and environmentally sustainable systems of finance and exchange has never been more evident than it is at present, in the midst of a global economic and ecological crisis (Mellor, 2010). Conventional policy framings of sustainable development suggest ecological modernisation solutions based around market transformation and green growth (OECD, 2011; UNEP, 2011), but these approaches have been criticised as inadequate in scope and ambition by academics (Jackson, 2009; Seyfang, 2009; Victor and Rosenbluth, 2007; Daly, 1992; Ekins, 1993; Martinez-Alier et al, 2010), commentators (Robertson, 1999; Douthwaite, 1992), policy advisory bodies (Porritt, 2003) and think tanks (Spratt et al, 2009). Instead, a 'new economics' approach is proposed, which argues that economic systems must be constrained by ecological and social limits, and which therefore advocates alternative conceptions of wealth and progress along the lines suggested by UNCED (1992), ethical business models, and new forms of money to realise these goals – or 'prosperity without growth' (Jackson, 2009; Boyle and Simms, 2009). While some proposals such as adjusted GDP models of national progress and wellbeing indicators are being incorporated into mainstream policymaking (Stiglitz et al, 2009; DEFRA, 2010; Michaelson et al, 2009), the larger challenge remains to create new systems of provision which embed more sustainable consumption patterns (Seyfang, 2009; Southerton et al, 2004). For many proponents of this new economics perspective, the development of new monetary systems is a critical factor in the shift towards sustainability (Boyle and Simms, 2009).

Beyond the realm of banks and governments, just such sustainable monetary systems are being developed by civil society groups and non-governmental organisations (NGOs). The terminology in this field can be confusing and contested (Blanc 2010; Collom et al 2012). In this paper the term complementary currencies is used to reflect the broader family of parallel money systems that exist in a range of different forms, from loyalty points systems to business barter schemes (Seyfang 2009). Their purpose is to provide some kind of means of exchange and create new 'circuits of value'. Within this wider family, the sub-set of community currencies (CCs) have been proposed as new tools to promote sustainable development (Lietaer 2001). Such systems are organised around 'not-for-private profit' principles and are intended to serve specific geographic communities (Collom et al 2012). The rationale is that money is a socially-constructed institution, so alternative systems of exchange, or financial services provision, can build-in more sustainable incentives and structures than conventional money (Douthwaite, 1996; Lietaer, 2001). Drawing inspiration from 1930s paper-based 'scrip' ¹

¹ Scrip is a substitute for legal tender, often paper-based. Many CCs could be considered forms of scrip but the term is often associated with systems that developed during the Great Depression in the USA (Greco 2001; Elvins

currencies, and other experiments in Europe such as the Wir, Wara and Wörgl (see Douthwaite 1996, Ch. 3), CCs such as Time Banks, Local Exchange Trading Schemes, ‘trueque’ barter markets and city-wide local currencies have spread across the globe in recent decades (Seyfang and Longhurst, 2013a). Often with connections to green social movements and organisations, their aim is to deliver services and functionality that mainstream cash cannot – such as keeping money circulating locally, or providing liquidity in cash-poor areas to relieve unemployment and enable people to meet their needs (see Slay, 2011 for a review of evidence). These community currencies have emerged from civil society and the third sector (see for example Greco, 2001; Dauncey, 1996; Douthwaite, 1996) as part of a bottom-up movement promoting ‘grassroots innovations’ to support a more radical approach to sustainable development (Seyfang and Smith 2007; Seyfang 2009; Seyfang and Longhurst, 2013b).

Community currency schemes have recently received central government support in Brazil and Venezuela, with other countries awaiting the outcome of these experiments. In the UK the ‘Big Society’ political agenda has led to policy interest in forms of ‘reciprocal exchange’, leading to financial support for a range of innovative grassroots experiments, whilst in France the SOL reflects an experimental currency partnership between the third, public and private sectors. However, the evidence base for this policy interest is patchy and geographically uneven. Existing academic research has examined CCs as initiatives to: tackle social exclusion and unemployment (Williams et al, 2001; Pearson, 2003; Seyfang 2001b, 2003, 2004); localise economies and improve resilience (Graugaard, 2012; Gregory, 2009); build social capital and civic engagement (Seyfang and Smith, 2002; Collom, 2008); promote sustainable consumption (Briceno and Stagl, 2006; Seyfang 2001a, 2006), and as alternative social movements (North, 2007; Collom, 2011). Generally, these studies rely on small numbers of case studies, or national surveys of particular CC types. To date there has been no international study to examine the scope, scale and character of community currencies in existence. This paper therefore presents findings from the first international mapping study of community currencies.

We present new empirical evidence from an international scoping study of community currencies (CCs). This study draws on documentary analysis, key informant interviews among academics and practitioners, and direct engagement in the field through an international workshop and journal special issue. We identify the most established and prominent distinct CC types in operation, evidenced through national clusters or networks of particular CC types. We show how they are informed by ‘new economics’ values and are being used to promote sustainable development. Typically, during economic downturns, popular interest in CCs rises and the current conditions are no exception – this paper therefore presents a timely analysis, to inform researchers, practitioners and policymakers of the scale and potential of these initiatives to promote sustainable development, at a time when conventional economic systems are in crisis.

The paper proceeds as follows: a literature review provides theoretical context for the study, presenting a green ‘new economics’ perspective on sustainable development. We then explain the rationale for the promotion of community currencies amongst sustainability activists and organisations who share these views. Our research methodology is described, identifying the originality of our study, and its limitations. Following this, we present our new empirical evidence of the scope, scale and geography of major community currencies, and then discuss these findings. Finally we conclude with reflections on the implications of this study for promoting sustainable development.

2 Theoretical Context: The New Economics and community currencies

2.1 The New Economics of Sustainable Development

Over the last three decades, ‘sustainable development’ has risen up the international environmental agenda, although initial proposals such as that from Agenda 21, to develop “new concepts of wealth and prosperity which allow higher standards of living through changed lifestyles and are less dependent on the Earth’s finite resources and more in harmony with the Earth’s carrying capacity”

2012; Gatch 2012). Certain forms of scrip required stamps to be periodically purchased and affixed, a design feature called *demurrage* which is intended to encourage the currency to be spent and which is a feature of some contemporary models such as certain German Regiogeld systems.

(UNCED, 1992: section 4.11) have struggled to be realised. As countries sought practical ways to pursue sustainable development, in 2003, the New Labour UK Government was the first to announce a strategy for sustainable consumption and production – which it defined as “continuous economic and social progress that respects the limits of the Earth’s ecosystems, and meets the needs and aspirations of everyone for a better quality of life, now and for future generations to come” (DEFRA, 2003:10). In 2011, the UK Conservative-Liberal Democrat coalition government announced new sustainable development priorities which emphasise “stimulating economic growth and tackling the deficit, maximising wellbeing and protecting our environment, without negatively impacting on the ability of future generations to do the same” (DEFRA, 2011:2). In practice, there is little difference, as both aim to decouple economic growth from environmental degradation, through a range of market-based measures, reflecting an international hegemony of ecological modernisation which is neatly summarised in two recent key documents: The United Nations Environment Programme states “the greening of economies is... a new engine of growth” (UNEP, 2011:3) and the OECD’s Green Growth agenda is “the familiar agenda of economic policy with the added realisation that it can be as good for the environment as for the economy” (OECD, 2011:8).

This market-based approach to achieving greener economic growth has been criticised on a number of grounds, not least by the UK government’s own Sustainable Development Commission (Porritt, 2003; Jackson, 2009), for a failure of scope, ambition and achievement. Critics claim that, amongst other things, its oversimplification of market transformation driven by rational, environmentally-informed choices and consumer sovereignty, is blind to the culturally-embedded, social and psychological drivers of consumption behaviour, and secondly it fails to see the social infrastructure and institutions which constrain choice to that available within current systems of provision (Monkhouse and Dibb, 2011; Sanne, 2002; Southerton et al, 2004; Levett et al, 2003). Furthermore, it fails to recognise environmental limits to economic activity, and assumes efficiency measures will solve environmental problems, when actual consumption levels have been far outstripping the savings from efficiency measures in recent years, meaning that absolute (rather than merely relative) levels of consumption must be addressed (Jackson, 2009). This perspective argues that current systems of provision limit the potential for individuals to choose to consume more sustainably. Consequently, new, alternative infrastructures and institutions of provision and consumption are required, based upon a foundation in alternative values, development goals, motivations and definitions of wealth. Advocates of this approach draw out the political economy of, and richer sociological meanings attached to consumption and point to collective institutions as the source of potential change (Maniates, 2002; Fine and Leopold, 1993). But what values should these new institutions embody?

Critics of the conventional ecological modernisation approach to sustainable development propose an alternative vision of sustainable development, based upon a ‘new economics’ heterodox paradigm (Ekins, 1986, 1993; Henderson, 1995; Daly 1992; Schumacher, 1993; Boyle and Simms, 2009; Jackson, 2009; Seyfang, 2009; Martinez-Alier et al, 2010). This ‘new economics’ perspective encompasses various disciplines, such as feminist, ecological, humanistic and institutional economics. It combines concern for social equity and environmental protection with embedded, resilient economies, and argues that sustainability requires a realigning of development priorities away from the primary goal of economic growth (Jackson, 2009). With long-standing foundations (see Lutz, 1999), the UK’s ‘New Economics Foundation’ was established in 1986 (see Ekins, 1986) and the USA’s 30-year old Schumacher Society was reborn as the New Economics Institute in 2010 to further these theoretical and policy-relevant ideas (Boyle and Simms, 2009). Key principles include recognising that the market economy rests on a bedrock of environmental, social and public economies, and measuring the contributions of these sectors to fully account for their vital contributions; as a result, ‘work’ is redefined to include unpaid work outside the home, and ‘wealth’ is redefined to incorporate wellbeing rather than material consumption (Robertson, 1999; Douthwaite, 1992). This literature also advocates localised economies shielded from the harsh impacts of globalisation and external economic shocks (Jacobs, 1984; Schumacher, 1993; Hopkins, 2008), proposing an ‘evolution from today’s international economy to an ecologically sustainable, decentralizing, multi-level one-world economic system’ (Robertson, 1999:6). This perspective applies an equity-based understanding of environmental governance, drawing on ‘ecological footprinting’ indicators to envisage the inequitable distribution of ‘ecological space’ (the footprint of resources and pollution-absorbing capacity used by citizens)

(Wackernagel and Rees, 1996; Simms et al, 2006). Addressing this inequity requires a reduction in material consumption among citizens of affluent western economies (ibid). Fundamental to the achievement of each of these objectives is a social and material context that enables sustainable production and consumption: the creation of new cultural and physical institutions that constitute more sustainable systems of provision, and this body of thought places a strong emphasis on bottom-up grassroots attempts to build new institutions or parallel public infrastructure (Douthwaite, 1996). Community currencies are one such example that has been promoted by new economics thinkers and organisations, and the reasons for this are discussed below.

2.2 Community Currencies and Sustainable Development

Money and the medium of exchange in use among any social group is a temporally- and geographically-specific social construction, embodying particular values, incentives, structures of consumption and cultural meanings (Zelizer 1994; Evans, 2009; Lee, 1996). While these tend to be overlooked by conventional economists who claim money is a neutral technology (eg Lipsey and Harbury, 1992), 'new economists' recognise the deeply embedded constraints and opportunities, meanings and values inherent in any particular configuration of monetary form (Boyle and Simms, 2009). Money is traditionally defined as being a medium of exchange, a store of value, and a unit of account; in fact it is unique in this historical period that all these functions reside in a single official national currency; for most of history, different forms of money have served these separate purposes (Douthwaite, 1996; Greco, 2001; Lietaer, 2001). In general, CCs do not try to replicate all the 'general purpose' functions of conventional money, rather they are 'special purpose' currencies, and might attempt to provide additional liquidity when a medium of exchange is in short supply; or offer a store of value that can only be saved for certain purposes, or incentivise certain types of behaviour. In addition, complementary currencies are nothing new, having always existed alongside state-backed money; however, in times of recession and economic crisis, parallel forms of exchange appear more attractive and a new cycle of experimentation and growth of CCs occurs (Stodder, 1998); the current crisis is no exception. It is at such points that systems can receive both positive and negative attention from public authorities. As detailed below, in some cases, governments will support currency experiments, in others they will scrutinise for their tax or benefit implications. This has proved a problem for some systems, but despite suspicions to the contrary, the tax implications of such systems are normally transparent and straightforward.

Of course, complementary currencies are not exclusively oriented towards this 'new economics' vision of sustainable development. Air miles and supermarket loyalty points are commercial complementary currencies which are earned, stored and exchanged for goods and services, and which are intended to encourage us to purchase more commercial products within a strong ecological modernisation paradigm. In contrast, however, the 'new economics' CCs of interest here are generally instigated and run by civil society groups and NGOs, set up in response to the perceived unsustainability of conventional economic systems. Moreover, many CC advocates and practitioners have been inspired by the green movement, and CCs are a common feature of green economics and political economy writing, indicating their place as a tool for achieving sustainable development (Mellor 2010; Dauncey, 1996; Douthwaite, 1996; Greco, 2001; Robertson, 1999; Hopkins, 2008; Kent, 2005). Furthermore, many 'new economics' think tanks and NGOs have been at the forefront of currency experimentation over the last 30 years, for example the New Economics Foundation (UK), Strohalm (the Netherlands), The Schumacher Society (USA), SANE (South Africa) and Living Economies (New Zealand).

For some among this body of advocates, a key rationale for community currencies is a rejection of capitalist credit-money; in other words, an ecological critique of modern financial institutions indicates how a debt-based system of money creation relies upon an ever-expanding economic system, to allow the repayment of loans with interest (Rowbotham, 1998). As a finite system (the environment) cannot sustain an ever-expanding subsystem (the economy), this monetary model is unsustainable, and should be replaced with something not inherently expansionist, claim monetary reformers within the CC movement (Greco, 2001; Robertson, 1999; Lietaer, 2001). A CC can explicitly embed economic exchange within ecological limits through backing the money with real biophysical resources such as energy kWh, thereby constraining its expansion (Swann, 1981). There are currently

initiatives being proposed which link CCs to personal carbon allowances, water, and other ecosystem services. There is therefore an overlap between monetary reform movements and community currency movements, although this overlap is uneven and does not encompass all systems or activists. Beyond the arguments relating to the role of the monetary system in sustainable development, there are a number of other reasons why community currencies have been promoted as tools that can contribute towards the three pillars of sustainable development.

2.2.1 Economic Sustainability

The reorganisation of the economy is often considered a fundamental pre-requisite for sustainable development (Porritt, 2003) and there are a number of different ways in which it is envisaged that community currencies can contribute to this process of re-configuration.. First, grassroots eco-localisation movements frequently cite *local* currencies as key tools for sustainability, because they build local circuits of economic value and prevent wealth 'leaking away', thereby increasing the local economic multiplier and promoting localisation (e.g. Douthwaite, 1996; Hopkins, 2008). Second, essential work performed in the non-market economy of informal work, skills exchanges, voluntary activity and domestic labour (which is crucial to a functioning market economy) can be effectively valued, recognised, exchanged and rewarded using CCs. This can counter the trend towards 'squeezing out' such labour by formal-employment-focused social policies, and help build more convivial economic relations where cooperation and sharing is valued (Henderson, 1995). Third, CCs offer a supplementary means to access to goods and services to those who might otherwise be financially excluded or unable to find formal employment (Williams et al, 2001). Fourth, CCs are argued to support sustainable economic development among small and local/green businesses, who are felt to show more loyalty to local communities, through providing mutual credit systems among local businesses, allowing them to trade amongst themselves without the need for cash (Shuman, 2000). Some CCs specifically support social enterprises and sustainability-focused businesses (Fare, 2011).

2.2.2 Environmental Sustainability

The potential positive environmental impacts of CCs are similarly manifold. First, CCs are claimed to reduce ecological footprints through: enabling more localised consumption patterns and import substitution, thereby reducing energy required for transportation (Douthwaite, 1996). Second, CCs can facilitate resource-sharing and provide an accessible reuse market for unwanted goods through new social institutions for collaborative consumption and sustainable 'product service systems' to form (Briceno and Stagl, 2006; Botsman and Rogers, 2010). Third, CCs allow people to meet their psychological needs (such as for recognition, belonging, self-esteem, sense of purpose) through social interaction, rather than through material consumption thus reducing their ecological footprint (Ryan-Collins et al, 2008; Seyfang, 2010). Fourth, some currencies directly address pro-environmental behaviour, for example rewarding citizens who participate in recycling programmes, or who purchase more sustainable products or use public transport (Holdsworth and Boyle, 2006). Finally, CCs could potentially encourage the development of new green technologies, for instance in the case of renewable energy, by raising investment capital by issuing notes backed by future energy production, and redeemable against future production (Turnbull, 2009).

2.2.3 Social Sustainability

For some CC advocates, their primary objective is to enhance social aspects of wellbeing. This can occur in a variety of ways, for example by rewarding acts of neighbourly support which promotes a sense of community, building trust and social capital amongst participants (Cahn, 2000; Collom, 2008). Initiatives of this type are particularly useful in areas where communities have fragmented and local trust relations have broken down, and they seem to foster 'bridging' social capital amongst disparate social groups (e.g. teenagers and elderly residents, or across racial or cultural divides), and enable participation by 'hard to reach' excluded social groups (Seyfang and Smith, 2002). Implicit in this model is the view that everyone has something to offer, including those whose skills are not valued by the formal labour market. CCs empower socially-excluded groups, thereby boosting self-esteem, self-confidence, social participation and wellbeing (Naughton-Doe, 2011). Indeed, these aspects motivate

the many health-based CCs, which aim to counteract isolation and depression in particular, as well as enabling elderly people to remain independent and healthy in their homes for longer (Ryan-Collins et al, 2008). Each of these factors has knock-on effects for sustainable development. In other types of CC, the small interactions that accompany more economically-motivated transactions also add up to a growth in community spirit and friendship networks (ibid).

Having identified the multiple ways in which CCs could possibly contribute to new economics visions of sustainable development, attention now turns to an exploration of how this is put into practice.

3 Methodology

Our scoping study aims to establish the size, scope, character and development trajectory of the major sustainability-focussed CCs in operation around the world. As researchers we are well-placed to access this information, having successful previous working relationships with key CC practitioners and organisations, and being well-known in both academic and practitioner CC circles. Our data sources include: a review of existing empirical studies of CCs, both from academic sources and practitioner networks; reviewing CC literature (online and paper-based) to ascertain current levels and modes of activity; elite interviews with CC practitioners and figureheads of the various CC groups; consultation with leading CC developers at an international project seminar convened to share current knowledge and experience between CC groups; engagement with our advisory panel of CC academic and practitioner experts; finally, we co-edited a special issue of the *International Journal of Community Currency Research* comprising 15 papers on new developments in the field (Longhurst and Seyfang, 2011).

Reciprocal exchange of the type instituted within CCs is a long-standing feature of all societies, and we do not presume to be investigating an entirely new phenomenon. The CCs in evidence are all, to some extent, inheritors of previous informal experience and practices, presented in a modern context. However, our interest is in the types of *formalised* CC initiative that are in relatively widespread use, that could potentially be harnessed for policy objectives; we focus on those that have grown and diffused beyond experimental isolated initiatives, to establish some form of national grouping, network or cluster of projects. To this end, for our international scoping we sought to identify CC types with at least 5 active projects in a country, and we looked for evidence of formal or informal networking to signify a developing cluster of projects. Although the spread of information technology has increased the scope for project networking and group promotion enormously, a significant difficulty we encountered was the general and widespread lack of reliable data on the number of CCs in any particular country or network, never mind data on the size or activity rates of these projects. Websites with lists of CC groups and contact details were sometimes long out of date, or very obviously not representative of what we knew to exist. We base our analysis on the claims made by key CC practitioners, and have, where possible, sought triangulation to test their validity (more detailed national CC case studies are to follow in a separate paper). In addition to gathering secondary data, an email survey was undertaken between October 2011 and February 2012. This focused on key informants associated with each national type and sought to verify data gathered from elsewhere as well as perceptions relating to the 'trajectory' of each national type (see section 4.3). The paper reflects analysis of the most accurate data that could be obtained by March 2012.

The findings below are based upon an analysis of these established CC movements. In addition, there are some other categories of CC that fall outside our scope, yet are nevertheless significant for understanding CCs' potential contribution to sustainable development, and in the interests of comprehensivity, we briefly mention them (and justify their exclusion) here. First, we include the South Africa-based CES (Community Exchange Systems) projects, but exclude the rest of the international network of CCs which share the CES common online system for managing members and transactions. In 2011, CES listed 329 projects, but the vast majority of these also identify as mutual exchanges (mainly LETS) or service credit schemes (mainly Time Banks) within their own national CC type networks; including CES as a separate entity in each country would therefore be double-counting. Second, obtaining accurate figures for Japan was also difficult partly because in some cases there are differences in the way that systems are counted, either as separate projects or as one project that has multiple branches (we have tried to standardise by counting the local project branches). Furthermore,

although they follow similar principles, the Japanese names do not easily translate into the western types that we have adopted. We have taken advice from local experts on how best to resolve these issues. Third, there are several potentially promising one-offs and a host of emerging new models which have not yet become widely established (an analysis of these will follow in a separate paper), and fourth, as we are examining well-established clusters of initiatives, we exclude 'under the radar' CC projects that exist without an online presence or evident membership of any active CC networks. Fifth, as our focus is on community-based CCs, we exclude commercial barter and incentive-based loyalty schemes such as those which reward recycling or purchase of sustainable goods and services. Our final omission is the work of STRO, a Dutch NGO who have been at the forefront of currency experimentation in both the Netherlands and, more recently, South America (Brenes 2011). STRO have been responsible for developing a range of different innovative projects which are more significant than many of the 'one off' experiments we have observed, but which do not easily conform to the 'national type' unit of analysis adopted in this paper, nor reach the minimum 5 projects. However, their work is clearly significant and worthy of further investigation. Our empirical study therefore comes with an important caveat that while there are doubtless gaps in our data, we have systematically gathered all the reliable evidence that was available and within our remit.

Our scoping is geographically-based, as the cultural, social and policy contexts in different countries have profound impacts on the types of CC which flourish; at the same time, we see certain core CC models which have spread across many countries, with local adaptations or variations. We identify these by type, but we do not presuppose that these local initiatives are homogenous. Similarly, we recognise that CC projects within a country, even of the same CC model, may be quite different in terms of their mode of operation or objectives. Nevertheless, we have sought to classify CCs by country and type, and to capture their objectives and development over time. We have not attempted to analyse the full diversity of these multiple local projects, but rather to concentrate on the commonalities between CC projects as evidenced at the national level, e.g. through network-level statements and publicity, etc, as this more accurately depicts the way the CC type is presented to the wider public. Identifying the primary objectives of CC types has not always been straightforward, as models morph and adapt, hybridise and evolve over time; nonetheless we believe we can usefully categorise the CCs according to sustainability objectives, while acknowledging that projects have diverse goals, and that the typology is necessarily a simplification of the full range of activities and motivations in existence.

4 Findings: Mapping Community Currencies for Sustainable Development

4.1 Identifying Community Currencies

We found a total of 39 nationally-based currency groupings, in 23 countries, across six continents, representing a total of 3418 local projects (see Table 1 for details). We categorised these national currency groupings into four major types of CC. Although the difficulty of developing currency typologies is well documented (Blanc 2011; Martignoni 2012), we built on well-established categories within the literature and practice: service credits (e.g. Time Dollars/time banks), mutual exchange schemes (e.g. LETS), and local currencies (e.g. Hours), to which we added a fourth group: barter markets (e.g. Trueque)². We next describe some of the significant features of the characteristics, frequency and distribution of the four types.

² Our categorisation obscures variations among CCs of a particular type, and sometimes overstates the distinctions between them. For example, many European mutual exchange systems use time to denominate their currencies. Therefore, in operation, they are very similar to what Collom et al (2012) would call a community-based Time Bank. One example is the Italian Banche del Tempo. The literature suggests that these systems were inspired by the LETS model, and yet they call themselves Time Banks and network with the Time Bank movements in Spain and Portugal. In such situations, the categorizing of currencies was established by assessing their self-identification, their networks, and by taking advice from activists or other currency experts.

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Table 1: Summary of National Community Currencies

4.1.1 Service Credits

The most common type of CC found in our study was service credits, with 1715 projects identified (50.2% of the total), spread across 11 countries and 4 continents. Service credit systems usually aim to build social capital, inclusion and cohesion by rewarding neighbourly support, social care and community-based activities, and work as formalised reciprocal volunteering schemes: members enrol and list the services they wish to offer and receive, and a central broker matches people up to organise the exchange. The time-based currency unit is fundamental: participants earn a time credit for each hour spent helping someone, regardless of the service provided – these credits can be saved up for future use, donated to someone else, or used to purchase services from other members. This represents a radical rejection of market valuations of labour – everyone’s time is worth the same (Cahn, 2000).

The most commonly known of this type is ‘Time Banks’, although not all the service credit projects identified here are formally part of the international Time Banking network. Early examples of ‘Fureai Kippu’ (ticket for caring relationship) are recorded in Japan from 1973, but the idea did not spread from there (Hayashi, 2012). In parallel, in the USA, Edgar Cahn developed the idea of ‘service credits’ or ‘time dollars’ in 1986, to utilise untapped skills and resources in deprived neighbourhoods, to rebuild communities and restore dignity to the socially excluded. This model of Time Banking spread across the USA, and then to the UK in 1997, via David Boyle and the New Economics Foundation, and since then strong UK and US networks have developed best practice and support for new projects, with international adaptations in Italy, Spain, Portugal, New Zealand, Finland, Canada, and Japan. Recently, in the UK, new models and adaptations are being developed based on agency-to-agency reciprocity and on organisations incentivising participant behaviour (e.g. Spice in the UK), and specifically focusing on social care (Care4Care). Within the UK, service credit models have been gaining policy interest as part of the UK Government’s ‘Big Society’ agenda (HM Government, 2011). These new models are more instrumental, and less focussed on building neighbourhood mutual self-help and reciprocity.

4.1.2 Mutual Exchange

The second most prominent category of CC is mutual exchanges, which accounted for 1412 (41.3%) of the projects we found, and included groupings in 14 countries among five continents. Mutual exchange currencies are created by the act of spending: one person’s credit equals another’s debit to the system, accounts always sum to zero and the both the value and utility of the currency is maintained by trust in other members to meet their commitments (as ‘debts’ are known). Mutual exchanges usually operate within a defined geographical area, providing users with access to interest-free credit which can be ‘spent’ within the trading circle. Members advertise ‘wants’ and ‘offers’ in a directory; a central accountant records transactions – traditionally paper-based, many systems now use online accounting systems. Some projects link the value of their currency to national currency; others prefer a time-based system; some even mix time and currency values. Research indicates that although mutual exchanges are clearly aimed at supporting local economies, it is the social and community-building benefits which have greatest impact through fostering social networks (Seyfang, 2001; Williams et al, 2001).

The most well-known example is the Local Exchange Trading Scheme (LETS), pioneered on Vancouver Island, Canada, 1983, by community activist Michael Linton, as an ‘emergency money’ during recession. LETS generally emerge from civil society, and they spread rapidly through Canada, UK, New Zealand and Australia during the 1980s and 90s via ‘new economics’ and green activist networks (Ekins, 1986; Croall, 1997). Replication of grassroots groups is the main route to growth, facilitated by

low-tech, low-cost paper-based mechanisms. There was some UK local government involvement in the early 1990s, and in Europe till the present day, and national networks have waxed and waned as funding allows. Growth in the UK peaked in the late 1990s; in Europe some years later. Nationally-specific adaptations of LETS are evident in France, Hungary, Germany, Austria, Switzerland, and Australia, and similar models have sprung up in South Africa, Japan and French-speaking Canada. There is ongoing innovation with new technologies and forms, and several other CCs have been inspired by LETS, leading to new forms and hybrids. As noted above, the CES model is inspired by LETS and provides an electronic platform on which mutual exchange can take place. This system originated in South Africa but has spread internationally and has been used by existing mutual exchange systems as well as new ones. Also of particular interest is the Talente Tauschkreis Vorarlberg which is a large and stable mutual exchange system in Austria that has also developed a linked local currency scheme.

4.1.3 Local Currencies

The third group of CCs is geographically-bounded, paper-based 'backed' local currencies, comprising 243 projects (7.1%) from 6 different countries and four continents. Inspired by regeneration-focused depression-era stamp scrip, contemporary cities and regions have issued local currency notes to circulate within a geographically-bounded region, increasing the local economic multiplier and supporting local businesses. In some cases these are convertible to national currency, thereby forming 'local exchange vouchers' redeemable only within certain areas or with participating businesses; once issued, they circulate freely until being converted back to national currency (Kaplan, 2011). Such currencies are intended to complement the national currency, increasing the velocity of local exchanges but not supplanting national currency or inter-regional trade. The demands of business participation means that particular attention is paid to security features; many systems use conventional currency printers to produce their forgery-resistant notes.

This category includes Hours currencies, which originated in Ithaca, New York State, USA, in 1991, followed by more in the USA and Canada linked to green and alternative grassroots groups, and other similar schemes elsewhere which use local currency to boost local economic activity. The US Hours CCs have plateaued with relatively small numbers of projects, and there is no national network explicitly linking or supporting them (see Wheatley et al, 2011 for a review of a long-running Canadian system). The German Regiogeld (regional money) projects are more focussed on local economic development and have a strong network sharing best practice and experience, and have seen a period of growth, followed by a current consolidation (Gelleri, 2009). The Brazilian Community Banks issue 'social' currency as part of a solidarity economy-based movement towards economic development and citizen empowerment which aims to boost local economic activity in cash-starved marginal regions, indicating a politically progressive agenda (De Melo Neto Segundo, 2010). A local currency model came to the UK in 2007 and has been growing slowly to 5 currencies at present; although there is no formal networking activity between these, there is shared learning and experimentation with electronic payment mechanisms to increase uptake. The Bristol Pound is the most recently-launched with online and electronic payments alongside paper notes, and claims to "support Bristol's independent businesses, strengthen the local economy, keep our high streets diverse and distinct, helping build a strong community" (Bristol Pound, 2012). These are all associated (to a more or less visible extent) with the Transition Towns grassroots degrowth and localisation social movement, and aim to increase local economic resilience (Graugaard, 2012; Ryan-Collins, 2011).

4.1.4 Barter Markets

Our fourth category, barter markets, accounted for 48 (1.4%) of the projects, operating in 4 countries from 2 continents. These are a hybrid of local currency and mutual exchange, comprising a new infrastructure to enable people to exchange goods and services within a limited site-specific event without the need for mainstream currency. Within this type, individuals normally join a local club and are issued with some local currency – effectively an interest-free loan. These are non-convertible and are used to trade with other members at regular dedicated markets (Pearson, 2003).

These first emerged in Bernal, Buenos Aires, Argentina, as a sustainability initiative instigated by an environmental NGO in 1995. Emerging in a context of deindustrialisation and fiscal crisis the barter

networks expanded rapidly during the Argentinean financial collapse of 1999-2002, and became a lifeline for a very wide demographic (ibid). The Argentinean barter clubs were beset by rivalry between competing networks and suffered a catastrophic collapse in credibility following a critical television documentary in November 2002 (North 2007). However, some Argentinean systems still remain and similar models have been adopted in Venezuela and Mexico where it has become closely associated with ideas of the solidarity economy (de Sousa Santos 2006). Informal barter markets are also likely to be operating 'below the radar' in other South American countries. A barter market system (Troc-tes-Trucs – 'swap your stuff') has also emerged in Quebec, Canada - a region with a strong social economy movement (Mendell 2011), However, this system has a stronger emphasis on supporting sustainable development through the reuse of goods, than the economic solidarity ideology which motivates the Mexican and South American systems.

4.2 The Geography of Community Currencies

Having identified four major types of CCs for sustainability, their prevalence (shown in Table 1) and their particular characteristics and objectives, attention now turns to the geographical diffusion of these initiatives. Figure 1 presents data about numbers of local CC projects, showing how the four CC types are distributed across different continents. This reveals that Europe has the greatest number of CC projects, with 2333 projects out of 3418 (68.3%), and of these, just over half (54.1%) are of the mutual exchange type, 44.4% are service credits, and only 1.5% are local currencies. Asia follows with 16.6% of CCs, of which over two thirds (68.7%) are service credit schemes, 23.4% are service credits and the remainder mutual exchanges. North America is the third most populous region for CCs, with 9.8% of our sample of CC projects, of which the vast majority (79.3%) are service credit schemes – mainly in the USA. South America represents 2.7% of the total CC projects identified, and these are exclusively local currencies (65.5% of the region's CCs) and barter markets (35.5%). Australia and New Zealand have only 1.7% of the world's CCs, split between mutual exchanges (57.9%) and service credits (42.1%). Finally, Africa's CCs are exclusively mutual exchanges, and make up 0.9% of the international total.

*** insert Figure 1 here ****

**** Figure 1: Geographical Distribution of Community Currencies, by Region and Type ****

It is clear that these models and ideas have travelled from one country to another over the last three decades or so, adapting and evolving along the way, but with often quite clear lineages to previous projects abroad. For example, Time Banks in the UK were established following a visit from Edgar Cahn of Time Dollars in the USA, and his international visits have prompted more national versions of the model; the initial spread of LETS was aided by a presentation by Michael Linton at a green economics conference (published in Ekins, 1986), from which delegates took the ideas back home. Figure 2 depicts a timeline for each of the four CC models, showing how the model has been taken up within different countries – there is not always a causal link however, and occasionally projects develop in isolation or in parallel, e.g. Japanese service credit schemes do not appear to have informed the US development of these projects.

The temporal dimension of this diffusion reveals four waves of international CC development. Mutual exchange national types are the oldest type, with national groupings averaging 17.5 years old; these are followed by service credits (15.5 years or 13.4 without the Japanese outlier); local currencies (12.2 years) and finally barter markets (11.3 years).

*** insert Figure 2 about here ****

Figure 2: Timelines Showing Geographical Diffusion of Community Currencies

4.3 The Diffusion Status of Community Currencies

Next we examine the current status of the 38 different national types identified (see table 1, there is one case of missing data), examining whether these national types are presently growing, stable, or whether they have peaked in terms of their total number of member projects. Our study reveals that overall, the majority (52.6%) of the national types identified were growing, 21.1% were stable, and 26.3% were currently below a previous peak. There were some geographical variations on this international picture: The nine North American CC groupings were disproportionately in the ascendant, with 66.7% of their national currency groups increasing in number, and Europe's 18 national types showed a slightly higher proportion of growing (55.6%) and stable groupings (27.8%), and fewer national types in decline. Conversely, Asia and Australia/New Zealand all showed higher proportions of national currency groups in decline (75.0% and 66.7% respectively). South America has an equal number in each category, although the figures relating to all three of these latter continents are somewhat skewed by the smaller sample sizes.

Analysing the development trajectory of these same 38 national groupings organised by CC types offers another perspective. Of the four types, Service Credit systems appear to be experiencing the most growth, with ten out of twelve (83.3%) national groupings showing current growth, and the remaining ones stable - none apparently having peaked. The story for mutual exchanges is more balanced with 43.8% showing growth and the same number in decline, with 12.5% stable. The six local currency networks show a similarly mixed picture with 33.3% each growing, plateauing, and dwindling. Of the four barter market national networks, one (25%) is growing and two (50%) are stable, while one has peaked (25%). Taking the field as a whole, the average age of national types that are growing is 14.4 years (or 13.1 years if the outlier Japanese service credit system is removed) compared to 12.3 years for stable and 19.9 years for declining systems. This shows little significant difference between the first two categories, but does indicate that on average, older CCs are peaked and are declining.

Whilst table 1 provides a useful snapshot of the overall picture of growth and decline across international types, the uncertainty surrounding the exact number of active projects should not be overlooked. In many cases, even where there is an established national network, there are not definitive records of the number of active systems. Hence we include a column indicating a judgement relating to the reliability of the overall figure, which is implicitly related to the development 'trajectory' of the type. Furthermore, we detected different kinds of growth, stability and decline. Growth and decline was found to occur rapidly in some cases and more slowly in others; stability could represent either a 'stagnant' cohort of long-standing projects with no new entrants (e.g. the Austrian Tauschringe), or alternatively a core of established projects accompanied by rapid churn of roughly equal numbers of projects forming and disbanding (e.g. German Regiogeld).

5 Discussion: Growing Green Money?

The empirical findings presented above present a picture of a relatively mature, flourishing set of community-based initiatives for sustainability. We wish to draw attention to four aspects of this story in particular, when considering the implications for achieving sustainable development: the sustainability goals of these projects, the lifecycle of CC initiatives, how CCs diffuse geographically, and the nature of the CC field.

5.1 The Sustainability Goals of Community Currencies

The scoping study has revealed that across the globe, there are CCs with a wide range of different sustainability objectives that we can categorise as being in the 'new economics' tradition. This evidence supports the theoretical work on CCs and sustainability discussed earlier, and demonstrates the breadth of sustainability goals across the categories of economic, social and environmental objectives. This variation is depicted in Figure 3, where these three goals are shown as a triangular

space, onto which are mapped the relative positions of a selection of national types (mapped according to their stated objectives, rather than to founders' motivations or actual impacts).

**** insert Figure 3 about here ****

**** Figure 3: Mapping the Sustainability Objectives of Community Currencies ****

While this representation is undoubtedly a crude simplification, it reveals some interesting characteristics of the field. First, the four CC types tend to converge with each other, and in particular regions of the space, indicating congruence of objectives among seemingly distinct national versions of core models, and divergence between the goals of the four types. The one exception is the barter markets where there is a profound difference between the economically-focused Argentinean Trueque model and the Canadian Troc-tes-Trucs. Second, we found only one CC type (Troc-tes-Trucs) with explicitly and predominantly environmental goals. While some local currencies have environmental goals, these are combined with economic rationales, and perhaps the greenest of these, the Transition currencies, appear to be adopting a more economic self-presentation as they develop. Third, and in contrast, mutual exchange CCs lie on a continuum between economic and social objectives, with national systems displaying varying priorities (tensions can arise where these priorities clash among and between national movements (Seyfang and Longhurst, 2013b)). The UK LETS movement is more 'economically-oriented' than many other mutual exchange systems, particularly some of the continental European systems, such as the French SEL, but arguably the Austrian Tauschkreis systems are even more economically focused, particularly in the case of the Talente Tauschkreis Vorarlberg which combines the Tauschkreis mutual exchange with a paper-based local currency. Fourth, service credits are the most socially-oriented of the currency types, particularly those that address a specific social need such as elder-care.

5.2 The Lifecycle of Community Currencies

The longevity of certain CC types allows us to see an initiative's lifespan from early implementation, through widespread adoption, to a stable plateau or decline. This is clearly evident in some cases such as UK LETS and US local currencies. The rise and fall of these types can in part be explained by what we know about their experiences. Evaluations of LETS in the UK have highlighted their potential, but have also identified both internal and external barriers preventing them from achieving the kinds of impacts initially promised (Williams et al, 2001; Aldridge and Patterson 2002). These initiatives have been limited to small, marginal (but nevertheless effective for some) endeavours, and have disappointed those expecting to see widespread adoption and significant impacts. To this extent, we are witnessing the natural lifecycle of experimental community-development initiatives, where good ideas initially attract attention, show a surge of interest and growth (accompanied by funding for networking and training), and then fail to achieve the critical mass required for widespread adoption, so they slowly dwindle as participants move away and onto the next promising project. However, examining the wider picture for mutual exchanges there are examples of both growing and stable national types, include examples of countries where this type has been established for several years. This suggests that this system type does not necessarily always follow a 'boom – bust' trajectory. Furthermore, there are anecdotal reports of renewed growth in some systems that have previously peaked, such as the Argentinean Trueque. We would speculate that some of the recent growth in CCs is in part a response to the global economic downturn since 2008 as well as the diffusion of new on-line platforms which make the management of some CC systems easier and which have stimulated new start-ups. Similarly a more detailed reading of the history of some service credit systems indicates that the pace of growth varies over time. This suggests that a range of contextual factors may also be significant in shaping CC development trajectories, and highlights a need for more in-depth comparative analysis.

An interesting trend to emerge from the data is that some of the youngest systems share characteristics in terms of their presentation and their embracing of technological solutions to make currency usage easier. For example, the UK Transition local currencies and German Regiogeld are experimenting with mobile phone technology and attempting to work with local authorities to accept the currencies. To some extent these currencies downplay the monetary critique and more radical politics that motivates many of the participants. Similarly, the institutional time credits of Spice are presented in a more instrumental fashion than the vision of rebuilding the core economy that underpinned Cahn's first experiments in timebanking (Cahn, 2000). The SOL experiment in France is also trying to combine three different currency systems in a single smart card (Fare, 2011). Some of these newer systems appear to be visibly distancing themselves from alternative cultures and lifestyles, in their self-presentation, to show the models as mainstream initiatives to achieve policy goals for sustainability. While these are small clusters at present, it is possible that more CC experiments may follow the lead of these modern, technologically and culturally sophisticated experiments, rather than that of the older models, many of which were more deeply embedded in strong green social movements. Indeed, as stated already, we have by necessity excluded some of the more exciting and novel CC types as they have not yet begun to diffuse – but there is an urgent need for new empirical research to evaluate their impacts..

5.3 Geographical Diffusion of Community Currencies

The spread of the various CC types across the globe shows certain distinct patterns. Perhaps the strongest is the language link. Our research reveals that CC ideas spread through several routes: influential pioneers talking about their work (eg Michael Linton speaking about LETS at the UK's Other Economic Summit in 1986 spread the word to other participating activists), through the media (eg the Canadian Jetons de Bonheur spread following a TV show, and numerous LETS in the UK were instigated following national news coverage of early schemes), the publication of influential books, and more recently of course, through the internet. Each of these routes relies on language-based communication and given that English is an international language, it is unsurprising that CC types from English-speaking countries have spread the furthest (and quickest, to other Anglophone countries). In contrast, while service credits were in use in Japan from 1973, the idea did not spread and the USA version was developed independently 13 years later. Similarly, until recently the huge wealth of CC experience in continental Europe was quite separate from the North America/UK/Australia and New Zealand axis of CC diffusion. Only now is the UK beginning to experiment with local currency models developed in the US and wider Europe over the last few years. The language link is especially evident with mutual exchanges: originating in British Columbia, Canada in 1983, LETS spread initially through English-speaking countries and latterly across continental Europe, where SEL was a successful movement in France. The SEL model has since been exported back to French-speaking Canada (hence the double entry on the timeline) where it follows quite a different cultural route, as part of the strong social economy movement in Francophone countries, and Troc-tes-trucs has now spread from Quebec to France. We speculate that increasingly powerful online translation tools will facilitate more effective cross-language learning and networking in future.

The spread of CCs to the global South has likewise seen CC models adapted and developed for specific conditions and socio-economic contexts (poverty, lack of financial infrastructure, the need to increase consumption rather than reduce it) albeit often still being founded in 'new economics' ideas about sustainable development. However, this travel is not one-way: we found some diffusion from South to North in recent years. One example is the Community Exchange System (CES) online accounting system which started in South Africa but which is now used as the technological platform for currencies in several continents. Also, some of the successful South American systems have begun to explore exporting their models into austerity-hit Europe. This has been the case with STRO who have showcased some of their work in Spain. Similarly, the Brazilian Palmas Institute has a French office, which at the moment fulfils a networking and publicity role but could also act as an instigator of new projects in the future.

Our research has also highlighted the connections between different national types and the way in which experimentation has led to 'forking' (Douthwaite, 2002) and the emergence of new currency models. For example the Ithaca Hours scheme – which led to the development of a local currency

movement in the USA – was informed by the failure of a LETS (Jacob et al, 2004). Consequently, the Ithaca Hours scheme provided the inspiration for the first Trueque barter market in Argentina (North, 2007). The difficulties of LETS also inspired the development of the CES mutual exchange platform and the aspiration to link mutual exchanges electronically. More recently, the German Chiemgauer inspired the US Berkshares model, which in turn inspired the Totnes Pound, leading to the emergence of the UK Transition local currencies (Longhurst, 2012), whilst the Spice model emerged from timebanking experiments in South Wales. It is therefore clear that like other forms of innovation there is an evolutionary quality to the currency field, where new models emerge out of the knowledge and experience of older ones, and that in the case of CCs, this has a strong geographical dimension.

5.4 The Nature Of The Community Currency Field

Our research has provided insights into the nature of the community currency field in terms of the range of actors and the sites and spaces in which they operate, and the potential for the growth of a unifying CC movement. Whilst ‘new economics’ think tanks and NGOs have played a key role in the growth of the currency field they are not the only significant actors. Indeed there are a range of participants within the currency field who can be regarded as ‘intermediaries’: not involved in the day-to-day management of currency projects but playing an important role in the growth of the wider field. For example, currency advocates who have written books on the topic and who speak widely in favour of currency activism include Bernard Lietaer, Tom Greco, David Boyle and Margrit Kennedy. A second type of advocate is the currency pioneer who becomes a key figurehead in the movement such as Michael Linton (LETS), Paul Glover (Ithaca Hours), Edgar Cahn (Time Banks) or João Joaquim de Melo Neto Segundo (Banco Palmas). Other less prominent local activists often also promote and develop the currency systems at a local level. In some cases, national networks have emerged which fulfil multiple roles including supporting new projects, lobbying and acting as the hub of system-based networks. There are also a number of key international networkers who spread information as far as possible, translating documents, collating evidence and reports, and providing links between currency systems. This is a significant role because many of the currency networks are relatively informal. Finally, there are also the academics (such as ourselves) who research complementary currencies and who play a role in producing knowledge about the development of the field.

Community currency actors converge at a range of different sites and spaces. Periodic academic conferences bring together both activists and academics to review and report recent developments. Email lists and Skype groups provide a virtual space where discussions are held. Various actors collaborate to develop and uphold key information resources for the field such as the online database and resource bank (www.complementarycurrency.org); the Complementary Currency Magazine (www.ccmag.net), the bibliographic database and library (www.cc-literature.de) and the International Journal of Community Currency Research (www.ijccr.net). We have found that these actors, their networks, and the resources that they produce perform an invaluable service, often on a voluntary basis, to sustain interest and vitality in this community-led field. Many are driven by their belief that CCs offer a new way of working and living sustainably, indicating that the field has the hallmarks of a social movement (North 2007; Collom, 2011).

However, we question whether there is indeed a cohesive and viable currency movement, not least because of the different objectives, modes of operation and values that can exist within ‘national types’ as well as between them. We detected further tensions between certain national types within given countries that reflects, in part, the underlying ethos of the type. For example, service credit CCs are generally run as community development or social care initiatives, by experts in those fields, and are seen as being quite complementary to mainstream systems despite their radical stance of valuing time and work equally. The CC is simply a means to an end. On the other hand, local currency and mutual exchange activists are often more motivated by a desire to reinvent money, reform banking and financial institutions, and democratise financial power – so seeing the CC as both the means *and* the end. In this case, earlier (less successful) promotional material tried to engage people by discussing new theories of money while more recent marketing efforts stress local development goals. Consequently, it would be an oversimplification to discuss all these projects as being of a common cause, and the error would be in focusing on the tools used, rather than the objectives sought.

More pragmatically, perhaps, our findings confirm previous research on ‘grassroots innovations’ (community-led radical sustainability initiatives – see Seyfang and Smith, 2007) which concludes that such diverse, community-led movements are hindered by short-term and unreliable funding streams, and therefore struggle to consolidate their learning and pass on their knowledge and expertise to others, thereby limiting the spread of these innovative ideas. Policy support should consequently favour these experimental initiatives, encouraging a flourishing of different ideas, and allowing community-based organisations to scale up and become institutionalised. Emerging research on grassroots innovations examines how such radical niches might gain greater traction in the policy field, but recognises the problems inherent in trying to achieve a strong, common voice to lobby effectively, when the field comprises multiple sets of objectives, motivations and initiatives (Hielscher et al, 2013). Our findings certainly confirm the applicability of these ideas for the CC field.

6 Conclusions

This paper has presented new empirical research on the first systematic international review of international community currencies (CCs), an under-researched field of community-led initiative for sustainable development. Our international scoping study revealed a diverse range of established CC types in existence, organised into four main types – service credits, mutual exchange, local currencies and barter markets. These CCs are developed with the aim of achieving a range of ‘new economics’-inspired sustainable development objectives, principally community-building and social capital creation, boosting local economies and valuing marginalised labour, and enabling collaborative consumption to reduce environmental impacts of current lifestyles. Our research has mapped the international distribution and spread of these CCs over the last few decades, and has shed light on the lifecycle and evolution of these movements.

Our findings have several implications for promoting sustainable development through the use of CCs. First, while CCs evidently support various aspects of sustainable development, it is the economic and social goals which have greatest traction in the movements; very few (of our sample of established types) are explicitly pro-environmental in their stated objectives. This indicates an evolution in the self-presentation of CCs and one which appears to illustrate the benefits of engaging with people around practical needs rather than ideology. Second, the longest-lived CC types are those most likely to be in decline, which suggests that the future of CCs for sustainability may lie in emerging hybrids and new models, rather than propping up older models and systems. Third, there is a strong geographical dimension to the global diffusion of CCs, primarily along axes of common language, and models are adapted and contextualised in each new country they inhabit. This is a source of innovation evolution, yet key information is currently stuck behind language barriers. Greater support for translation and information-sharing would improve the ability of CC innovators to learn and develop new ideas. Finally, and not unrelated to the last point, the CC field is characterised by voluntary, activist-led efforts, and informal exchange of information and learning. Again, resources and support for consolidating learning, disseminating new ideas and experiences, and capturing good evaluation data, would strengthen the case for these initiatives, as well as enable their more robust development.

Community currencies seem to have the potential to deliver sustainable development benefits, but more research is needed to understand the initiatives before they can be successfully harnessed by policymakers to help achieve policy goals such as encouraging pro-environmental behaviour change, increasing civic engagement, supporting local businesses, and building new systems of provision for sustainability. In this scoping study we have been constrained by the lack of reliable data on many of these national CC networks, and our analysis has been based on simple descriptive data about objectives, numbers of projects, and network status. There is a dearth of good evaluation data for these CCs, and almost no robust research about how successfully (or not) CCs achieve their aims, what their potential is, and what is holding them back. In addition to filling these big data gaps, we also need to study the new, emerging, promising CC models, to understand how they have learned from previous experience, and might better meet their potential in achieving sustainable development goals. The current financial crisis has focused the minds of citizens and governments alike on the nature of the money we use every day. This research has demonstrated that a plethora of alternative financial systems exist, and that they are instigated and run by practitioners, NGOs and local governments with

a desire for more sustainable ways of living. The challenge now is to learn more about whether and how they achieve their goals, and so lay the foundation for a more sustainable future.

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References

- Aldridge, T and Patterson, A. (2002) 'LETS get real: constraints on the development of Local Exchange Trading Systems' *Area*, 34, 4.
- Blanc, J. (2010) 'Community and Complementary Currencies' in Hart, K., Laville, J-L. and Cattani, D. (eds) *The Human Economy* (Polity, Cambridge).
- Blanc, J (2011) 'Classifying "CCs": Community, complementary and local currencies' types and generations' *International Journal of Community Currency Research*, Vol 15 D 4-10 <www.ijccr.net>
- Botsman, R. and Rogers, R. (2010) *What's mine is yours: The rise of collaborative consumption* (Harper, London)
- Boyle, D. and Simms, A. (2009) *The New Economics: A bigger picture* (Earthscan, London)
- Brenes, E. (2011) 'Complementary Currencies for Sustainable Local Economies in Central America' *International Journal of Community Currency Research*, Vol 15 D 32-38 <www.ijccr.net>
- Briceno, T. and Stagl, S. (2006) 'The role of social processes for sustainable consumption' *Journal of Cleaner Production*, 14(17):1541-1551
- Bristol Pound (2012) *How It Works* <<http://bristolpound.org/index.php?com=pages&page=18>> accessed 16/2/12
- Cahn, E. (2000) *No More Throwaway People: The co-production imperative* (Washington, Essential Books)
- Collom, E. (2008) 'Engagement of the Elderly in Time Banking: The Potential for Social Capital Generation in an Aging Society,' *Journal of Aging & Social Policy*, 20, No. 4 , pp. 414-436.
- Collom, E. (2011) 'Motivations and Differential Participation in a Community Currency System: The Dynamics within a Local Social Movement Organization,' *Sociological Forum*, 26, No 1 (2011), pp. 144-168
- Collom, E., Lasker, J.N. and Kyriacou, C. (2012) *Equal Time, Equal Value*, (Ashgate, Farnham)
- Croall, J. (1997) *LETS Act Locally: The growth of Local Exchange Trading Systems*, Calouste Gulbenkian Foundation, London.
- Daly, H. (1992) *Steady State Economics*, Earthscan, London, 2nd edition.
- Dauncey, G. (1996) *After The Crash: The Emergence of the Rainbow Economy*, Greenprint, Woodbridge. [2nd edition, first published 1988]
- De Melo Neto Segundo, J. (2010) 'Associative Community Banks in Brazil' *WorkingUSA: The Journal of Labor and Society* 13, pp. 61-76
- De Sousa Santos, B. (2006) (Ed.) *Another Production is Possible. Beyond the Capitalist Canon*. London: Verso, 2006.
- DEFRA (2003) *Changing Patterns: UK Government Framework for Sustainable Consumption and Production*, (Defra, London).

- DEFRA (2010) *Measuring Progress: Sustainable Development Indicators 2010* (Defra, London)
- DEFRA (2011) *Mainstreaming Sustainable Development* (Defra, London)
- Douthwaite, B. (2002) *Enabling Innovation*, Zed Books: London.
- Douthwaite, R. (1992) *The Growth Illusion*, (Green Books, Bideford, UK)
- Douthwaite, R. (1996) *Short Circuit: Strengthening local economies for security in an unstable world*, (Green Books, Totnes, UK)
- Ekins, P. (ed) (1986) *The Living Economy: A New Economics in the Making*, (Routledge, London).
- Ekins, P., 1993. 'Limits to growth' and 'sustainable development': grappling with ecological realities. *Ecological Economics*, 8, pp.269–288.
- Elvins, S. (2012) 'Selling Scrip To America: Ideology, Self-help and the Experiments of the Great Depression' *International Journal of Community Currency Research* 16 (D) 14-21.
- Evans, M., 2009. Zelizer's theory of money and the case of local currencies. *ENVIRONMENT AND PLANNING A*, 41(5), pp.1026–1041.
- Fare, M. (2011) 'The SOL: A Complementary Currency for the Social Economy and Sustainable Development' *International Journal of Community Currency Research* Vol 15 D:57-60 <www.ijccr.net>
- Fine, B. and Leopold, E. (1993) *The World Of Consumption*, (Routledge, London).
- Gatch, L. (2012) 'Tax Anticipation Scrip as a Form of Local Currency in the USA during the 1930s' *International Journal of Community Currency Research* 16 (D) 22-35.
- Gelleri, C. (2009) 'Chiemgauer Regiomoney: Theory And Practice Of A Local Currency' *International Journal of Community Currency Research*, Vol 13 pp.61-75
- Graugaard, J. (2012): A tool for building community resilience? A case study of the Lewes Pound, *Local Environment*, Vol. 17, Number 2, pp. 243 – 260.
- Greco, T. (2001) *Money: Understanding and Creating Alternatives to Legal Tender* (Chelsea Green, Vermont)
- Gregory, L., 2009. Spending Time Locally: The Benefit of Time Banks for Local Economies. *Local Economy*, 24(4), pp.323–333.
- Hayashi, M. (2012) 'Japan's *Fureai Kippu* (Time Bank in Elder Care): History, New Trends and Implications' *International Journal of Community Currency Research* Vol 16 <www.ijccr.net>
- Henderson, H. (1995) *Paradigms In Progress: Life beyond economics*, Berrett-Koehler Publishers, San Francisco (originally published 1991)
- Hielscher, S., Seyfang, G. and Smith, A. (2013) 'Grassroots Innovations for Sustainable Energy: Exploring niche development processes among community energy initiatives' in Brown, H., Cohen, M. and Vergragt, P. (eds) *Sustainable Lifestyles in a New Economy: Ecological Macroeconomics, Socio-technical Transitions, and Social Practices* (Edward Elgar)
- HM Government (2011) *Giving White Paper*, (HMSO: London)
- Holdsworth, M. and Boyle, D. (2004) *Carrots Not Sticks: The possibilities of a sustainability reward card for the UK*, New Economics Foundation and National Consumer Council, London
- Hopkins, R. (2008). *The transition handbook: from oil dependency to local resilience*. Green Books, Totnes, Devon, UK.
- Jackson, T. (2009) *Prosperity Without Growth* (Earthscan, London)
- Jacob, J., Brinkerhoff, M., Jovic, E., Wheatley, G., (2004) 'HOUR Town: Paul Glover and the Genesis and Evolution of Ithaca Hours' *International Journal of Community Currency Research*, 8, 29 – 41.
- Jacobs, J. (1984) *Cities And The Wealth Of Nations: Principles of economic life*, (Random House, London).

- Kaplan, N. (2011) 'Downtown Dollars: Community currency or discount coupon?' *International Journal of Community Currency Research* 15 (A) 69-77 <www.ijccr.net>
- Kent, K. (2005) *Healthy Money, Healthy Planet: Developing sustainability through new money systems* (Craig Potton Publishing, Nelson NZ)
- Lee, R. (1996) "Moral Money? LETS And The Social Construction Of Local Economic Geographies In Southeast England", in *Environment and Planning A*, Vol 28, No 8, pp 1377 - 1394
- Levett, R., with Christie, I., Jacobs, M. and Therivel, R. (2003) *A Better Choice Of Choice: Quality of life, consumption and economic growth*, (Fabian Society, London).
- Lietaer, B. (2001) *The Future Of Money: Creating new wealth, work and a wiser world*, Century, London.
- Lipsey, R. and Harbury, C. (1992) *First Principles of Economics* 2nd edition (Oxford: Oxford University Press)
- Longhurst, N and Seyfang, G. (eds) (2011) 'Complementary Currencies: State of the Art' *Special Issue of the International Journal of Community Currency Research* Vol 15 <www.ijccr.net>
- Longhurst, N. (2012) 'The Totnes Pound: A grassroots technological niche' in Davies, A. (ed) *Enterprising Communities: Grassroots sustainability innovations*. (Bingley: Emerald) pp.163-188
- Lutz, M. (1999) *Economics For The Common Good: Two centuries of social economic thought in the humanistic tradition*, (Routledge, London).
- Maniates, M. (2002) 'Individualization: Plant a tree, buy a bike, save the world?' in T. Princen, M. Maniates and K. Konca (eds) *Confronting Consumption* (MIT Press, London), pp.43-66.
- Martignoni, J (2012) 'A New Approach to a Typology of Complementary Currencies' *International Journal of Community Currency Research* Vol 16 A1-17.
- Martínez-Alier, J., Pascual, U., Vivien, F-D., and Zaccai, E. (2010) 'Sustainable de-growth: Mapping the context, criticisms and future prospects of an emergent paradigm' *Ecological Economics*, 69(9), pp.1741-1747.
- Mellor, M (2010) *The Future of Money* Pluto Press: London
- Mendell, M. (2009) 'The three pillars of the social economy: the Quebec Experience' in Amin, A. (ed) *The Social Economy* (edited by Ash Amin, London: Zed) pp.176-207
- Michaelson, J. et al., 2009. *National Accounts of Well-being*. New Economics Foundation, p.72.
- Monkhouse, C. & Dibb, S., 2011. *Making Sustainable Lives Easier*, London: Sustainable Development Commission.
- Naughton-Doe, R. (2011) 'Time Banking in Social Housing: A Toolkit for Co-production in Public Services' *International Journal of Community Currency Research* Vol 15 D:73-76 www.ijccr.net
- North, P. (2007) *Money and Liberation*, London: University of Minnesota Press
- OECD (2011) *Towards Green Growth: A Summary for Policymakers* (OECD, Paris)
- Pearson, R. (2003) 'Argentina's Barter Networks: New Currency for New Times', *Bulletin of Latin American Research*, 22, 2, pp.214-230.
- Porritt, J. (2003) *Redefining Prosperity: Resource productivity, economic growth and sustainable development*, (London: Sustainable Development Commission).
- Rowbotham, M. (1998) *The Grip of Death: A study of modern money, debt slavery and destructive economics* (John Carpenter, Charlbury).
- Robertson, J. (1999) *The New Economics Of Sustainable Development: A briefing for policymakers*, (Kogan Page, London).
- Ryan-Collins, J. (2011) 'Building Local Resilience: The UK's Transition Currencies' *International Journal of Community Currency Research* Vol 15 D:61-67
- Ryan-Collins, J., Stephens, L. & Coote, A., 2008. *New Wealth of Time*, London: New Economics

Foundation.

- Sanne, C. (2002) Willing Consumers – Or Locked-In? Policies for a sustainable consumption, *Ecological Economics* Vol 42, pp.273-287
- Schumacher, E. F. (1993) *Small Is Beautiful: A study of economics as if people mattered*, Vintage, London (first published 1973)
- Seyfang, G., 2001a. Community currencies: small change for a green economy. *ENVIRONMENT AND PLANNING A*, 33, pp.975–996.
- Seyfang, G. (2001b) Working For The Fenland Dollar: An Evaluation Of Local Exchange Trading Schemes (LETS) As An Informal Employment Strategy To Tackle Social Exclusion, *Work, Employment and Society*, Vol 15 (3) pp.581-593
- Seyfang, G. (2003) 'Growing Cohesive Communities, One Favour At A Time: Social exclusion, active citizenship and time banks', *International Journal of Urban and Regional Research*, Vol 27 (3) pp.699-706
- Seyfang, G. (2004) Working Outside The Box: Community currencies, time banks and social inclusion, *Journal of Social Policy* Vol 33(1) pp.49-71
- Seyfang, G. (2006) 'New Institutions for Sustainable Consumption: An evaluation of community currencies' *Regional Studies* Vol 40(7) pp.781-791
- Seyfang, G. (2009) *The New Economics Of Sustainable Consumption: Seeds Of Change* (Palgrave Macmillan, Basingstoke).
- Seyfang, G. (2010) 'Low-Carbon Communities and the Currencies of Change' in Peters, M., Fudge, S. and Jackson, T. (eds) *Low Carbon Communities: Imaginative approaches to combating climate change locally* (Edward Elgar, Cheltenham) pp.108-122
- Seyfang, G. and Longhurst, N. (2013a) 'Desperately Seeking Niches: Grassroots innovations and niche development in the community currency field' *Global Environmental Change* DOI: 10.1016/j.gloenvcha.2013.02.007
- Seyfang, G. and Longhurst, N. (2013b) 'Growing Green Money? Mapping grassroots currencies for sustainable development' *Ecological Economics* 86 pp65–77 DOI: 10.1016/j.ecolecon.2012.11.003
- Seyfang, G. and Smith, A. (2007) 'Grassroots Innovations for Sustainable Development: towards a new research and policy agenda' in *Environmental Politics* Vol 16(4) pp. 584-603
- Seyfang, G. and Smith, K. (2002) *The Time Of Our Lives: Using time banking for neighbourhood renewal and community capacity-building* (New Economics Foundation, London).
- Shuman, M. H. (2000). *Going local!*. New York: Routledge.
- Simms, A., Moran, D. and Chowla, P. (2006) *The UK Interdependence Report: How the world sustains the nation's lifestyles and the price it pays* (New Economics Foundation, London)
- Slay, J., 2011. *More Than Money*, London: NESTA.
- Southerton, D., Chappells, H. and Van Vliet, V. (2004) *Sustainable Consumption: The implications of changing infrastructures of provision*, (Edward Elgar, Aldershot)
- Spratt, S., Simms, A., Neitzert, E. and Ryan-Collins, R. (2009) *The Great Transition* (New Economics Foundation, London)
- Stiglitz, J., Sen, A. & Fitoussi, J.-P., 2009. Report of the commission on the measurement of economic performance et social progress. pp.1–292.
- Stodder, J., 1998. 'Corporate barter and macroeconomic stabilization'. *International Journal of Community Currency* Vol 2 <www.ijccr.net>
- Swann, B. (1981). 'The place of a local currency in a world economy'. Presentation given to the 1981 Schumacher Society Conference < <http://neweconomicsinstitute.org/content/kilowatt-hour-notes-and-other-mediums-exchange> > accessed 8 March 2012, copy on file.

- Turnbull, S. (2009) *Options for Rebuilding The Economy and the Financial System* Working Paper DOI: 10.2139/ssrn.1322210
- UNCED (1992) *Agenda 21: The United Nations Program Of Action From Rio*, (U.N. Publications, New York)
- UNEP (2011) *Towards a Green Economy: A synthesis for policymakers* (UNEP, Nairobi)
- Victor, P. & Rosenbluth, G., 2007. Managing without growth. *Ecological Economics*, 61(2-3), pp.492–504.
- Wackernagel, M. and Rees, W. (1996) *Our Ecological Footprint: Reducing human impact on the earth*, (New Society Publishers, Philadelphia)
- Wheatley, G., Younie, C., Alajlan, H. and McFarlane, E. (2011) 'Calgary Dollars: Economic and Social Capital Benefits' *International Journal of Community Currency Research* 15 (A) 84-89 <www.ijccr.net>
- Williams, C. C., Aldridge, T., Tooke, J., Lee, R., Leyshon, A. and Thrift, N. (2001) *Bridges into Work: an evaluation of Local Exchange Trading Schemes (LETS)*. Policy Press: Bristol.
- Zelizer, V. A. (1994) *The Social Meaning Of Money*, Basic Books, New York

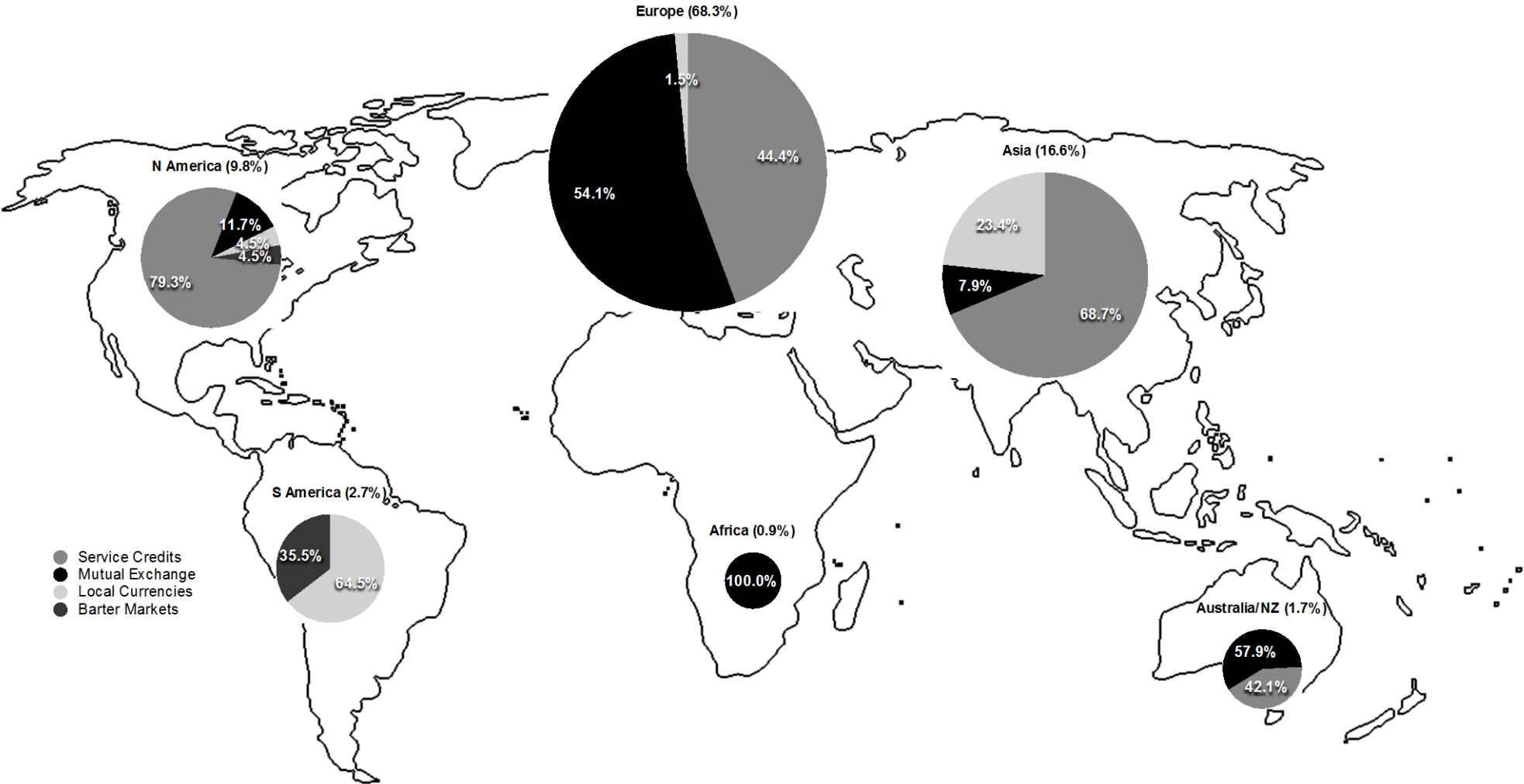


Figure 1: Geographical Distribution of Community currencies, by Continent and Type

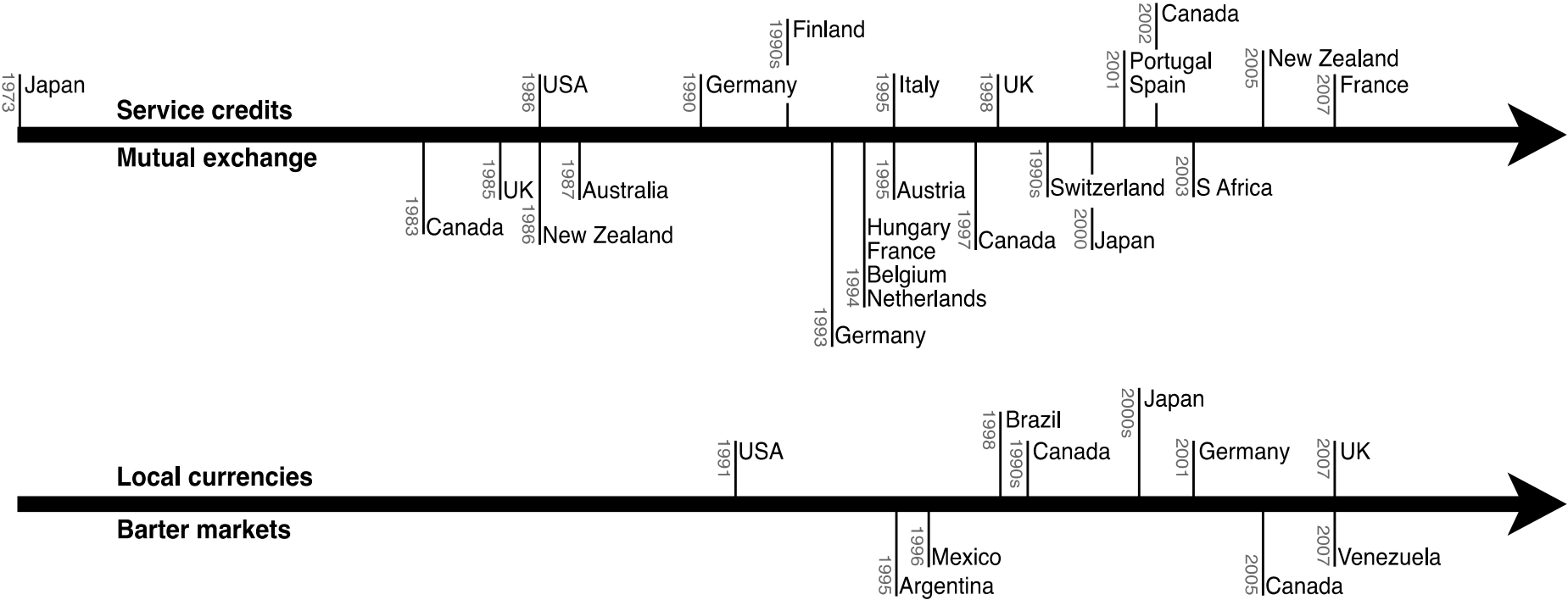


Figure 2: Timelines Showing Geographical Diffusion of Community Currencies

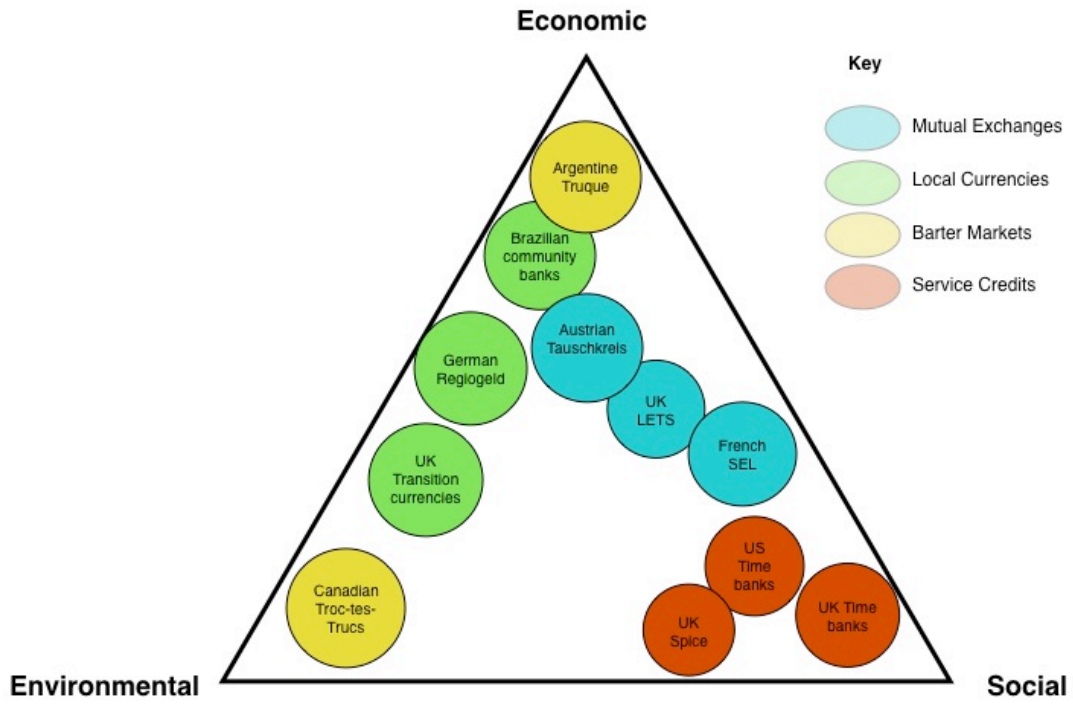


Figure 3: Mapping the Sustainability Objectives of Community Currencies

Table 1: Summary of National Community Currencies

Continent	Country	Currency Name	Type ¹	No ²	Status ³	Reliability ⁴	Development
North America	Canada	SEL	ME	15	↑	😊	First one established 1997; slow growth.
		Jetons de Bonheur	ME	15	↑	😊	First one 2007; growth since then. Inspired by TV series
		JEU	ME	9	↑	😊	Started in 1998 in France, as attempt to revitalise SEL, begun in 1999 in Quebec, Canada; slow growth since.
		Paper based local currencies	LC	5	→	😊	Begun in late 1990s, stable number since 2000s
		L'Accorderie	SC	5	↑	😊	Started in 2002; slow growth since then
		Troc tes Trucs	BM	5	↑	😊	Started 2005; slow growth.
	USA	Time Dollars	SC	260	↑	😊	Initiated 1986, steady growth followed by strong growth in recent years
Paper-based local currencies		LC	10	↓	😊	First one Ithaca Hours, 1991; growth in 1990s, decline in 2000s	
South America	Mexico	Red Tlaloc	BM	10	→	😊	First one 1996, growth during 1990s, then stability.
	Brazil	Community Banks	LC	60	↑	😊	Established 1998; Palmas Institute spreads the model in later half of 2000s.
	Argentina	Trueque	BM	20	↓	😊	Started 1995 by environmental NGO; rapid growth in early 2000s as response to national monetary crisis; steep decline since. Some still exist.
Europe	UK	LETS	ME	250	↓	😞	Initiated 1985; growth in 1990s; in decline since 2000s
		Time Banks	SC	250	↑	😊	First one 1998, slow growth through 2000s, recently renewed interest (re Big Society)
		Transition Currencies	LC	5	↑	😊	Instigated 2007; initial growth; then plateauing for learning, with current expansion and experimentation
		Spice	SC	13	↑	😊	Adaptation of Time Banking started 2008, slow growth.
	France	SEL	ME	465	↓	😞	Started in 1994; growth during 1990s; Active network and new systems emerging but unclear how many systems are active nationally.
		SOL Commitment	SC	5	→	😊	Started 2007; Undergoing consolidation following the initial experiment. This is one of 3 types of SOL currency in this hybrid scheme
	Germany	Tauschringe	ME	230-300	↓	😊	Initiated 1993, growth during 1990s, in decline since 2005
		Senioren-genossenschaften	SC	70-80	↑	😊	Launched in 1990, steady growth since then.
		Regiogeld	LC	30	→	😊	First one in 2003, followed by rapid growth; currently consolidating
	Belgium	Letsvlanderan	ME	30	↑	😊	First project in 1994, followed by slow growth. National coordination from 2009-2011 saw doubling of projects
		SEL-LETS	ME	65	✖	✖	No data available.
	Italy	Banche del Tempo	SC	391	→	😊	First one established 1995; rapid growth during 1990s; apparent plateau since then
	Spain	Bancas del Tiempo	SC	250	↑	😊	Instigated 2001, growing particularly in last few years.
	Switzerland	Tauschsystem	ME	38	→	😊	Started late 1990s, growth in 2000s; now stable
	Austria	Tauschkreis	ME	35	→	😊	First one 1995, growth during 1990s, stable since then
	Finland	Aikapankki	SC	20	↑	😊	First wave peaked during 1990s, second wave currently growing.
	Portugal	Banco de Tempo	SC	31	↑	😊	First one in 2001; slow growth throughout 2000s
Netherlands	LETSkringen	ME	100	↑	😊	First one 1994, Amsterdam, current growth	
Hungary	Talentum	ME	15	↑	😊	First established 1994, slow growth since	
Africa	South Africa	Community Exchange Systems	ME	32	↑	😊	First system in Cape Town, 2003; steady growth since then
Asia	Japan	Fureai Kippu and Time Banks	SC	391	↑	😊	First established 1973, then reinvented as Fureai Kippu, rapid growth in 1980s and 90s; early 2000s decline and recent resurgence.
		Various mutual exchange	ME	35	↓	😊	Few systems in 1990s. Boom after TV documentary in 1999. Decline in recent years.
		Various local currencies	LC	133	↓	😊	Rapid growth in early 2000s and decline since then
South Korea	LETS	ME	10	↓	😊	First one initiated 1998 by a green network, rapid growth during IMF austerity measures, followed by decline since then.	
Australia & NZ	Australia	LETS	ME	25	↓	😊	Established 1987; growth in early 1990s, decline by late 1990s
	New	Time Banks	SC	24	↑	😊	First one in 2005; recent growth
		Green Dollars	ME	8	↓	😊	Established in 1986, with rapid growth in 80s and 90s, and decline since then

1 where an estimated range is given for number of projects, the midpoint is taken for subsequent calculations

2 ME (Mutual Exchange); LC (Local Currency); BM (Barter Market); SC (Service Credits)

3 Indicates present national CC status: ↑ growth in number of systems, → plateau in number of systems, ↓ current number below previous peak. There is no data for 1 of the 39 national systems (✖).

4 Reliability of data source indicated as follows: 😊 High, 😐 Medium and 😞 Low.

Highlights

- Community currencies (CCs) with sustainability goals exist across the world
- Four core types exist and have evolved as they have spread
- Explicitly pro-environmental CCs are rare; most claim social / economic goals
- Europe has the largest number of CC projects and national movements
- Potential is hampered by lack of resources and structures for learning and networking