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**Community Currency Programmes as a Tool for the
Sustainable Development of Informal Settlements:**

The Case of Mombasa and Nairobi County, Kenya

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6.12.2017

Declaration of Academic Integrity

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Abstract

In a century epitomized by rapid urbanization, especially in the Global South, the population living in informal settlements continues to grow. These settlements are associated with poor social, physical and economic conditions and addressing the living conditions in these settlements therefore deserves ever more attention. Grassroots Economics Foundation (GE) has developed an innovative way to boost employment in informal settlements with community currencies (CCs). These CC programs are targeted towards the specific issues in informal settlements, such as lack of basic services, high (youth) unemployment and economic instability. By its design the CC model of GE promises to be a tool for the sustainable development of informal settlements that goes beyond traditional development programs and their focus on productive and reproductive outcomes. This thesis therefore investigates if CCs have an impact on lifestyle outcomes. To this end it focusses on the CCs implemented by GE in informal settlements in Mombasa and Nairobi county, Kenya. By using inverse probability of treatment weighting (IPTW) using the propensity score, this research showed a positive and significant impact of CCs on the following two lifestyle outcomes: helping the environment and gifting in professional services and goods. This thesis research contributes to the academic literature in the following four ways: by answering to the need of quantitative evidence of the impact of CCs, by providing a quantitative assessment of the impact of these CCs from a lifestyle perspective (a more holistic perspective on development), by being the first research to date to base its analysis on the Sustainable Lifestyle Analysis (SLifA) framework and by showing and evidencing how CCs differ and go beyond the outcomes of cash transfer programs and other conventional development programs.

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List of Acronyms and Abbreviations

CC	Community Currency
CCs	Community Currencies
GE	Grassroots Economics Foundation
CT	Cash transfers
INSE(s)	Informal settlements
SDG	Sustainable Development Goal
SL	Sustainable Livelihood
SLA	Sustainable Livelihoods Approach
SLifA	Sustainable Lifestyle Analysis
SSE	Social and Solidarity Economy
UCT	Unconditional cash transfers
UN	United Nations
WCED	World Commission for Environment and Development

1 Introduction

1.1 Introduction to the Topic

Around one in eight people live in informal settlements (INSEs) today and the population living in these settlements continues to increase (UN-Habitat, 2016a). INSEs are residential areas where inhabitants do not have security of tenure of the land or dwellings they inhabit, that usually lack or are cut off from basic services and city infrastructure and where the housing may not be in compliance with current planning and building regulations and is often located in geographically and environmentally hazardous environments (UN-Habitat, 2015). The capacity of new dwellers of these INSEs to move out of these degraded environments remains limited.

UN-Habitat estimates that of “the 10 million more people added to the urban population of Sub-Saharan Africa each year, two-thirds (7 million) live in INSEs or slums and only 2 million can expect to move out from there” (UN-Habitat, 2016a). In these areas, the provision of shelter and basic needs such as water, sanitation, employment, education, transport and public health cannot keep up with the increasing demand. This under provision of basic services, and other consequences of accelerated urbanisation such as land degradation, furthermore pose a threat to human security, peace and sustainable development (Hove, Ngwerume, & Muchemwa, 2013). A tool that could address the unmet needs in these settlements is community currencies (CCs).

In an era of livelihood improvement innovations, CCs are gaining more and more traction across the globe. Globally, there exist around 5.000 complementary currencies, they appear less frequently in the Global South than North (Dissaux, 2016). A community currency system is a type of complementary currency (a medium of exchange other than national currency) used by a network of people with a common bond, like members of an association or a community and aims to link unmet local needs with underutilized resources (Lietaer & Hallsmith, 2006). These systems may be used in business communities (mutual-credit systems) or online communities (digital currencies) or they can be geography-based which would make

them a form of local currency (CCIA, 2015). CCs stem from a “process of social innovation” (Dissaux, 2016, p. 2) with the objective to “meet the needs or aspirations unmet by the market or the State”(Blanc & Fare, 2012).

They aim at answering to societal and/or environmental challenges at the local level, which is also the aim of the community currency systems developed by the Kenyan non-profit social enterprise Grassroots Economics (GE). These mutual-credit systems successfully empowered residents of INSEs in Mombasa and Nairobi County to improve their economic conditions by providing them with a way to exchange goods and services without relying on scarce national currency (Ruddick, 2015).

The CCs under study differentiate themselves from other CCs in that they are unique cases of economic empowerment in INSEs, addressing the residents’ lack of access to credit; and in that they have the cooperative assets of the communities using the CC as collateral (Grassroots Economics, 2017). This lack results in them having no safety net or resiliency and consequently facing a situation of lack of growth and services such as healthcare and education, that limits their human potential (Ruddick, Richards, & Bendell, 2015). Globally, “2 billion adults do not have a basic account” according to the World Bank (2017), and they furthermore note that 59% of these 2 billion adults declare that lacking sufficient financial resources is a main reason, implying there is a lack of financial services that fit the needs or are affordable for less well-off adults. The World Bank furthermore identified following additional factors that impedes these people from opening an account: “distance from a financial service provider, lack of necessary documentation papers, lack of trust in financial service providers, and religion”; and they estimate that “more than 200 million formal and informal micro, small and medium-sized enterprises (MSMEs) in emerging economies lack adequate financing to thrive and grow”. These barriers -except maybe religion- are addressed by the programmes of Grassroots Economics.

The existing research regarding CCs in INSEs has focused mainly on -and has provided evidence of- the impact of these CCs on the economic and social conditions of the participants in communities before epitomized by high youth unemployment, dependency on donor funds

and poverty (Bendell, Slater, & Ruddick, 2015; Dissaux, 2016; Dissaux & Ruddick, n.d.; Isanya, 2016; Richards & Ruddick, 2013; W. O. Ruddick, 2011; W. O. Ruddick, Richards, & Bendell, 2015; W. Ruddick, Richards, & Bendall, 2015; William Ruddick, 2015; William Ruddick & Mariani, 2013). There is no evidence however of how these CCs sustainably address the living conditions of the informal settlements dwellers. If the CC intervention has an impact on lifestyle outcomes in the context of the Sustainable Lifestyle Analysis (SLifA) framework, is precisely the assessment in which policy makers should be interested when aiming to build sustainable and resilient communities (Morse & McNamara, 2013).

1.2 A Brief Explanation of the CC Programs by GE

The CCs of GE are a local means of exchange, which supplements the national Kenyan currency system. The Kenyan community currency program of GE is called Sarafu-Credit. Based on trust and local development it builds stable markets. Goods and services in Sarafu-Credit vouchers are worth the same amount in the national Kenyan currency: Kenyan Shillings. A cooperative is formed by a network of businesses, informal sector workers, schools, clinics and self-employed worker. The profits and inventory of this cooperative are issued as credit that is free of interest and as vouchers for environmental and social services to the members of the community. Sarafu-Credit is backed by the members' services and goods and the cooperative businesses, thus being a mutual credit. In any participating organisation, shop, school clinic and farm these CC vouchers can be used as a medium of exchange for goods and services. These vouchers circulate in the community and are a stable local means of exchange when the national currency is lacking. As a result of this injection of credit into the community by means of a CC, which is based on local assets, local sales increase and there is a direct development of the local economy.

In the following two ways CC as a socio-economic tool for sustainable development aims to improve living conditions. Firstly, it provides access to an interest free-credit for community groups, which results in employment, increased trade, development of small businesses and general local economic stability. Secondly, it provides a mechanism for these

community groups to finance environmental and social services (such as health services, education) and build trust in the community (Grassroots Economics, 2017).¹

1.3 Urban Informality in Kenya

Grassroots Economics is based and active in Kenya. Their CCs programs run in 2 INSEs of Mombasa County, 3 of Nairobi county and one in Kwale County. One of their CC programs, the Lindi-Pesa, runs in Kibera, Africa's biggest slum (Grassroots Economics, 2017a; Habitat for Humanity, 2017). The World Bank (2017b, p. 26) estimates that in Kenya "nearly 61 percent of urban households live in" INSEs. The growth of the Kenyan population living in INSEs is unlikely to stop given Kenya's "urbanization rate of 4.4 percent" (2017b, p. vi). Despite experiencing stable economic growth in the past decade and having a commercial and logistics industry that has a key role in the region and is known for its financial service innovations such as the M-PESA (Muchai & Kimuyu, 2017), it has a poverty rate of 45.5 percent (UNDP, 2017). One of the ways in which this high poverty rate manifests itself is in the unceasing growth of the population living in INSEs (World Bank, 2017b, p. 26).

¹ The CC programs of GE are further discussed in Chapter 3 and the detailed working of them in the same chapter in section 'Detailed Working of the CC Programs of GE'

1.4 Policy Relevance

Grassroots Economics has developed an innovative way to boost employment in INSEs. These improved economic and social livelihood conditions have been evidenced, but the CC programs of GE go beyond a mere focus on reproductive and productive goals, which is argued in this thesis also distinguishes them from cash transfer programs. Assessing if and how these CCs also contribute to sustainable lifestyles is not only crucial for the further improvement of the living conditions of the residents of the INSEs where the community currency (CC) programmes are running, but can provide revelatory insights for similar cases and can inform policy solutions in light of Sustainable Development Goal number 11 *Sustainable Cities and Communities* and the challenges it entails; such as: lack of funds to provide basic services, a shortage of adequate housing and declining infrastructure (United Nations, 2017).

Characteristic features of development in the early 21st century are urbanization and reurbanization (Albiez, Banse, Lindeman, & Quint, 2016). The UN-Habitat (2016) notes that “improving the lives of the millions living in slum conditions today continues to be a core task for development and for ending our world’s poverty”, this was first underpinned by Target 7D of the Millennium Development Goals and repeated in Target 11.1 of SDG 11: “By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums” (United Nations, 2017). In the New Urban Agenda (UN-Habitat, 2016c), the importance of “Participatory and ‘Bottom-Up’ Practices” in all challenges linked to urbanization is stressed, profiled as “legitimate alternatives or complimentary catalysts for positive change”. These ‘Bottom-Up’ Practices can assist governments in developing more appropriate policies and addressing urban challenges through national and local development policy frameworks (Croese, Cirolia, & Graham, 2016). Among these challenges is the improvement of the living conditions in INSEs.

Community currencies as an innovative mechanism furthermore stands as a key tool for representing and supporting the social and solidarity economy (SSE) (William Ruddick & Mariani, 2013). This is underpinned by the Mexico City Declaration for Habitat III on Financing Urban Development which calls for “further research, promotion, systematization

and scaling-up” of “local, complementary and thematic currencies” amongst other SSE strategies and mechanisms (United Nations, 2016). Community currencies furthermore play an important role in the global commons movement (Grassroots Economics, 2017).

1.5 Contributions to the Academic Literature

Based on the theoretical background (chapter 2 and 4) and the review of the literature (chapter 3) this thesis research aims to contribute to the academic literature in the following four ways. Firstly, this research answers to the need of quantitative evidence of the impact of community currencies. Secondly, the quantitative evidence on community currencies and informal settlements only provided quantitative evidence on some economic and social livelihood outcomes, there has not been a quantitative study assessing the impact of these CCs from a lifestyle perspective, which is a more holistic perspective on development. Thirdly, to date this research is the first to base its analysis on the Sustainable Lifestyle Analysis (SLifA) framework. Fourthly, the existing evidence does not explicitly show how these community currencies differ from, and go beyond the outcomes of, cash transfer programs.

1.6 Research Question

This research will focus on the following five community currencies developed by Grassroots Economics and currently circulating in Kenya: Bangla-Pesa, Ng'ombeni-Pesa, Gatina-Pesa, Kangemi Pesa, Lindi-Pesa. These currencies are unique monetary programmes. They are not backed by legal tender money, only by the social capital of the implementing communities. These communities benefit in turn from this money creation process; not only because such schemes serve local development from an economic point of view, but also because they foster development in the multiple dimensions of the concept, since they tend to be common resources (Dissaux, 2016). This thesis investigates CCs in INSEs from a holistic perspective, taking all aspects of development into account, by aiming to answer the research question *Do*

community currencies have an impact on lifestyle outcomes of local prosumers in informal settlements?

1.5 Overview of Thesis Chapters

Subsequent Chapter 2 provides background information and consists of four sections. The chapter starts with the explanation of the country context. Firstly, it outlines the historical patterns of immigration that led to the formation of the present foreign-origin stocks. Next it provides information on the current situation of non-western minorities in the Netherlands. This is followed by an overview of policies addressing the challenge of integration and segregation, including how the approach towards these issues has changed since the guest-worker period. Chapter 3 provides an overview of the main literature on community currencies. This chapter builds upon the theoretical foundation of the previous chapter and provides an extensive review of the literature on CCs in INSEs. Chapter 4 presents the theory of the Sustainable Livelihood Approach and the Sustainable Lifestyle Analysis in the first section. The second section of Chapter 4 discusses how the Community Currencies of Grassroots Economics Develop Flourishing Communities and Prospering Local Economies. At the end of each section, the hypothesis regarding the given theme are listed, and at the end of the chapter, the overarching model – including all relationships and hypothesis – is illustrated in a graph. Chapter 5 discusses the data used for this study in detail and the statistical methods used to examine the previously presented hypothesis. In chapter 6 the descriptive statistics of the used variables and the regression analysis is presented. The final chapter (7) discusses the theoretical implications of the results, together with the limitations of the study and the policy implications of the study findings. In conclusion, chapter 7 comprises concluding remarks and the discussion of recommendations for further research.

2 Background

2.1 Kenyan Context

Before investigating Community Currencies and INSEs in Kenya, the context in which Grassroots Economics developed its CC programs will be sketched. Despite the fact that Kenya is “a leading commercial and logistics hub in the region” and is the largest East-African economy (Muchai & Kimuyu, 2017), it experienced stable economic growth in the past decade and is “one of the fastest growing economies in Sub-Saharan Africa” (World Bank, 2017c), and there has been the introduction of several monetary innovations in the country in the past decade (Cook & Mckay, 2017; Mugo & Kilonzo, 2017), Kenya has a poverty rate of 45.5 percent (UNDP, 2017). Additionally, Kenya has an unemployment rate of 11 percent, higher than the 7.2 percent for Sub-Saharan Africa (ILO, 2016). For young Kenyan adults (age 15-24) the unemployment rate is 22.2 percent, twice the overall number for Kenya and twice the 11.1 percent for young adults in Sub-Saharan Africa. The IOM notes “Youth unemployment is likely a key driver of rural–urban migration...”. (IOM, 2015, p.19).

One of the ways the high poverty and unemployment rates manifest themselves is with the growth of the informal sector and informal settlements. The World Bank (2017b, p. 26) estimates that in Kenya “nearly 61 percent of urban households live in” INSEs. The growth of the Kenyan population living in INSEs is unlikely to stop given Kenya’s “urbanization rate of 4.4 percent” (World Bank, 2017b, p. vi). National and local governing bodies are unable to manage (lack of provision of infrastructure, housing, basic services...) this unceasing urban growth and “formal wages are also not able to cope with income generating needs of the increasing urban population, contributing to growth of the informal sector” (UN-Habitat, 2016, p. v). Efforts have been made to address the housing problematique in the 2010 Constitution of Kenya which established “the right to housing as an enforceable socio-economic right”; and in the first and second medium term plan of the Vision 2030 Strategy, there is however still a housing deficit of more than 2 million units (World Bank, 2017b, p. vi).

There has been intervened in numerous ways, with interventions such as redevelopment, residents being forcibly evicted and resettlements, slum upgrading

programmes, regularization, financial service innovations and site and services schemes; but the needed outcomes were not reached, because they did not have the required impact or scale (UN-Habitat, 2016d). The informal settlements in Kenya continue to be confronted with countless challenges, such as unemployment and lack of basic services such as health services (Bendell, Slater, & Ruddick, 2015, p. 10).

Simultaneously various currency innovations have been introduced in Kenya over the past decade. Of which the most well-known example is the mobile banking app M-PESA. Mobile banking services such as the M-PESA “are commercial services, mostly provided by private telecom companies, and their use implies fees even for transaction purposes, contradicting with the public good nature of money” (Dissaux, 2016, p. 8). They are a market based approach to poverty alleviation fitting in the ‘financial inclusion’ narrative (Doligez, Bastiaensen, Bédécarrats, & Labie, 2016). Microfinance however demonstrated the shortcomings of a purely market-based approach where the bottom of the pyramid is regarded as dead capital waiting to be turned liquid (Bateman & Chang, 2012; Roy, 2010, 2011).

In the domain of monetary innovations, a welcomed antipode to the mobile money services, such as the M-PESA, is formed by the CC programs of GE. They allow for a context-specific approach to poverty alleviation, aiming at the socio-economic empowerment of the communities using them. CCs do so since “they are locally developed and adapted systems, maximising their potential appropriation, and they allow for collective dynamics which can be the basis for the development of a cooperative economy” (Dissaux, 2016, p. 8).

2.2 Community Currency Programmes by Grassroots Economics

2.2.1 Background

According to the World Bank, there is an enormous credit gap for informal SMEs, precisely a gap of US\$ 1.4 trillion, which limits human potential (World Bank, 2015). This furthermore results in conditions where there is no safety system and no resilience building, a lack of health care, education and growth (Hove et al., 2013). In Sub-Saharan Africa, 59 per cent of the urban population lives in slums and this number is expected to increase up to 1.2 billion by 2050 (UN-Habitat, 2016).

The market situation in the INSEs in which Grassroots Economics operates fluctuates extremely; with daily sales revenues that can sink under 2 US dollars a day, which causes enormous stagnations in these markets (W. Ruddick, personal communication, March 22, 2017). Although there are sufficient goods to trade with, the lack of credit is very often a barrier to trade these goods. In order to inject liquidity in these sectors microfinance has been a solution that has been looked at for many years. Microfinance has unfortunately been pulling out of the bottom of the pyramid, because it lacks profitability and generally it lacks impact at that level (Abhijit Banerjee, Duflo, Glennerster, & Kinnan, 2015; Bateman & Chang, 2012). Cooperatives have been a solution, but they are lacking leverage; since they do not have the ability to really inject liquidity (W. Ruddick, personal communication, March 22, 2017). Community currencies could be a tool for microfinance and cooperatives as will become clear in this section. Direct cash transfers stand as another solution for injecting liquidity and helping local economies develop. The empirical research shows that there are significant short-term effects of these direct cash transfer, the results of empirical studies evaluating the long-term impact are however mixed and no conclusive evidence of the long-term impact is provided to this day (Bastagli et al., 2016; Molina-Millan, Barham, Macours, Maluccio, & Stampini, 2016).

2.2.2 CC programs of Grassroots Economics

A new financial service is needed: one for low income communities that builds capacity and develops credit ratings prior to being in formal banking and develops local economies in general. The community currencies that Grassroots Economics has been developing since 2010

in Kenya answer to these criteria. These currencies are regional means of exchange that are a supplement to the national currency system. Low-income communities are empowered by building networks of businesses in these communities, by helping them create their own supply chains and by leveraging local businesses into being part of their supply chains. Grassroots Economics furthermore helps develop cooperative businesses and measures trade in order to develop capacity and credit ratings (Grassroots Economics, 2017). Their CC programme is called Sarafu-Credit, this is the family under which the six CCs of GE fall and the aim of the programme is to create stable markets in low-income communities based on trust and local development (Dissaux & Ruddick, 2017).

Grassroots Economics develops CC systems in Kenya and throughout East Africa that work with cooperatives and form networks of businesses. The businesses involved collectively develop factories, supermarkets and other local assets, which replace imports. Credit is issued based on the assets of the cooperative as collateral and it is issued into members based on individual audits of their businesses. These businesses then get an initial credit level, which is a zero-interest loan. These credits subsequently circulate in the community. If anyone needs to clear those credits, for example when they collect more than their initial credit rating, they can clear those credits using the cooperative collateral (see figure 2) (Grassroots Economics, 2017).

In short, the CCs of GE create a buffer system of currency in the community, which is assured by local assets. This brings the ability for cooperatives to leverage the assets they have into a local circulating credit, that circulates even when there is no Kenyan Shillings in local circulation, as is the case during periods of crisis, where external markets stop and there for example are no job opportunities for the day labourers. Businesses participate in the programme because of advantages such as an increasing number of clients, local supply chains and marketing. Once these businesses surpass their credit level, they can redeem their excess credit for the national currency. They are paired with initial individual and group savings accounts, which give them the opportunity to start saving money for the first time (W. Ruddick, personal communication, March 22, 2017).

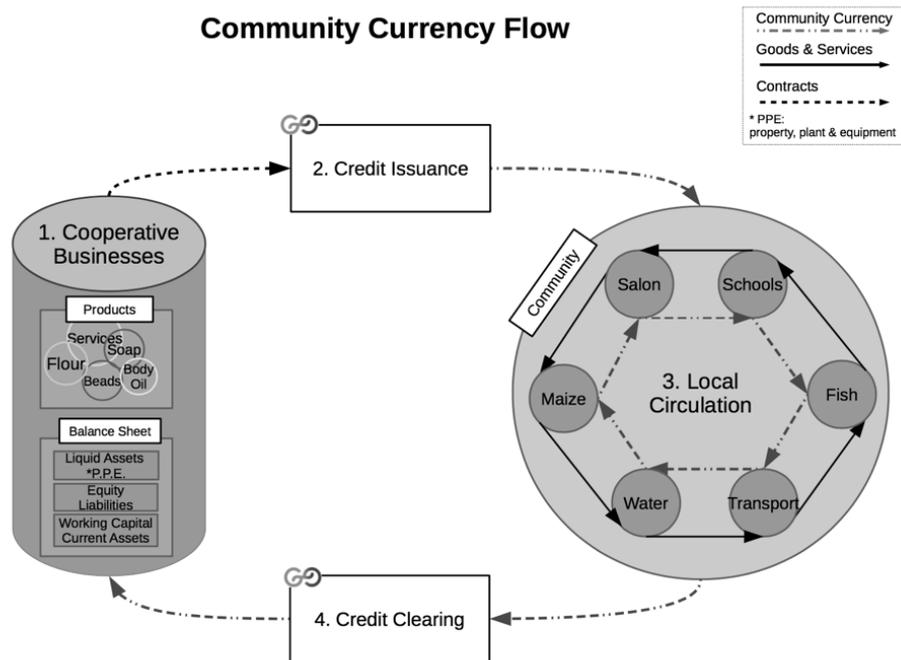


Figure 1: Model circulation CC
 Source: Grassroots Economics, 2017

In these communities, the CC takes the role of a spending currency versus the national currency as a savings and investment currency. Because of the increased circulation of the local currency, benefits from donor and governmental funds that come in the form of local currencies are magnified. The existing large range of networks in this system, reaches from general shops to building materials, to vegetable kiosks, to haircutters and schools (W. Ruddick, personal communication, March 22, 2017).

Business owners start joining for reasons such as seeing their fellow businesses that joined flourish or seeing them pay for their kids' education with the CC, for example in local schools that accept the CC. Another benefit of CC for business owners is that it allows them to save money as well as invest in group assets. Businesses with the Sarafu-Credit in Kenya, receive a zero-interest credit line. With this credit, they can increase their sales, turnover and in turn buy more goods in the network and buy throughout this one supply chain. The excessing Sarafu-Credit can get exchanged for cooperative assets as well as Kenyan Schillings (W. Ruddick, personal communication, March 22, 2017). Additionally, businesses get training and

support throughout the process, allowing their businesses to continue growing and involve more businesses into the system (Grassroots Economics, 2017).

The currency uses security printed paper vouchers as the main medium of exchange, because the interaction in trade with them is free principally. Initially, the basic unit of the currency is 5 U.S. dollar cent, after moving to bigger amounts, users are moved to a mobile phone app to trade larger amounts and build their credit score based on their history of trade using the mobile phone. The programmes are backed up by agent-based modelling and computational economics. Statistics are taken from the communities involved, and agent-based modelling and computational economics are subsequently applied to project how in new communities these CC programmes can find a balance with the national currency. According to the results, currency gets injected or removed (depending on the assets of the cooperative) (W. Ruddick, personal communication, March 22, 2017).



Figure 2: Bangla-Pesa voucher
Source: Grassroots Economics, 2017

2.2.3 Detailed Working of the CC Programs of GE

The communities in which Grassroots Economics is active in mostly consist of small businesses that are run by a single person or family members at the service of the local market. Women in most cases run these businesses and men are mostly employed outside the INSEs. There is a lot of economic activity taking place in these INSEs. Yet, due to development imbalances between these INSEs and their surroundings, outflows are chronically higher than inflows in these areas. In combination with high seasonality, there are periods of serious shortage of a means of exchange. Due to the scarcity of money exchanges cannot be done, needs are not met, although available goods and services may well be available, but not exploited. The CCs of GE were primarily introduced to counter these monetary dynamics in these communities. They supplement scarce national currency when it is lacking, thus bridging resources that are unused with demand that is not met. The countercyclical movement of the CCs creates a buffer that brings stability to the local economic situation (Dissaux & Ruddick, 2017).

Before CC is issued in a community, stakeholders are identified and the capacity of stakeholder assets, businesses and network is assessed. GE initiates this mobilization by conducting several activities to inform and introduce them to the concept and to train the community members for an effective later use of the CCs. During this process, the community can also reflect on the existing economic network, its structure, weaknesses and strengths. After this mobilisation phase², local stakeholders for the organisation of the local programme are needed. The person that would like to join the project has to have four other members of the community that back him, meaning they confirm their trust in and endorse this person. The project group then has to be registered as a Community Based Organisation (CBO); a statute

² For an overview of the implementation phase, see Appendix 1 'Implementation Phases CC'

which is closely linked to the one of an association and that give group a legal independent existence. Subsequently, the election of a board for the group needs to be done. The board is “responsible for the animation of the group and the conduction of its activities” (Dissaux & Ruddick, 2017, p. 3). Lastly, two essential elements are negotiated: the constitution and the CC vouchers. These vouchers are designed collaboratively, for them to represent social and economic aspects of the community visually. Dissaux and Ruddick (2017, p. 3) describe the constitution for the project as follows: “the constitution details the operating rules of the group, by which each member has to abide.”. Business owners, representatives of existing groups, schools’ teachers and community leaders are the stakeholders that are all put together by the whole process.

The CC is only introduced after this first preliminary stage and if there is a critical mass of minimum 100 members. Upon the introduction of the CC each member is given the same amount, namely an amount in CC that is worth 400 Kenyan shillings. Since all participants receive the same amount, the amount of allocated CC is “strictly proportional to the number of members” (Dissaux & Ruddick, 2017, p. 3). The CC uses security printed paper vouchers as the main medium of exchange with vouchers of 5, 10, 20 and 50, with CC being worth the same amount in Kenyan shilling. The initial 400 CC allocated (worth 400 Kenyan shillings) is approximately equal to a household’s average food budget per day. From this 400 CC ($\approx 3.6\text{€}$) half has to be contributed to a community fund. Meaning that each member receives 200 CC directly, while the other 200 CC gets into circulation in the community once spent through activities of the community. Circulation is assured as follows: “This total of 400 CC gives each member access to goods and services from the rest of the network for this same value. At the same time, each member is committed to accept the community currency as much as he uses it, by providing his own goods and services to the rest of the community. Each member has therefore to keep a relatively constant balance of community currency in order to allow it to circulate: one should not spend without accepting it back, or accumulating it without spending it.” (Dissaux & Ruddick, 2017, p. 3).

The Kenyan CCs are not by national currency, unlike most other local currencies who are fully backed by national currency. They furthermore can only by exception and for a fee be exchanged for Kenyan Shillings. Meaning that the CC, once allocated, can only be spent on goods and services from other members, which in turn agreed to accept CC for their goods and services. The informal community resources and the commitment to this medium of exchange by the community members are thus the only backing. Dissaux and Ruddick (2017, p. 4) describe the particular meaning of money in the case of the CCs of GE as follows: “In this case, paper vouchers become money through the commitment of the members to use it as money: this is money creation put into practice. What backs the currency here is a particular form of capital: social capital in the form of trust. It is the trust shared by members of the community of payment that this paper can be accepted to get goods and services from others – the trust that this paper can act as money – which actually turns it into money. Its liquidity comes from the mutual indebtedness of all members toward each other, as the community currency creates a web of debts throughout the community.”

A member which balance is low is a debtor, has to offer his own services and goods and accept CC for these. Contrariwise, a member which balance is high has a claim on services and goods of other CC members. Only when over time these debts are settled and renewed the CC can circulate: the basis of these CCs is thus a rule of mutual credit. This monetary circulation is thus based on a principle of reciprocity, only possible because of voluntary interdependence and complementarity of the participants. The CC thus represents the trust members have in the credit of one another. In this context, the role of Grassroots Economics can be described as follows: “GE’s role is to build that trust through enshrining responsible regulation which ensure users will see full value by accepting such credit. In this sense GE’s responsibility in developing such programs is that members will not go out of businesses through acceptance of such a credit.” (Dissaux & Ruddick, 2017, p. 4).

2.2.4 Impacts of the programmes

The CC programmes of Grassroots Economics have an impact on 1140 businesses across 5 communities, both socially and economically. In August 2017 the Miyani-Pesa was launched in Kwale County, which means Grassroots Economics now is active in 6 communities; of this new program there is no impact data yet due to its young existence. Grassroots Economics reports the following social impacts in the 5 communities of which impact data was available: 93% (1114) members are willing to continue using and even increase using the CCs, 23% of participants report using the CCs to pay school fees, 57% of members report CCs being used for environmental purposes and an increase in trust in the community is reported by 77% of the members. The by GE reported economic impacts in the 5 communities are: an average of 36.6% of sales in the communities are with CC, 6% increase in daily food purchases by using CC, 17% of participants report acquiring new workforces because of the program, 57% of participants report an increase of costumers and 65% report increases in sales because of the CC program, 95% of members retained and GE found that the longer the participation in the program the more CC the members are using (Grassroots Economics, 2017). Four cooperative supermarkets and two factories have furthermore been developed using the programmes. Additionally, 80% of the users are starting to save and join formal banking services. The social enterprise measures its impacts by yearly survey waves of approximately 2000 surveys using Open Data Kit and Android phones (W. Ruddick, personal communication, March 22, 2017). The programme impacts were furthermore measured through five empirical academic studies (see section 2.4), which demonstrated the programmes of GE increase local trade, employment, trust, interconnectedness and social services (Richards & Ruddick, 2013; Ruddick, 2011, 2015; Ruddick et al., 2015).

2.2.5 Grassroots Economics

CCs for new communities are enabled through the help of sponsors. In order to stay in those communities and have a long-term impact, part of the business development GE does and assets go back into the programme. The aim is that after some years after introduction of the CC program the community runs the programme themselves. GE does certification and auditing, as well as, training in communities across Africa. They furthermore provide technical support to maintain certain levels of liquidity within these communities. Grassroots Economics is a non-profit social enterprise. The organisation has a foundation as well as a limited liability that focusses on the asset development in these communities and aims to attract both sponsors and investors for developing more cooperative businesses in these communities. The limited liability company helps with asset and credit development, whilst the foundation works on targeting communities and developing cooperatives. But this model is evolving constantly. Currently GE is far more active in teaching cooperative and other organisations how to start and run these CC programs and they do less and less active management themselves. The limited liability company is hence less and less needed for Grassroots Economics (W. Ruddick, personal communication, March 22, 2017).

2.2.6 Positioning of the programmes

High lending rates impedes the access to credit for Kenyans, especially for the less well-off Kenyans (InterMedia, 2017). According to InterMedia (2017, p.59) in 2016 27% of Kenyans that needed credit were not able to access it. The CC programmes of GE try to improve access to credit. Compared to conventional loans, GE provides loans at very low amounts, offering a minimal starting loan amount of 4 US dollars at zero interest. The programmes can be seen as a sort of 'pré-banking', by developing networks and giving communities the ability to develop credit scoring and their own credit based on local assets. Users furthermore have access to whole-sale and increased marketing. The governments and donors that work with GE have increased ability to target local communities and develop them. These programmes change the way we think of currency and poverty, since communities can create their own credit using these programmes. The underlying vision is that these communities do not need huge amounts

of debt imposed on them, rather they need an ability to create their own credit scoring and their own credit based on local assets. The programmes developed by the social enterprise stem from the vision that there is no poverty where there is potential (W. Ruddick, personal communication, March 22, 2017).

2.2.7 Overview of the CCs of GE

Currently six community currencies (CCs) are circulating in Kenya, implemented by the organisation 'Grassroots Economics Foundation' (GE): two in the coastal region of the country in Mombasa, three close to Nairobi, the capital of Kenya. Will Ruddick, the founder of the CC programs, launched the first CC program of GE called Eco-Pesa in 2010. The Eco-Pesa pilot program ran in three INSEs in Mombasa county. Ruddick chose to launch these programs at this location when he during voluntary work in the region saw that lack of credit limits the human potential of the residents in these INSE. GE then afterwards launched CCs in other communities with similar characteristics (W. Ruddick, personal communication, March 22, 2017). One new project, which is situated very close to this region, in the county of Kwale, was launched in August 2017 (see table 1), and is not involved in this study. The CCs are named after the locality where they circulate, plus the suffix "Pesa", which means "money" in Swahili. The first CC was introduced in the community of Bangladesh (Mombasa area) and is called Bangla-Pesa (Grassroots Economics, 2017b).

COUNTIES	COMMUNITY CURRENCY	LAUNCHED	DETAILS
Mombasa County	Bangla-Pesa in Birikani Mikindani	2013	Businesses: 218 Circulation: 87,200 (ksh equivalent) Time in circulation: 4 years (Since 2013) Cooperative Backing: Retail shop
	Ng'ombeni-Pesa In Kwa-Ng'ombe Mikindani	2015	Businesses: 203 Circulation: 81,200 Time in circulation: 2 years (since 2015) Cooperative Backing: Tailoring
Nairobi County	Gatina-Pesa in Kawangware	2014	Businesses: 258 Circulation: 103,200 (ksh equivalent) Time in circulation: 3 years (since 2014) Cooperative Backing: Wholesale Shop
	Kangemi-Pesa In Kangemi	2015	Businesses: 218 Circulation: 87,200 (ksh equivalent) Time in circulation: 2 years (since 2015) Cooperative Backing: Supporting Schools
	Lindi-Pesa In Kibera	2015	Businesses: 242 Circulation: 96,800 (ksh equivalent) Time in circulation: 2 years (Since 2015) Cooperative Backing: Retail Shop
Kwale County	Miyani-Pesa (currently in process of introduction)	2017	Businesses: 20 Circulation: 8,000 Time in circulation: New (August 2017) Cooperative Backing: Maize Milling

Table 1: Overview of CC programmes by GE
Source: Grassroots Economics, 2017

2.3 Informal Settlements

2.3.1 Informality

Within the context of studies on African urbanism the term ‘informality’ was first introduced in a 1972 report by the International Labour Organisation (ILO) on the informal sector in Nairobi. In this report, a language was codified to describe informality that continues to be used utilized in academic research up to this day. The report defines urban informality as areas where the informal sector has a base, with poor or non-existent services, where harassment by authorities is common practice and inhabitants are invisible to legal structures (ILO, 1972). Some of the main characteristics of the activities in the informal sector are: “ease of entry, reliance on indigenous resources, family ownership of enterprises, labour-intensive and adapted technology, skills outside the formal school system, and unregulated and competitive markets” (ILO, 1972). These characteristics are evaluated against formal legal systems which in most cases are large-scale and high-tech.

Since not all informal settlements still meet all of these qualifications, establishing a clear definition of urban informality is nearly impossible. This is partly because today urban informality manifests itself in a variety of ways, but also because formal and informal systems are increasingly interdependent and connected. Urban informality, although for a long time “ascribed to the infamous urban growth of the Global South can, in fact, no longer be understood as a shadow world excluded from capitalist markets and public welfare systems” (Angelil et al., 2012). As Ananya Roy and Nezar AlSayyad put it: “urban informality does not simply consist of the activities of the poor, or a particular status of labor, or marginality. Rather it is an organizing logic, which emerges under a paradigm of liberalization.” (Roy & AlSayyad, 2004). Urban informality has to be recognized as a dominant mode of urban production, whether interpreted as “liberalization from below” or disqualified as a desperate effort to enter the free-market economy and a threat to urban development (Angelil et al., 2012).

2.3.2 Definition Informal Settlements

INSEs as dominant force shaping urban growth is seen as one of the key challenges presently facing urban development in a lot of developing countries (Sheuya, 2009). Urbanists and policy makers face serious pressure in finding ways to deal with this phenomenon to achieve sustainable human settlements (Fokdal & Zehner, 2010). Besides that, they are confronted with the challenge to have a comprehensive understanding of the complexity of INSEs, their diverse contexts and livelihood conditions of its residents. This understanding is critical for the formulation of an adequate and sustainable approach for tackling the associated social, environmental, economic, physical and cultural challenges. Between the different stakeholders - academics, urban professionals and policy makers - there is however no consistent discourse of INSEs and general consensus is also lacking in the definition of the term (Fokdal & Zehner, 2010; Kanbur, 2009). A possible explanation for this, is that, like poverty, the term INSE is multidimensional; thus, has a lot of definitions (UN-Habitat, 2003a).

Various terms are used interchangeably in the international development literature, such as slum, unplanned settlement, squatter settlement, spontaneous settlement, shanty, low-income settlement, unauthorized settlement, uncontrolled settlement, illegal settlement and irregular settlement (Srinivas, 2015; UN-Habitat, 2003a). Although different authors defined INSE in various ways, they can be divided according to two perspectives: legal or planning perspective (Leduka, 2001). The former of the two emphasises the absence of formal land titles and the latter puts emphasis on the noncompliance of settlements to building and planning regulations (UN-Habitat, 2003a). Leduka (2001) defines INSEs from a planning perspective as residential buildings erected on unplanned and planned areas without having a formal planning approval. These settlements are epitomized typically by a lack of, or inadequate, infrastructure and social services and houses of low quality (Srinivas, 2015; Todaro & Smith, 2014).

A definition of INSEs from both planning and legal perspective is given by OSCE (2005, p. 2) which define an INSE as “any human settlement where housing has been constructed without the requisite permits or legal title for use of the land”. Another definition from both

perspectives can be found in OECD's Glossary of Statistical Terms (2001) which defines INSEs as "areas where groups of housing units have been constructed on land that the occupants have no legal claim to, or occupy illegally; unplanned settlements and areas where housing is not in compliance with current planning and building regulations (unauthorized housing)". The residents mostly lack justifiable rights over the houses or land occupied by them. The rights they have by their nature do not enable them to access credit from formal financial institutions. Inhabitants could be evicted or marginalized from local economic and political frameworks at the extreme case.

In the Global Report on Human Settlements, UN-Habitat (2003a) developed a comprehensive definition for INSEs, widely used by a variety of scholars. In this report, the term informal settlement is used interchangeably with other terms such as slum and unplanned settlement. In for example Palmer et al. (2009, p. 42) UN-Habitat's definition is adopted and the authors emphasized that INSE is been referred to with different names: "Informal settlements – whether they are called slums, shantytowns, bidonvilles, gecondu, favelas or by another name – have been defined as lacking one or more of the following five conditions: access to water; access to sanitation; durable housing quality; sufficient living area; and security of tenure." Although these different names are used interchangeably, Kamete et al. (2001, p. 31) emphasize they have different connotations. They note that the terms slum and shantytown emphasise the poor social conditions of settlements, the term squatter settlement connotes illegality of settlement, and all three previous terms are comprised by the term INSE.³

³ Note that for this reason some quotations or stated facts in this thesis may use terms such as slum, squatter settlement etc. since they have been used interchangeably with the term INSE.

CHARACTERISTIC	INDICATOR	DEFINITION
1. ACCESS TO WATER	Inadequate drinking water supply: (<i>adjusted MDG Indicator 29</i>)	A settlement has inadequate drinking water supply if less than 50% of households have an improved water supply: <ul style="list-style-type: none"> • Household connection • Access to public stand pipe • Rain water collection with at least 20 liters/person/days available <i>within an acceptable collection distance</i> .
2. ACCESS TO SANITATION	Inadequate sanitation: (<i>MDG Indicator 30</i>)	A settlement has inadequate sanitation if less than 50% of households have improved sanitation: <ul style="list-style-type: none"> • Public sewer • Septic tank • Pour flush latrine • Ventilated improved pit latrine The excreta disposal system is considered adequate if it is private or shared by a <i>maximum of two households</i> .
3. STRUCTURAL QUALITY OF HOUSING	a. Location	Proportion of households residing on or near a hazardous site. The following locations should be considered: <ul style="list-style-type: none"> • Housing in geologically hazardous zones (landslide/earthquake and flood areas); • Housing on or under garbage-mountains; • Housing around high-industrial pollution areas; • Housing around other unprotected high-risk zones, e.g. railroads, airports, energy transmission lines.
	b. Permanency of structure	Proportion of households living in temporary and/or dilapidated structures. The following factors should be considered when placing a housing unit in these categories: <ul style="list-style-type: none"> • Quality of construction (e.g. materials used for wall, floor and roof) • Compliance with local building codes, standards and bye-laws
4. OVERCROWDING	Overcrowding	Proportion of households with more than two persons per room. The alternative is to set a minimum standard for floor area per person (e.g. 5 square metres)
5. SECURITY OF TENURE	Security of tenure (<i>MDG Indicator 31</i>)	<ul style="list-style-type: none"> • Proportion of households with formal title deeds to both land and residence • Proportion of households with formal title deeds to either one of land or residence • Proportion of households with enforceable agreements or any document as a proof of a tenure arrangement.

Table 2: Indicators and thresholds for defining INSEs
Source: UN-HABITAT (2003a, p. 12)

The comprehensive definition developed by UN-Habitat in the Global Report on Human Settlements defines INSEs through five characteristics, as shown in table 1. Out of this the most recent definition of INSEs by UN-Habitat (2015) stems, which has been formulated in its issue paper on INSEs. For purposes of comprehensiveness and consistency this is also the definition used in this thesis. It defines **informal settlements as residential areas where “1) inhabitants have no security of tenure vis-à-vis the land or dwellings they inhabit, with modalities ranging from squatting to informal rental housing, 2) the neighbourhoods usually lack, or are cut off from, basic services and city infrastructure and 3) the housing may not comply with current planning and building regulations, and is often situated in geographically and environmentally hazardous areas.”** (UN-Habitat, 2015, p.1) They also note that INSEs can be a type of real estate speculation not only for low-income levels, but for all levels of income, poor and affluent. This definition furthermore has been developed specifically for INSEs and in the report a clear distinction is drawn of this term with other terms such as slums, for which it has been used interchangeably: “slums are the most deprived and excluded form of informal settlements characterised by poverty and large agglomerations of dilapidated housing often located in the most hazardous urban land. In addition to tenure insecurity, slum dwellers lack formal supply of basic infrastructure and services, public space and green areas, and are constantly exposed to eviction, disease and violence.”. Although this definition of INSEs by UN-habitat is probably the most widely applicable, problems arise however when applying it. It is, for example, difficult to measure the size of INSEs - because the borders cannot be easily identified - and to obtain the exact number of people living in them. This discussion however goes beyond the scope of this research. Yet, what the sources of existence of these settlements are, deserves more attention in the context of this research.

2.3.3 How do informal settlements originate?

INSEs can be regarded as outcomes of inappropriate urban regulatory frameworks containing planning, housing and economic policies. However, government officials in the field of policy making and urban development often see INSEs rather as a problem of land use and a hindrance to urban development and economic growth (Cities Alliance, 2016; UN-Habitat, 2016a). The root causes of INSEs and the effects on sustainable livelihoods are summed up by Majale (2002, p.3): “Informal settlements, like most of the problems confronting people living in poverty in the urban South, are the outcome of failed policies; inappropriate regulatory frameworks and administrative procedures; dysfunctional land markets; unresponsive financial systems; bad governance; corruption; and a fundamental lack of political will. Each of these failures compounds the problems faced by urban poor communities and denies them the opportunity to optimize the benefits of urbanization, and also constrains the substantial potential for human development presented by urban life and the achievement of sustainable livelihoods”.

Likewise, Cities Alliance (World Bank, 2013) and UN-Habitat (2003, p. xxxii) attributed the existence of INSEs in various developing countries to corruption, bad governance, inappropriate regulation, failed policies, a fundamental lack of political will, unresponsive financial systems, dysfunctional land markets and limited government capacity for the provision of adequate serviced housing and land for the larger part of the continuously increasing number of urban dwellers.

The incidence of INSEs in developing countries has close links to economic development policies of the country, trends in national income distribution and economic cycles. UN-Habitat (2003) notes that the negative effects of globalisation, the higher demand for labour and the cyclical nature of capitalism leads to an uneven wealth distribution and inequality in many developing countries. Generally, the poor do not have adequate resources to access housing and land through the conventional formal markets for land and housing (UN-Habitat, 2006). According to UN-Habitat (2016, p.6a) the failure to adopt, at every level, adequate urban and rural land policies continues to be the root cause of poverty and inequity

and they furthermore state: “There is a relationship between the growth of informal settlements and slums and the lack of adequate housing and service land. Legal access to land is a strategic prerequisite for the provision of adequate shelter for all.”

The larger part of urban dwellers in developing countries is excluded from formal and legal processes of access to housing and land and have therefore developed different ways, mainly outside formal regulatory frameworks for accessing land for shelter and other land needs in the city (Payne, Durand-Lasserve, & Rakodi, 2009). Following upon this observation, Payne and Durand-Lasserve (2012) and Sclar and Northridge (2003) argue INSEs per se are not the problem, rather, the fact that they spatially manifest social, economic and legal exclusion from formal urban areas, inappropriate policies, and urban poverty, is. Durand-Lasserve and Payne (2012, p.17) note: “...tenure informality is the end result of legal, political and economic exclusion mechanisms. The expansion of informal settlements reflects the gap between demand for land and its provision by the public and formal private sector.”

According to Durand-Lasserve et al. (2002) failing policies of national and local governments are probably the most significant causal factor for the unceasing incidence of INSEs. The result is the by its nature exclusionary urban development pattern in which adequate housing and land for the poor fails to be provided by legal and political frameworks and property markets. Consequently, the people unable to fulfil their housing and land needs through the formal frameworks are forced into informality. Huchzermeyer & Misselwitz (Huchzermeyer & Misselwitz, 2016) note that an active solution to the basic need of shelter is presented by INSEs for the majority of the population in a lot of African countries, especially in Sub-Saharan African countries.

Further insights in the causes for the incidence of INSEs are provided by Hove et al. (2013). They attribute the sharp rise in INSEs to the reversal of the urban growth rate in Sub-Saharan Africa: in 1950, the region was the least urbanized in the world and since the early 1970s it had the highest growth rate in the world. They argue this transformation can at least partly be attributed to the post-independence macro-economic policies of numerous African governments that incentivized urbanisation by encouraging the establishment of large, capital-

intensive industries in large cities. Policies related to food subsidies, agriculture and exchange rates furthermore tended to keep food prices low for consumers in urban areas at the expense of farmers in rural areas (World Bank, 1989).

Rural-to-urban migration is the most important cause of this rapid urban growth in Sub-Saharan African countries. There are many causes for rural-to-urban migration, but two stand out: firstly, rural poverty resulting from low productivity in the agricultural sector in combination with population growth and secondly the under-provision of social, economic, financial and physical infrastructure. The former, which has been identified as the strongest motivation for rural-to-urban migration, is sometimes aggravated by natural disasters such as prolonged drought (Hove et al., 2013).

The 2009 Global Report on Human Settlements of UN-Habitat identifies the following main drivers of urbanization in Sub-Saharan Africa: high levels of rural-urban migration, natural increase, the reclassification of rural areas, and, in some countries, negative events such as conflicts and disasters” (UN-Habitat, 2009, p. 26). Subsequently, the increasing number of the poor urban dwellers find insecure shelter in overcrowded INSEs epitomized by a lack of security, employment, water, sanitation, social inclusion and electricity (Berger, 2006).

2.3.4 Labour and Livelihoods in Informal Settlements

Urbanisation in Sub-Saharan Africa in the past decades cannot be separated from the growth and development of the parallel or informal economy. Even though the informal economy could be regarded as a valuable ‘safety net’ for redundant civil servants and the unemployed youth as well as a buffer that softens the effect of economic shocks, it is epitomized by low incomes and productivity. Therefore, one of the responses by local governments is to largely ignore these informal activities. Because these informal activities and sectors are also seen as a hindrance to urban development by some local authorities and are illegal, another frequently appearing response is the forced eviction of the inhabitants of INSEs or the destruction of them (Hove et al., 2013).

The latter underpins that the livelihood and job opportunities are highly vulnerable facets of life in INSEs. The UN-Habitat (2016b) emphasises the issues of underemployment, unemployment and underpaid informal labour in their 2015/2016 Slum Almanac. They describe that the job options that are available, are most likely part of the informal sector, which accounts for 85 per cent of all new job opportunities worldwide. The jobs in the informal economy are however very low-paid, unskilled and an insecure livelihood option. These options, that are part of a 'subsistence economy', allow dwellers of INSEs to merely survive, not to change their livelihood conditions substantially or to realize their full human potential. The most affected by this lack of job opportunities are the young inhabitants of INSEs as only a little more than 1.25 USD a day is earned by more than a quarter of the young poor urban dwellers (UNESCO, 2012).

Given these conditions of extreme human insecurity, long-term solutions for the improvement of livelihood conditions in INSEs is necessary. UN-Habitat (2015) notes in their issue paper on INSEs that it is exactly these solutions that are missing: "The lack of government response to, and support for, livelihoods in slums and informal settlements, combined with their lack of integration into the broader urban environment, perpetuates long term inequality and inter-generational disadvantage..."

Mani et al. (2013) elaborated a revolutionary theory of poverty in their work *Poverty Impedes Cognitive Function* where they point out that the behaviour of people changes when something is perceived scarce by them. It is an environment of lack of opportunities that results in the urban poor having a scarcity mentality; the focus is narrowed towards what is immediately lacking (Mullainathan & Shafir, 2013). This insight reveals that in order to change the living conditions in these settlements this scarcity mentality has to be changed and initiatives doing this should be developed and/or promoted. The community currency programmes of Grassroots Economics seem to hold that potential and whether they also actually do is the subject of this study.

2.4 Community Currencies

2.4.1 Background

One could see the informal economy as an alternative reality outside the capitalist system, but they can also be described as the active frontiers of modern-day capitalism, as greenfield sites where the creation and expansion of new types of accumulation takes place (Roy, 2010). These greenfield sites or INSEs, are the locus of microfinance (Angelil et al., 2012). Microfinance can be regarded as one of numerous occurrences of bottom billion capitalism, or the stretching of the forces of the market with the aim of integrating the poor, or in other words mining the fortune at the bottom of the pyramid. This conversion of poverty into capital is called 'poverty capital' by the noted scholar of international development and global urbanism Ananya Roy (2010). It is reflected in the vision of the economic libertarian De Soto, who perceives informal settlements as a world of 'dead capital' that waits to be made liquid (Roy, 2011). Roy (2010) notes that microfinance is a peculiar kind of 'poverty capital'; one where debt is the commodity that is being produced, valued and traded. She additionally claims that in microfinance, the risk scoring is much more an evaluation of the ability to repay, than a valuation of the labour of the poor or of their assets. The mantra of microfinance is: "The poor always pay back" (Dowla & Barua, 2006). This is the underlying speculative arbitrage of microfinance (Gowan, 2009); where the conducts of the poor are calculated and the guarantees of financial discipline are provided by microfinance institutions.

Roy argues for this ethical register to be understood as neoliberal populism: the people's economy is celebrated by microfinance, but by doing this they are also positioned as a profitable market for finance capital. The public narrative of microfinance has been predominantly about entrepreneurialism and yet, Roy notes, it is clearly shown by empirical research that microfinance loans, if they are of use for the poor, are useful solely because they help with 'consumption smoothing'. They allow the poor to survive immediate short-term challenges, such as the ones linked with their vulnerable livelihoods and the incredible seasonality of unemployment and hunger and the challenges posed by natural disasters. They however do not

necessarily comply with that very seductive image of the urban poor, that due to microfinance loans, almost overnight, establish businesses that flourish (Roy, 2010).

An alternative for injecting liquidity in INSEs through microfinance can be seen in the CC programmes developed by Grassroots Economics that use CCs as a tool for the empowerment of communities with the aim of creating prospering economies. In this section, the general literature on community currencies will therefore be discussed to provide the background for the next section that focusses specifically on CCs and INSEs.

2.4.2 The Field of Community Currencies

The field of community currencies continues to increase and has been in a condition of rapid transformation since its emergence thirty years ago (Blanc, 2011). Community currencies are seen by proponents as alternatives for the global monetary apparatus, which is perceived by them as the underlying cause of various global issues ranging from poverty to the climate problematique. By other proponents CCs are looked at in a more practical fashion, as pure business tools or hands-on approaches to issues of sustainable development (Ruddick & Mariani, 2013).

In an attempt to describe community currencies as precise as possible, the definition of CCs used in this work is the following: **A community currency system is a subset of complementary currencies, and is tied to a specific, restricted and delineated community (CCIA, 2015). A complementary currency is a medium of exchange other than national currency that is free of interest (Lietaer & Belgin, 2006). Community currencies are used by a network of people with a common bond, like members of an association or a community and aims to link unmet local needs with underutilized resources (Lietaer & Hallsmith, 2006). These systems may be used in business communities (mutual-credit systems) or online communities (digital currencies) or they can be geography-based which would make them a form of local currency (CCIA, 2015).** The CC under study here is a mutual-credit system.

Up to this day the field of community currencies continues to explore its utility and scope. CCs are advocated as having the ability to form a diverse monetary ecosystem as opposed to the monetary monoculture that our monetary system -with all its risks and flaws- still is today (Greco, 2009; Lietaer & Belgin, 2006). This monetary diversity could bring more resiliency to economic shocks, as is shown by the Swiss WIR currency (Hallsmith & Lietaer, 2011). The study of the Swiss WIR community currency by Stodder (2007) demonstrated that the countercyclical functioning of CCs allows economic activity in communities to remain at a similar level during a recession, when individuals are cash-short.

Community currencies as a tool for sustainable development is also a subject that is widely studied in the community currency field. Bendell and Greco (2013) note it is not possible to achieve a transition towards a sustainable society with our current monetary system, because in this system banks issue money as interest-bearing debt and they argue that to enable transition, local currency programmes that support direct credit clearing are needed. Furthermore, Seyfang and Longhurst studied the potential CCs hold to serve community action for sustainability and studied the diffusion of these grassroots innovations. A systematic review of academic literature on the topic of community currencies and sustainable development is provided by Michel and Hudon (2015). With the aim of summarizing the global impact on sustainable development of the many case studies of CCs, they explored how CCs contribute to economic, social and environmental sustainability. The main findings of this study were that environmental outcomes of community currencies are identified explicitly only by a very small amount of studies; their contribution is mostly to social sustainability and the benefits to economic sustainability are relatively limited because of the small scale of these initiatives and the lacking awareness on their scope.

The amount of community currency programmes initiated around the globe has proliferated over the past decades (see Lietaer, 2014). Over 3000 clusters of programmes across 6 continents and 23 nations were recorded by Seyfang and Longhurst (2013). The most well-known examples are Local Exchange Trading Systems (LETS), Time banks, Red de Trueque, Ithaca HOURS and WIR. These programmes can differ significantly in terms of design,

objective, scale and context (Michel & Hudon, 2015). The proliferation of CC projects resulted in a large variety of different case studies in which numerous different terms have been used for community currencies. Different terms for CCs have been used in other languages, such as a term in Spanish that in English would be 'social money'. In English, words such as 'complementary currencies' and 'community currencies' have been used interchangeably, although they differ in meaning. Blanc (2011) attempted to build typologies and establish proper naming with the aim of providing more standardization and greater accuracy in the field. In line with this - within the CC field - influential work of Blanc and for reasons of consistency and clarity the terms 'community currency (CC)' and 'community currencies (CCs)' are the terms consistently and exclusively used in this work.

Presently, the field of CCs is developing itself as a proper discipline with a growing amount of research being carried out on the subject and a specialist International Journal of Community Currency Research (IJCCR) (Place & Bindewald, 2015). Despite the growing amount of studies, there is a growing unfulfilled need for evidence-based qualitative evaluations of the impact of CCs, particularly on participatory governance, empowerment of communities, social capital, local development goals and the sociology of the users of CCs. Place and Bindewald (2015, p.1) noted in their study on the improvement of the impact assessment of CCs: "Only around a fourth of the existing studies even touch upon impact evaluation processes". They argue this is problematic in the context of the growing demand of actors such as policy makers, funders, developers, users and academics for validation and proof of CCs as efficient and effective tools for tackling the sustainable development goals. Place and Bindewald furthermore found that in the existing research on the impact evaluation of CCs only a small amount of quantitative studies has been carried out and there are even fewer established performance indicators. They moreover identified that most of the studies are only concerned about one facet of sustainable development - social, environmental or economic - and the interactions between those three are rarely considered.

The Sustainable Livelihood Approach (SLA) provides a holistic framework for the sustainable development of communities. However, the study of CCs in relation to livelihoods

is another gap in the literature on CCs to date. The only exception I am aware of is the work of Isanya (2016), but this unpublished thesis only focusses on socio-economic livelihood. Additionally, little research has been carried out on the application of CCs in informal settlements; the existing studies on this topic will be discussed in depth in next section. Succinctly, what needs to be added is a quantitative holistic assessment of CCs as a tool for the sustainable improvement of livelihood conditions in INSEs.

2.5 Cash Transfers

Direct cash transfers stand as another solution for injecting liquidity and helping local economies develop. This section attempts to highlight why and how community currencies differ from direct cash transfers.

A well-known organisation that offers cash transfers in Kenya is GiveDirectly. They provide unconditional cash transfers (UCT) via mobile payments directly to the poor households in Kenyan communities. Haushofer & Shapiro (2016) evidence significant effects on short-term economic outcomes and psychological well-being of the UCTs of GiveDirectly. They however also mention that evidence on the long-term impacts of UCTs is lacking and that these “are still incompletely understood, especially in developing countries” (Haushofer & Shapiro, 2016, p. 2028). The empirical research on cash transfers in general shows that there are significant short-term effects of direct cash transfers, the results of empirical studies evaluating the long-term impact are however mixed and no conclusive evidence of the long-term impact is provided to this day (Bastagli et al., 2016; Molina-Millan et al., 2016). This directly uncovers one of the key differences between cash transfer (CT) programs and the community currencies of GE, since the latter also aim at fostering sustainable development and supporting self-governance of communities, therefore holding more potential to have a long-term impact (Ruddick & Mariani, 2013).

Providing cash, but not providing a much-needed structural solution on the supply-side, such as quality education and health services, seems to be a questionable approach for achieving a long-term impact. A fundamental difference between CTs and the CCs of GE, is that in the CC programs cooperative assets are developed and local trade and consumption are stimulated, hereby addressing the supply-side, which is highly important in the context of developing countries. The fact that cash transfers do not structurally address the supply-side is arguably one of CT’s biggest shortcomings (Chris Blattman, 2013).

Blattman (2013) argues that socio-economic stability and certainty and development of small and large businesses a lot more necessary in improve living standards in a country. In this context Ruddick (2017) notes: “Scouring inequality levels largely set in motion by the

Structural Adjustment Programs imposed by the IMF on Kenya in the 1980s and 1990s, it is extremely hard to see how this debt will be reversed by donating small amounts to a selection of poor people.”.

These structural aspects have not hindered the positive short-term results of the CT projects that are currently running, but may become apparent in studies investigating the long-term impacts of CTs. In this sense Ruddick (2017) notes in name of Grassroots Economics: “We, among many scholars, economists, activist and communities, believe that changing the type of currency used in the fight to end poverty is the key ingredient in seeing lasting and significant change.” Moreover, instead of being heavily dependent on streams of donor funds from the Global North, with CCs the source of lasting development is the community itself through the development of cooperative businesses in these communities, which is a backing for the CC vouchers that are administered as credit that is free of interest to the members of the community and are administered for environmental and social services. This community currency forms a stable means of exchange when the national currency is lacking and by providing credit with local assets as a collateral the community is directly empowered to develop prospering local economies. How CCs by nature bring economic stability is underpinned by the well-known example of the Swiss WIR community currency. The study of the Swiss WIR community currency by Stodder (2007) demonstrated that the countercyclical functioning of CCs allows economic activity in communities to remain at a similar level during a recession, when individuals are cash-short.

Whilst long-term development with community currencies is based on cooperative assets (e.g. maize mills, wholesale shops, coconut oil etc.), long-term development in the case of cash transfers seems to be questionable because of its dependency on donor funds. For example, if people want to make the most out of cash given to them, they need to be able to purchase affordable and high-quality services and products such as quality education, food, healthcare... (Starr & Hattendorf, 2014). The provision of these basic services however is what is typically lacking in informal settlements. As Starr & Hattendorf (2014) put it: “the poor do not spend the cash on stupid things; they just may not have access to great things”. This

underpins one of the reasons why CC programs hold potential to have a more structural impact in these communities than CT programs. Furthermore, it needs to be noted that in some cases cash transfers will not work. For example, when a lack of credit is not the problem of a poor business owner, but he faces other constraints, providing credit alone is unlikely to help him (Christopher Blattman et al., 2013). The CC programs of GE however are targeted towards the specific issues in INSEs, such as lack of basic services, high (youth) unemployment and economic instability.

The issues of lacking basic services and high (youth) unemployment are targeted by the CC programs of GE in the following way. GE has asset development, within which they are trying to develop cooperative businesses. Those businesses then form the real asset backing collateral for the credit, which is issued into the community. According to Grassroots Economics 5000 dollars in assets translates in approximately 480.000 dollars' worth of trade in a year. This system is truly building local resiliency and replaces imports in these communities. GE furthermore finds that a one dollar donation trades eight times more in the Community Currency than in the national currency. They claim that generally a dollar donation in about three months will be traded back out for cooperative assets. This long-term focus is one of the main distinguishing features the CCs of GE compared to cash transfers. The community sees roughly 24 dollars' worth of trade in about three months from a one dollar donation. This means, it is in fact more responsible to do direct giving with a local currency that is targeted to that community itself (W. Ruddick, personal communication, March 22, 2017).

With CCs funding can be more effective, because long-term circulation in the community is encouraged, which increases local trade, and hence economic development. As the amount of cooperative businesses increases, the amount of assets to be issued as vouchers increases and the amount of families in the community can use these vouchers and these vouchers can be used in more businesses or for more other services in the community. Although the impact of CCs might not be as fast as for CTs, over time CCs could outpace all sorts of donation-driven cash transfers, because they directly develop "cooperative assets into a system that distributes assets and profits to the greater community" (Ruddick, 2017).

Moreover, CCs have an environmental or social focus. The CCs of GE not only focus on developing strong local economies, but go beyond that by focusing on social and environmental sustainability. They stand as a tool for promoting the Social and Solidarity Economy (Ruddick & Mariani, 2013), try to stimulate altruistic behaviour, build trust and interconnectedness in the community (Ruddick, 2015) by providing a local means of exchange enabling one to use one's skills and services, by organising events such as networking events and big market days. Furthermore, GE tries to stimulate environmentally friendly behaviour by focusing on local production and consumption and by organising events such as tree planting and waste collection (W. Ruddick, personal communication, March 22, 2017). CCs thus hold the potential to meet the objectives of both cooperative and conventional development paradigms.

3 Literature Review

3.1 Community Currencies and Informal Settlements

This section discusses the seven published articles on CCs in INSEs in detail. All these articles study the CCs programmes in Kenyan INSEs developed by GE. Table 3 provides an overview of the published articles.

AUTHOR(S)	TOPICS OF RESEARCH	MAIN FINDINGS
1. Dissaux, T. & Ruddick, W. (2017)	- Institutionalisation CC model - Transition Bangla-Pesa model towards Sarafu-Credit model	Institutionalisation process had mixed results. A list of the challenges encountered and limits of model is provided. To overcome these limits and increase usage and impact, there has been an evolution towards the Sarafu-Credit model. The new modalities and expected results are furthermore presented.
2. Dissaux (2016)	field study conducted on the first Kenyan community currency, the “Bangla-Pesa”	- It showed the possibility of conceptualising monetary commons for social groups having monetary autonomy. -CCs can foster development in the multiple dimensions of the concept.
3. Ruddick, W. (2015)	- Trust and spending of CCs - Empirical results usage CCs	5%-10% of local food purchases are being done using the CCs and CC usage is positively correlated to increasing levels of community trust.
4. Bendell, J., Slater, M. & Ruddick, W. (2015)	- Re-imagining money to broaden the future of development finance: the case of CCs of GE	New typology of money offered called the Value-Sequence Typology. The authors propose a new definition of money as a system of agreements and symbols which influence the creation and exchange of value and power.
5. Ruddick, W., Richards, M. & Bendell, J. (2015)	- Detailed description of Bangla-Pesa programme: documentation of reasons for creation, implementation, benefits and difficulties encountered.	Bangla-Pesa is shown to have facilitated, upon its launch, exchanges of roughly 50 Euros in value per day among 109 businesses, which is projected to raise living standards in the community primarily through the utilization of excess business capacity. After only a week of circulation – Bangla-Pesa represented an estimated 22% total trade among community members.
6. Ruddick, W. & Mariani, L. (2013)	- CCs strengthening the Social and Solidarity Economy	The paper provided compelling evidence that CCs fit squarely into the efforts of organizations like the Transition Movement and International Labor Organization (ILO) to support the SSE. They also offer a buffer system to ease a transition off of fractional reserve and debt based national currencies.
7. Richards, M. & Ruddick, W. (2013)	- Kenyan businesswomen transforming slum economies through CCs: Case of CC in Bangladesh INSE, Kenya	Examination of initial programme outcomes suggest that: - Sustainable poverty reduction and community benefits are possible and cost-effective through CCs - These positive impacts can be targeted at vulnerable groups, such as women, to reduce inequality in development by enabling women to care for their families without using up their business profits. - CCs have become a global movement. - There is an acute need for an authoritative body to offer technical assistance to governments and engage with development actors if CCs are to reach their full potential.
8. Ruddick, W. (2011)	- Detailed description of Eco-Pesa programme - Evaluation of Eco-Pesa programme	Results: increase of trading and of business’ incomes, and environmental and social benefits. The programme was furthermore cost effective and provided an improved mechanism for tracking development funding and increasing overall accountability.

Table 3: Overview of the published articles on CCs in Kenya

The first evaluation of a CC programme of GE was one of the, in 2010 introduced, Eco-Pesa CC (Ruddick, 2011). The Eco-Pesa is a CC backed by national currency, with 75 small local businesses as registered users. Through its registered users, the programme introduced community service work, price discounting and community events in three INSEs that are situated next to one another in Kongowea, Kenya. The aim of the Eco-Pesa programme was to facilitate and encourage environmental social service work and to economically empower the urban poor in impoverished INSEs through the innovative use of CCs. One of the results of the introduction of this programme was “that an estimated \$4,176 USD worth of trading was facilitated through the circulation of only \$352 USD worth of Eco-Pesa” (Ruddick, 2011, p.11). The Eco-Pesa furthermore caused a 22% average increase in the incomes of participating businesses, three youth-led community tree nurseries to be created and 20 tonnes of waste to be collected. Other benefits of the Eco-Pesa programme were that it was cost effective (over a period of seven months only \$4,698 USD was spent), it offered an enhanced system for increasing accountability and keeping track of development funding.

Another evaluation of a Kenyan CC programme was presented by Richards and Ruddick (2013). In this paper, the Bangla-Pesa CC, which was introduced in the Kenyan INSE Bangladesh, was examined. This CC enabled “female business owners to build resilience, avoid economic downturns and juggle family care and business profits.” (Richards & Ruddick, 2013, p. 1). The initial outcomes of the programme suggest that this programme holds potential to be a cost-effective tool for the sustainable reduction of poverty and for the improvement of the economic situation of vulnerable groups such as poor female business owners and household heads. The study furthermore highlights the need for an authoritative body to assist CC programmes.

The potential of the two CCs of GE (Eco-Pesa and Bangla-Pesa) to support the social and solidarity economy (SSE) is the subject of a paper by Ruddick and Mariani (2013) prepared for the International Conference on Potential and Limits of SSE, organised by ILO, UNRISD, NGLS and other partners. This paper provides compelling evidence that CCs promote the SSE and more specifically in the following ways: by increasing sales for business match SSE criteria

and local businesses; improving financial independence and management for owners of small businesses; encouraging community solidarity and the financing of local projects; and increasing resiliency towards economic shocks caused by the devaluation or scarcity of national currency. The authors emphasize CCs could become a crucial tool for end poverty through supporting the SSE and more precisely in the following way: "In areas such as informal settlements, which have tightly knit and chronically undercapitalized markets, complementary currency systems, like those in Kenya, can practically and efficiently benefit tens of thousands of people through creating networks of hundreds of small businesses." (Ruddick & Mariani, 2013, p. 11).

Bendell et al. (2015) provide a more theoretical analysis of the potential CCs hold for broadening the future of development finance. They explain the nature of money and finance with the aim of achieving a better engagement of policy makers and researchers with monetary innovations for sustainable development. Bendell et al. use the case of the Bangla-Pesa to demonstrate how re-imagining money can lead to positive development outcomes. They furthermore demonstrate that the Bangla-Pesa model is very cost-efficient and therefore holds the potential to innovate development finance. In this context, they also presented a new typology for understanding money: the Value-Sequence Typology. In this typology, the justification and procedure for issuing new units is used as a basis to categorize money. Although the authors provide a deeper understanding and contextualisation of the currency innovation of Grassroots Economics, a not solely descriptive comprehensive quantitative assessment of the sustainable development outcomes of the CCs of GE is missing.

A quantitative analysis of the impact of the CCs of GE in relation to trust and spending is given by Ruddick (2015). The paper examined only three of the six CCs currently circulating in Kenyan INSEs: Bangla-Pesa, Gatina-Pesa and Kangemi-Pesa. The author reports that 5%-10% of local food purchases are enabled through the use of the CCs of GE and that "the majority of the respondents that claim changes due to CC usage report that they see benefits in sales, customers, local trust, market stability and would desire to see CC usage increase" (Ruddick, 2015, p. 16). Next to these economic benefits, a positive correlation between the usage of CCs

and increasing levels of community trust is found. No comprehensive quantitative assessment is given here however. Ruddick furthermore detailed the CC systems, their process of implementation and how they are governed.

Dissaux (2016) extends upon this detailed description of the CC systems of GE, but only focuses on the Bangla-Pesa CC and on it being a common resource. He describes CCs as locally adapted and developed systems, which maximises their potential for being appropriated and they furthermore have a collective character and therefore hold the potential to be the root for the development of a cooperative economy. Dissaux pictures financial innovations, such as the M-Pesa, as counterparts of CCs at the other end of the currency innovation spectrum. The M-Pesa and other similar mobile money services are commercial services, which in most cases are offered by private telecom companies; and rely on fees for their use, therefore being a contradiction to the public good nature of money. The scholar argues however, that a common governance structure could secure that the interests of all parties are given the same attention, which would for example imply that the poor can take part in the process of implementation and governance of the financial services that will be used by them. In this context Dissaux advocates for the potential of CCs as localised monetary commons to be an effective tool for inclusive development. He moreover highlights that research should be given to the prerequisites for the sustainable management of these financial commons and how these CCs should be coupled with other currency innovations.

On the issues of sustainable management of these monetary commons and the need for the institutionalisation of these CCs as local monetary commons Dissaux and Ruddick (2017) respond by providing the results of this institutionalisation process and describing how the institutional challenges can be overcome by moving from the Bangla-Pesa model (a pure mutual credit system) towards the Sarafu-Credit model (an asset-backed system). The authors note: “In the Sarafu-Credit model, the CC has moved away from being the common itself. It has been moved to the cooperative businesses and their assets, while the CC is used to support those common resources and as a liquidity injection tool backed by those resources.” (Dissaux & Ruddick, 2017, p. 9). They provide a descriptive study of the underlying governing model of

the CC systems of GE, but an evaluation of the concrete impact of all the CC programmes of GE is also not provided by them.

In conclusion, when focussing more specific on community currencies as a development tool for INSEs, we find that apart from the contributions of Will Ruddick, the founder and CEO of Grassroots Economics Foundation, and of Tristan Dissaux, little research has been published on this topic. The studies by these authors are however unique contributions to the wider literature on community currencies, since they focus on the particular case of the application of community currencies for the economic empowerment of communities in INSEs. The empirical studies on this topic demonstrated increases in local trade, employment and social services (Richards & Ruddick, 2013; Ruddick, 2011, 2015; Ruddick et al., 2015). Research is given to how these currencies function, the economic and social benefits of them, the impact on poverty reduction and their potential to promote the Social and Solidarity Economy.

What needs to be added, however, is a quantitative holistic assessment of CCs as a tool for the sustainable improvement of livelihood conditions in INSEs. The Sustainable Livelihood Approach (SLA) holds potential to be a suitable guide for this assessment, since it is an approach for the holistic understanding of the livelihoods of the poor. It can be used to assess the contribution of existing activities to sustainable livelihoods and to provide effective policy solutions (DFID, 1999).

3.2 Discussion

My review of the literature leads me to the conclusion that in the literature regarding community currencies and INSEs in Kenya, there is a notable absence of a quantitative holistic assessment of the extent to which these programmes have improved the living conditions of its participants. Understanding this however is crucial in view of the urbanisation trends in Africa and related problematiques. Research is given to how these currencies function, the economic and social benefits of them, the impact on poverty reduction and their potential to promote the Social and Solidarity Economy.

4 Theory

4.1 Theoretical Framework

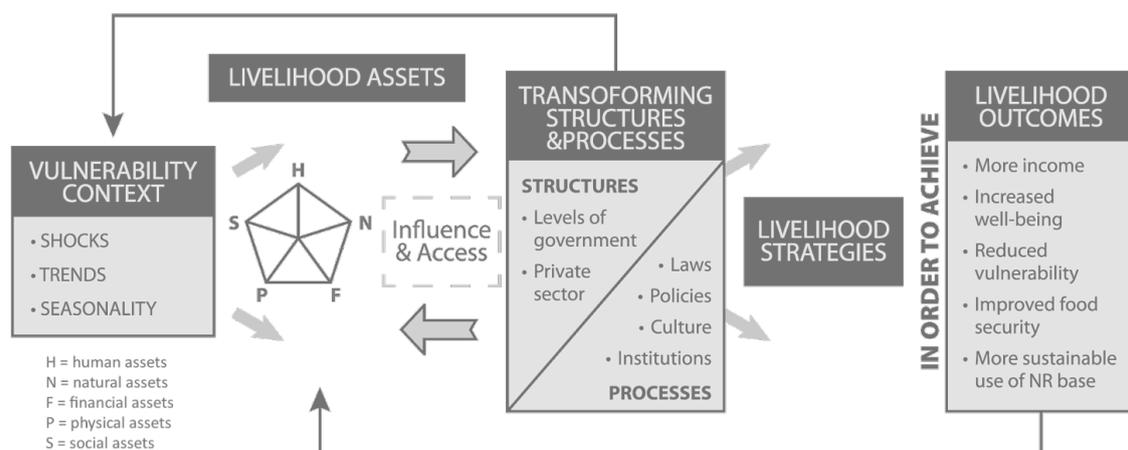
4.1.1 The Sustainable Livelihood Approach

With the aim of going beyond conventional approaches and definitions to the eradication of poverty the concept of Sustainable Livelihood (SL) was introduced. It is an attempt to broaden the view on poverty by considering other vital aspects of poverty such as social exclusion and vulnerability as well. It focusses on factors and processes which influence poor people's ability to live in ecologically, socially and economically sustainable manner. The concept offers a more comprehensive and holistic view of poverty (Krantz, 2001).

To represent the complexity of the term **livelihood**, various definitions have been formulated. A widely recognised definition is the one suggested by Chamber and Conway (1992, p.1): **“A livelihood comprises people, their capabilities and their means of living, including food, income and assets. Tangible assets are resources and stores, and intangible assets are claims and access. A livelihood is environmentally sustainable when it maintains or enhances the local and global assets on which livelihoods depend, and has net beneficial effects on other livelihoods. A livelihood is socially sustainable which can cope with and recover from stress and shocks, and provide for future generations.”**

The SL approach and concept has been put into operation by the Institute for Development Studies (IDS) and the British Department for International Development (DFID). Ian Scoones of IDS has suggested following definition of **Sustainable Livelihood** with the goal of providing a precise and consistent definition: **“A livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks, maintain or enhance its capabilities and assets, while not undermining the natural resource base.”** (Scoones, 1998, p.5). The various elaborations and uses of the SL concept have inspired development organisations to develop the Sustainable Livelihood Approach (SLA) to poverty (Krantz, 2001).

Krantz (2001, p.10) has described the three insights underpinning this approach to poverty. The limits of the focus the economic growth suffices to alleviate poverty, the recognition of the multidimensionality of poverty and the realisation that the poor need to be involved in the development of policy solutions that affect their lives. The UK Department for International Development (DFID) has developed the Sustainable Livelihoods Framework (SLF) building upon practical and academic work (DFID, 1999). This framework is a tool for analysing the multiplicity of facets affecting people’s livelihoods and the interaction amongst them.



*Figure 3: Sustainable Livelihood Framework
Source: DFID, 1999*

Livelihoods are viewed as systems by the SLF and it provides a means to understand the following: the assets upon which a person draws, the strategies one develops to make a living, the setting within which livelihoods are developed, and the elements that make livelihoods less or more vulnerable stresses and shocks (IRP & UNDP, 2010).

Livelihood assets may be tangible or intangible. Tangible assets include trees, livestock, land, tools, food stores, cash savings and other resources. Intangible assets are for example access to services such as education, information and health as well as claims one can make for work, assistance and food. Assets can also be understood as capitals one draws upon to make a

living (IRP & UNDP, 2010). The assets or capitals are categorized in the five capitals specified in table 4.

<i>Human capital:</i>	Skills, knowledge, health and ability to work
<i>Social capital:</i>	Social resources, including informal networks, membership of formalized groups and relationships of trust that facilitate cooperation and economic opportunities
<i>Natural capital:</i>	Natural resources such as land, soil, water, forests and fisheries
<i>Physical capital:</i>	Basic infrastructure, such as roads, water & sanitation, schools, ICT; and producer goods, including tools, livestock and equipment
<i>Financial capital:</i>	Financial resources including savings, credit, and income from employment, trade and remittances

Table 4: Livelihood Assets
Source: IRP & UNDP, 2010

One's livelihood opportunities and assets are influenced by external uncontrollable factors which are described by the vulnerability context. Generally, these factors are categorized as: shocks (e.g. natural disasters), trends (e.g. technology and resources) and seasonality (drop in employment opportunities, fluctuations in prices) (DFID, 1999). Livelihood strategies are formed by how people use the aforementioned assets within their vulnerability context. It is by improving the processes and structures that shape livelihoods and by expanding the access to a variety of capital assets, that the livelihoods can be sustainably improved according to DFID (1999).

The SLA has however also been criticized on the following points: for its inflexibility, referring to the strict adherence to the asset pentagon of the Sustainable Livelihood Framework (SLF) (McClean, 2015); there is a lack of guidelines for the classification of individual as 'poor';

informal structures and processes that within a community affect access are not given enough emphasis; the framework does not take into account the nature of the existing political structures and important power relations (ATHA, 2014); its inherent focus on livelihood, whilst human existence is broader and also entails other key aspects next to one's livelihood (Morse & McNamara, 2013); and local organisations may not have the resources to carry out the required research for the SLA (ATHA, 2014). Another critique can be formulated about the fact that cultural capital has not been integrated in the pentagon of livelihood assets (see figure 1) (Lin, 1999). This critique can however be countered with the fact that 'cultural processes' are integrated in the box of 'transforming structures and processes', which are indicated to interact with the five capitals in the pentagon (see figure 1).

Despite a decreasing amount of studies which explicitly mention the SLA, the implicit use of it has been and remains popular (Morse & McNamara, 2013). The SLA was primarily intended as a tool to guide intervention, but has been used in research in various ways. For example, as a basis for the creation of indicators (Bondad-Reantaso & Prein, 2009) and for guiding further research by applying the SLA as a post-sustainability research paradigm for research in Sub-Saharan African food systems (Høgh-Jensen, Egelyng, & Oelofse, 2009). However, the SLA has only been used as a tool for evaluating programmes in a small amount of studies (Hoeve & Koppen, 2005; Jansen, Pender, Damon, & Schipper, 2006; Mancini, Van Bruggen, & Jiggins, 2007).

Although the approach has some weaknesses, it marks a positive change from a traditional income-centric perspective of livelihood promotion to a holistic multi-faceted one (ATHA, 2014). It is this holistic nature that has been described as the model's main advantage and that made the SLA resonate with policy makers and others (Morse & McNamara, 2013). It is also one of the main reasons why it holds so much potential to be an adequate framework for the purpose of this study. Another main reason is that the SL framework integrates the vulnerability context, which is crucial for assessing the resiliency of the communities, the CCs are circulating in, to economic shocks and the seasonality of unemployment.

4.1.2 Sustainable Lifestyle Analysis

Morse & McNamara (2013) add two key points of criticism of the SLA to the points discussed in the previous section. They criticize that the SLA is a framework developed by the Global North for the Global South and they note that given the increasing scepticism about the emphasis on economic growth based on ever more consumption, the focus now shifts towards sustainable lifestyles. In order to overcome the previous two points, they argue for broadening the SLA framework into the Sustainable Lifestyle Analysis framework (SLifA), which includes lifestyle choices and expectations.

The SLA's breadth is argued to be its biggest strength, but also its biggest weakness, why would one than broaden the SLA further? While acknowledging the limitations of using a framework to analyse cause-effect relationships of a complex reality, it has to be noted that despite the mistakes that can be made when trying to understand this complex reality, using the most holistic framework for guiding the analysis is the most reasonable option. Morse & McNamara (2013) therefore argue that the SLA despite its breadth, still does not go far enough, especially in the context of sustainability. In this regard it is useful to mention Carney's (1998) definition of livelihood: "A livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living".

The essential part of this definition to be stressed is "means of living". In previous section the inherent focus of the SLA on livelihood, which is only a part of human existence, has already been criticised. Human life entails more than just "a means of living", it entails other key aspects such as aspirations, status, leisure time, cultural and personal values and so on which can influence livelihoods. Here, it is worth quoting the most widely used definition of sustainable development, which is the one of the World Commission on Environment and Development (WCED)(1987, p. 8): "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

The emphasis in previous definition of sustainable development lies on "needs", the "needs" of present generations and the "needs" of future generations. Note how much more

holistic this emphasis is, than just a “means of living”. Interestingly, Morse & McNamara (2013, p.167) note in this context: “People’s lives are not static no matter how poor; there is far more to life however poor one is than mere survival. People have dreams and expectations and seek ways as to how their livelihood can be enhanced to meet their aspirations.” The authors therefore argue that these aspirations should be an intrinsic part of every analysis of livelihood, since these help understand where people aspire to be. They stress that this sense of progress is indispensable. Encouraging the exploration of people’s aspirations and intervening to change lifestyle is where the focus should lie.

Some aspects of lifestyle might not support livelihood in a direct sense, such as for example cultural activities and leisure activities, but nonetheless deserve attention. Succinctly, people have both a lifestyle and a livelihood, the difference between them will become clear out of the following definitions of them. I follow Carney’s (1998) widely referenced **definition of livelihood: “A livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living”**. Building upon the work of Jansen et al (2006) and Morse and McNamara (2013), **I define livelihood strategies as the ways in which a person or group uses their assets to meet their productive and reproductive goals**. Based on the work of Morse and McNamara (2013), **I define lifestyles as the ways in which a person or group uses their assets to meet their aspirations**.

Both livelihood and livelihood strategies are encompassed, or better ‘surpassed’ by the concept of lifestyle. Lifestyle is broader than livelihood, since a livelihood is a “means by which people underpin their lifestyle” and lifestyle includes “the accumulations of goods that people may not need for ‘livelihood’ but which they perceive as enhancing their status in society—or in effect how others see them.” (Morse & McNamara, 2013, p. 167). Lifestyle surpasses ‘livelihood strategies’ (sustaining a means of living), due to its more holistic nature and the inclusion of a sense of progress: people seek to improve their livelihood in order to fulfil their aspirations, note how ‘aspirations’ goes beyond ‘productive and reproductive goals’ which would be one’s livelihood strategy.

Morse and McNamara (2013) note that having the lifestyle one desires can equally be regarded as prosperity, which is described in most definitions in a rather narrow way as prosperity in terms of income. The desired lifestyle involves more considerations than (solely) the accumulation of goods or money. The authors identified that the focus of the research agenda moves away from the analysis of livelihood and in the direction of “understanding and enhancing the sustainability of lifestyle” (Morse & McNamara, 2013, p. 167).

This can be situated in the growing awareness of our planetary boundaries and the growing questioning of consumption-driven economic growth. Livelihood is highly compatible with the latter, whilst lifestyle can go beyond a narrow focus on monetary income. Morse and McNamara therefore propose a new framework called the Sustainable Lifestyle Analysis (SLifA) framework (see figure 3), a modification of the SLA framework. Here current lifestyle, lifestyle expectations and realisations and interventions with the aim of changing lifestyles (if needed), are included.

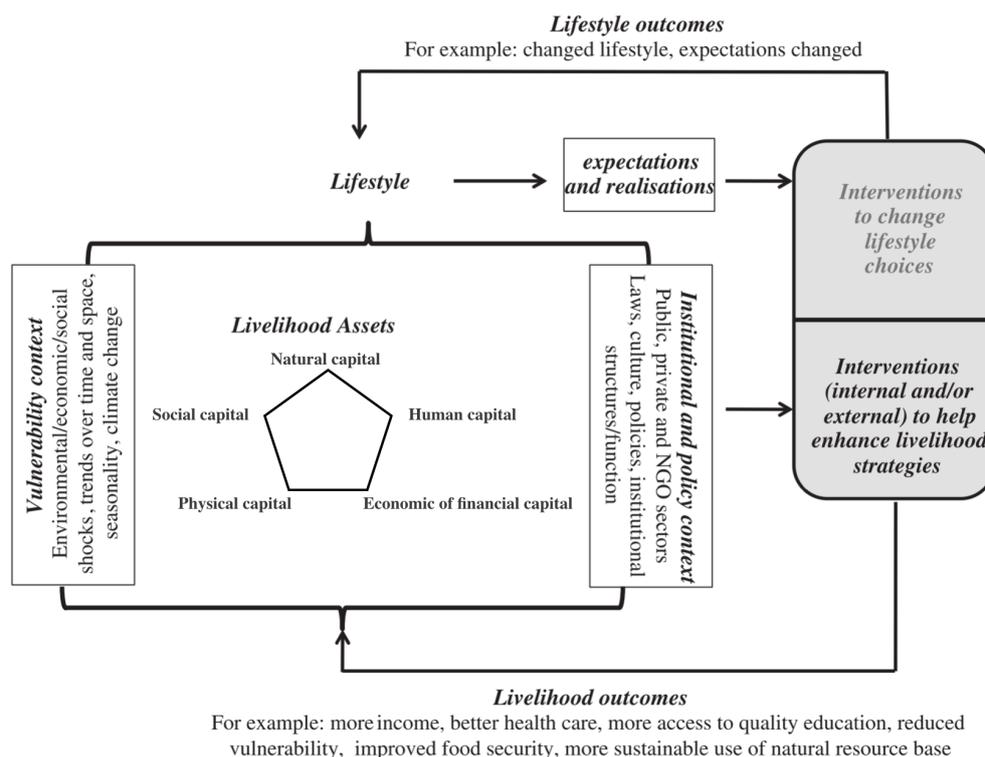


Figure 4: The Sustainable Lifestyle Analysis (SLifA) framework
Source: Morse & McNamara, 2013

This framework integrates a sense of where people would like to take their livelihood and how the lifestyle they wish to have is a driver of this. In this research, I will focus on lifestyle and base my analysis on the Sustainable Lifestyle Analysis (SLifA) framework, because of the following reasons. Firstly, the positive long-term economic impact is already evidenced by Ruddick (2015) and evidence of the positive livelihood outcomes –albeit not in the context of a sustainable livelihood analysis- have already been provided by Richards & Ruddick (2013), Ruddick (2011, 2015) and Ruddick, Richards and Bendell (2015). Secondly, the broader and more contemporary concept of lifestyles holds the potential to capture the impacts of the CC programs of GE more adequately than livelihood strategies, since these CC programs go beyond a focus on solely reaching productive and reproductive goals. The SLA framework for example does not adequately capture activities that are not necessarily productive or reproductive such as community activities. Thus, a framework based on lifestyle would allow for a more holistic analysis of the CC programs by Grassroots Economics. Thirdly, focussing on lifestyles could provide us with insights into how these CC programs differ from cash transfer programs.

The Sustainable Lifestyle Analysis (SLifA) framework evidently also has limitations. The framework adds more complexity compared to the ‘classic’ SLA, by including the lacking, but important domain of ethics. Allowing for more complexity is arguably not a negative point, but the contrary since it could help prevent simple solutions for complex problems. However, when used as the basis for an empirical model for quantitative analysis, no accompanying extensive qualitative analysis about the lifestyles could limit the depth of the analysis. With the qualitative aspect of the study of lifestyles, I more particularly mean the qualitative analysis needed to help understand the behavioural changes and changes in the way of thinking caused by an intervention. However once this is acknowledged, the SLifA is a set of guiding principles that seems highly adequate for gaining a thorough understanding of lifestyles through the quantitative analysis of the relevant survey data. The ethical concerns linked with the study of lifestyle and intervening in lifestyles could raise important issues, although this is rather a positive than a negative point, since it uncovers important questions to be discussed.

Lastly, according to my review of the literature the SLifA to date has not been applied in academic studies. These limitations however are very minor negative points, especially compared to the important benefits this framework holds for the purpose of this research.

4.2 How the CCs of GE Develop Flourishing Communities and Prospering Local Economies

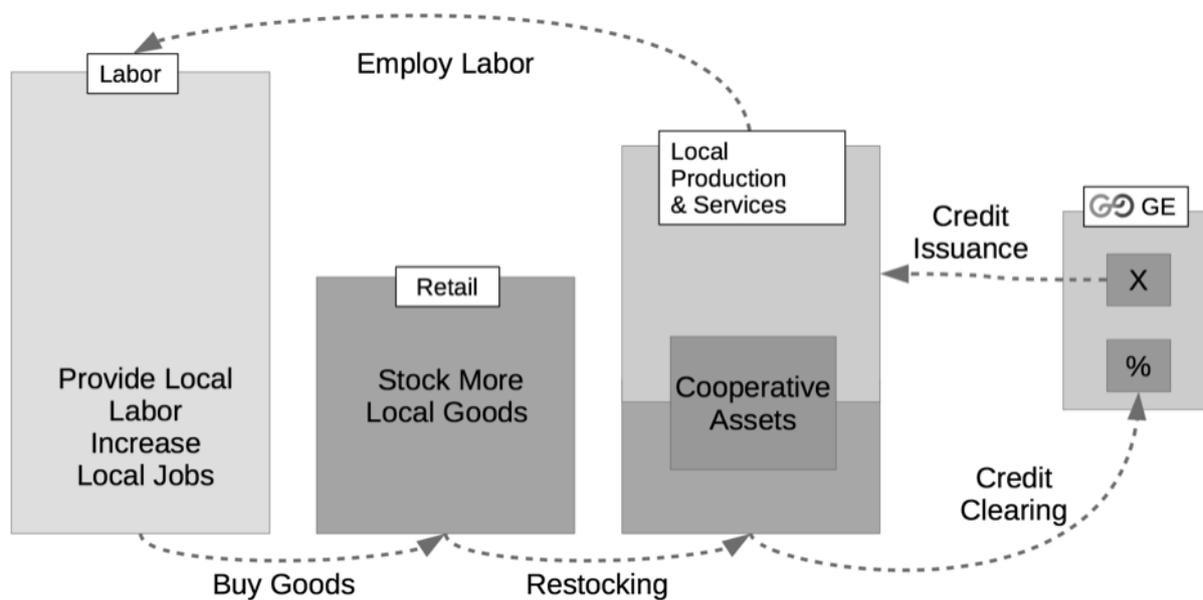


Figure 5: How the CCs of GE develop flourishing communities and prospering local economies
 Source: Grassroots Economics, 2017

Local production is generally at a low level in the communities GE targets. Generally, people are exporting most of their labour. GE wants to give a credit to local production and services based on their assets in order to start employing more local labour, which would again buy more local goods from retail and retail would be stocking credits, because they would be using local production. Another very important aspect of the work of Grassroots Economics is the community development cycle (see figure 4), where local business circulation feeds into community development. GE does a renewal of the memberships of the members each year, and part of that renewal is that local businesses are required to pay for the marketing and services they are getting by being part of the business network, by devoting some of their local currency to community development work, such as tree planting and trash collection. GE furthermore organises events such as networking events, tree planting, waste collection and big market days (W. Ruddick, personal communication, March 22, 2017b).

5 Data and Method

5.1 Introduction

This chapter starts with the presentation of the research questions and hypothesis. This is followed by a presentation of the data and their limitations. Then, the conceptual framework for analysis and the methods for determining the effect on lifestyle outcomes are explained and the limitations of the framework are discussed.

5.2 Research Question and Hypothesis

Based on the discussion of CCs versus CTs, the theory on sustainable lifestyles and the literature review on CCs & INSEs, the following research question is formulated to be answered in this thesis:

Research Question: *Do community currencies have an impact on lifestyle outcomes of local prosumers in informal settlements?*

Below a hypothesis is formulated based on the literature review. In Chapter 6, the following hypothesis will be tested in order to address the research question of this research:

H1: The use of CC is positively associated with helping the environment and gifting (altruistic behaviour).

5.3 Data

The data used for the purpose of this research is provided by Grassroots Economics Foundation, the non-profit social enterprise that developed the CCs under study. All data collected and research activities carried out by Grassroots Economics are approved by the Ethics Board of the University of Cape Town. The dataset consists of surveys collected in 2017 for the following five CC programmes: Bangla-Pesa and Ng'ombeni-Pesa (Mombasa County); Gatina-Pesa, Kangemi Pesa and Lindi Pesa (Nairobi County). The communities in which people were surveyed are: Kawangware, Kangemi, Kibera, Kilifi, Kwa-Ngombe, Bangladesh, Miyani, Takaungu, Bahakwenu, Pemba, Chumani, Pungu, Likoni, Mombasa, Chaani, Kibaoni Takaungu, Nyamalani and Uthiru.

The data were collected by trained surveyors using Android phones and Open Data Kit. Who joins the CC program are people with local employment or a local business. And for the control groups Grassroots Economics Foundation surveyed people with local employment or a local business. The surveyors went shop by shop through neighbourhoods, participating and non-participating local prosumers were thus randomly selected to be interviewed. The survey data is collected from 530 participants and 863 non-participants. Non-participants were interviewed in non-participating and in participating communities (see table 5). In participating communities, the surveyors made sure the control group was situated sufficiently far away from the treatment group.

Community	Are you using CC?	
	No (Percent)	Yes (Percent)
Kangemi	101 (11.70)	129 (24.34)
Kawangware	107 (12.40)	110 (20.75)
Bangladesh	1 (0.116)	101 (19.06)
Kwa-Ng'ombe		100 (18.87)
Kibera	48 (5.562)	88 (16.60)
Pungu	3 (0.348)	
Likoni	216 (25.03)	
Mombasa	2 (0.232)	
Chaani	200 (23.17)	
Miyani	84 (9.733)	
Takaungu	57 (6.605)	
Bahakwenu	42 (4.867)	
Other	2 (0.232)	2 (0.377)
Total	863 (61.95)	530 (38.05)

*Table 5: Community currency participation by community
Source: Own calculation using Stata*

The surveyors asked male and female local prosumers on their personal, business and family characteristics. From April until July 2017 the data was collected. Since the data is only from one point in time, it is cross-sectional. The questions of the interview were written in English and Swahili (Kenya) and the interview language varied depending on the respondent.

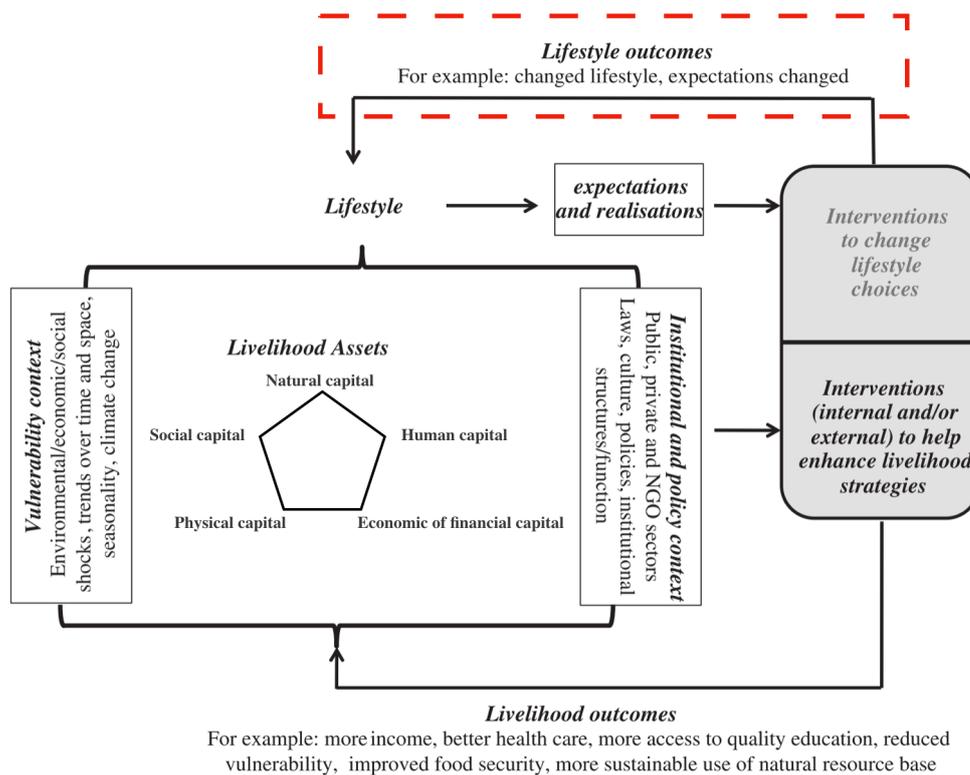


Figure 6: The Sustainable Lifestyle Analysis (SLiFA) framework with the outcome of interest highlighted with a red box
Source: Morse & McNamara, 2013

Based on the theory in Chapter 4, and the SLiFA framework in particular, I selected two dependent variables that represent lifestyles outcomes (see red box in figure 6). The first variable ‘helping the environment’ is a categorical variable that answers the following question: “Do your business or livelihood activities help the environment?”. This question has to be situated in the context of the environmental services which CC participants finance with a part of their CC amount and the events that are organised in the CC community such as tree planting and waste collection. The following answers were offered for the ‘helping the environment’ variable: (1) no, (2) sometimes and (3) yes. The second dependent variable ‘gifting in professional goods or services’ is an ordinal variable that answers the following question: “Over the last one month how much did you give in your business's goods or services to support people or groups without expecting compensation?” Answers to this question were offered on an eleven-unit ordinal scale: (1) None, (2) KSH 0 – KSH 50, (3) KSH 50 – KSH 100,

(4) KSH 100 – KSH 200, (5) KSH 200 – KSH 400, (6) KSH 400 – KSH 800, (7) KSH 800 – KSH 1000, (8) KSH 1000 – KSH 1500, (9) KSH 1500 – KSH 2000, (10) KSH 2000 – KSH 3000, and (11) More than KSH 3000.

A limitation of the dataset could be that the data were mostly based on recall data. Recall error might thus be present. De Nicola and Giné (2014, p. 63) found “that recall error in earnings increases with the recall period, in part because as the recall period increases respondents resort more and more to inference rather than memory”. Given the fact that the questions in the survey ask questions of a recall period of maximum one year and given the nature of the questions in the survey, it is unlikely that recall errors will be large. Another limitation could be that in many cases the surveyors were inconsistent in how they asked the questions. However, illogical or missing data was checked for every survey individually and in case there were inconsistencies interviewees were contacted again to resolve these. If after this for these data a resolution for the identified errors could not be found, they were coded as missing. Furthermore, because the interviewees are from different communities, community heterogeneity needs to be taken into account. Lastly, the data is observational. Participants self-select in the program. Treatment is thus observed, not assigned randomly. Applicants can receive the 400 CC starting credit if they are locally employed or have a local business and have the backing of a Community Based Organization (Chama).⁴

⁴ For the implementation phases see Appendix 1, for the application forms that applicants have to fill out see Appendix 3, and for the memorandum of confidentiality see Appendix 5

5.4 Method

Since the data used in this research is observational, with participants having self-selected into the program considering it as a random sample is not reasonable as Gelman and Hill explain (2007, p. 181): “In an observational study, there can be systematic differences between groups of units that receive different treatments—differences that are outside the control of the experimenter—and they can affect the outcome, y .” Simply relying on treatment and outcome data will not be enough, I will have to rely on more data in this situation and I therefore will have to make use of a more complex analysis strategy which relies upon stronger assumptions (Gelman & Hill, 2007).

Popular for estimating the impact of a treatment using observational data are propensity score methods. The definition of the propensity score is the following: “the probability of treatment assignment conditional on measured baseline covariates” (Austin & Stuart, 2015, p. 3662). The central property of a propensity score is: “conditional on the propensity score, treatment status is independent of measured baseline covariates” (Austin & Stuart, 2015, p. 3662). The propensity score is thus a balancing score, meaning participants and non-participants that have the same propensity score have observed baseline control variables with similar distributions. The statistics literature mentions four methods that make use of the propensity score: matching on the propensity score, stratification on the propensity score, inverse probability of treatment weighting (IPTW) and covariate adjustment using the propensity score (Austin & Stuart, 2015).

Since the two dependent variables of interest are categorical variables and most other variables in the dataset that are potential covariates are dummy or categorical variables, the propensity score will be predicted using a logistic regression model. The method used to correct for the selection bias is the inverse probability of treatment weighting (IPTW) method. Based on Austin & Stuart (2015) and He, Hu, & He (2016) the IPTW method is described as follows. If Z denotes assignment to the treatment, thus whether or not the person is a CC participant ($Z = 1$ denoting CC participant; $Z=0$ denoting CC non-participant), and X denotes a vector of

observed baseline control variables, then the propensity score can be defined as $e = P(Z = 1|X)$; which is the probability of a person receiving CC conditional on their observed baseline control variables. The inverse probability of being a CC participant can then be defined as $\frac{Z}{e} + \frac{1-Z}{1-e}$. The weight of each subject “is equal to the inverse of the probability of receiving the treatment that the subject received” (Austin & Stuart, 2015, p. 3663). The average treatment effect is then estimated by applying these weights in an ordered logistic regression model, after having checked the four propensity score assumptions being: positivity, consistency, no misspecification of the propensity score model and exchangeability.

A limitation of this method is that it requires an extensive dataset, but this is the case in this study. The method furthermore depends on the degree to which observed characteristics drive participation into the program. It also assumes that there are no unobserved differences between the treated and control group that could explain participation into the program (conditional independence assumption). It is however not possible to test this assumption (Gertler, Martinez, Premand, Rawlings, & Vermeersch, 2016).

6 Results and Analysis

This chapter starts with the selection of the variables for the propensity score model. In subsequent section the four assumptions of the propensity score method are discussed. This is followed by a section where I present the results of the analysis for each of the two outcome variables and discuss whether the hypothesis is rejected or not.

6.1 Variable Selection for the Propensity Score Model

For the variable selection for the propensity score model I made sure observed background characteristics were selected that best determine program participation, to avoid a biased estimate (Gertler et al., 2016). I made this selection based on the context in which the program was introduced. Khandker, B. Koolwal and Samad (2009) highlight the importance of having a good understanding of the context of program participation; the better this understanding, the better we can construct a matched comparison group. They furthermore mention following three provisions for good matching and avoiding biased estimates: “using the same data source” and having “a representative sample survey of eligible nonparticipants as well as participants”. They also note that “the larger the sample of eligible nonparticipants is, the more good matching will be facilitated” (Khandker, B. Koolwal, & Samad, 2009, p. 58). The data in this research comes from the same data source, is a representative sample and has significantly more non-participants than participants. The authors also mention the following: “A related point is that participants and nonparticipants should be facing the same economic incentives that might drive choices such as program participation ((...) such incentives might include access to similar markets, for example). One could account for this factor by choosing participants and nonparticipants from the same geographic area.” (Khandker, B. Koolwal, & Samad, 2009, p. 59). In my case nonparticipants and participants come from the same or a similar neighbouring community, so the same geographic area and they have access to similar markets. The data in this study thus forms a good basis for matching.

Austin & Stuart (2015) suggest that next to the inclusion of covariates that influence selection, it is also important to include covariates that have an effect on the outcome. However,

the inclusion of too many covariates should be avoided as Khandker, B. Koolwal, & Samad (2009, p. 59) point out: “overspecification of the model can result in higher standard errors for the estimated propensity score $P^{\hat{}}(X)$ and may also result in perfectly predicting participation for many households ($P^{\hat{}}(X) = 1$).” Based upon these considerations I have selected the set of appropriate covariates for the propensity score model. Table 6 provides an overview of this set of covariates and the treatment dummy ‘Community currency participant’.

	N	Mean	SD	Min	Max
<i>Treatment Variable</i>					
Community currency participant	1,393	0.380	0.486	0	1
<i>Control Variables</i>					
Years in area	1,393	11.94	10.77	0	98
Level of schooling	1,393	3.668	0.922	1	6
Municipality support	1,393	1.191	0.393	1	2
Own business premise	1,393	1.863	0.897	1	3
Bank account holder	1,393	1.650	0.477	1	2
Age	1,393	32.99	9.578	18	72
Gender	1,393	1.550	0.498	1	2

Table 6: Treatment and control variables for propensity score model
Source: Own calculation using Stata

CC is given to everyone with a local business or that is employed locally and who is backed by a Chama. A Chama is the community committee that reviews the application of a potential new member and decides whether or not the person can participate in the program. The program assignment rule is thus very broad. I therefore looked at variables that explain differences in self-selection into the program. The years someone lived in the area could explain why this person self-selected into the program and could also have an effect on the outcome of helping the environment and professional gifting. Someone who already has his business for a long time in the area is more likely to know the local business network well and therefore has

incentives to join the local CC business network. It could also influence how much the person is willing to gift in professional goods or services to people in the community.

The person's level of schooling is selected, because one's level of schooling in this context can play a role in the choice of applying for the CC program. The concept of CC has to be understood and the CC user guide (see Appendix 4) has to be read, which both can be difficult given the amount of complexity for someone without having had schooling. One's level of schooling could also influence the outcome of helping the environment and gifting the community, since people with higher education levels potentially are more aware of the global social and environmental challenges we face.

Another important covariate is 'Municipality support'. Whether the person receives any other support, such as a subsidy, could explain differences in participation as well. It is furthermore a variable that needs to be controlled for when estimating the impact of the two lifestyle outcomes, since I want to know whether CCs go beyond traditional forms of aid.

Whether someone owns his business premise or not is a background characteristic that gives an indication of the financial situation and stability of the local prosumer. Given one of the main aims of the CC program is to provide credit to people that lack it and it is a tool targeted to low-income communities, it can be expected that less well-of local prosumers self-select into the program. If one has the financial stability of having his own business, one could also be expected to be in a situation where one has the resources and time to take part in activities that help the environment and gift in professional services or goods (W. Ruddick, personal communication, March 22, 2017).

The CC of GE is a new financial service: one for low-income communities that builds capacity and develops credit ratings prior to being in formal banking and develops local economies in general. Whether the person holds a bank account or not is thus an important background characteristic for explaining differences in participation. If you own a bank account or not can also be expected to have an effect on gifting or being in a situation where time and resources can be devoted to environmental activities (W. Ruddick, personal communication, March 22, 2017).

The age of the local prosumer could explain differences in self-selection as well. Age potentially also has an effect on giving and environmental help. Since generational differences could influence lifestyle outcome such as the one in this study.

Richards and Ruddick (2013) note that in the areas in which GE operates most “small businesses are owned and operated by women” and that although women “represent the majority of the workforce, business ownership and unpaid labour, these women earn less income than their male counterparts”. Gender is therefore another important characteristic for the explanation of differences in program participation. Richards and Ruddick (2013) furthermore mention that “while women make up the bulk of the businesses and labour, male business owners earn more profit from their enterprises” in these areas. This highlights that the gender variable could also affect gifting in professional good or services and helping the environment.

Table 7 shows the propensity score model. This logistic regression confirms what is previously discussed about the included covariates. On average, you are more likely to participate in CC program if you received municipality, if you are female, the older you are and if you had schooling, *ceteris paribus*. On average, you are less likely to participate if you hold a bank account and if you own your business premise, *ceteris paribus*. Strangely, on average you are slightly less likely to participate the longer you live in the area, when keeping everything else constant. The effect of ‘municipality support’, ‘bank account holder’, ‘age’ and ‘years in area’ are statistically significant at the 1% significance level. The categories ‘primary educ.’, ‘secondary educ.’ and ‘diploma’ of the ‘level of schooling’ variable are also statistically significant at the 1% level. The category ‘National Technical Certificate’ of the schooling variable is statistically significant at the 5% significance level and the ‘tertiary educ.’ category of this variable is statistically insignificant. Gender and the ‘Yes’ category of the ‘own business premise’ variable are statistically significant at the 10% significance level. The ‘Not applicable’ category of the ‘own business premise’ variable is statistically insignificant.

Community currency participant	Propensity Score Model
Municipality support	
Yes	0.954*** (2.83e-10)
Bank account holder	
Yes	-0.487*** (0.000308)
Own business premise	
Not applicable	-0.0941 (0.576)
Own business premise	
Yes	-0.245* (0.0691)
Gender	
Female	0.213* (0.0730)
Age	0.0383*** (7.00e-08)
Years in area	-0.0222*** (0.000678)
Level of schooling	
Nat. Tech. Certificate	1.283** (0.0199)
Primary educ.	1.030*** (0.00397)
Secondary educ.	1.412*** (6.47e-05)
Diploma	1.495*** (0.000151)
Tertiary educ.	0.524 (0.469)
Constant	-2.641*** (1.89e-09)
Observations	1,393
Pseudo R-squared	0.0585
Observations	1393

Robust pval in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 7: Propensity score model (logistic regression)
Source: Own calculation using Stata

6.2 Balancing Property

Austin and Stuart (2015, p. 3665) note: “Having identified the appropriate set of variables, the objective of IPTW using the propensity score is to create a weighted sample in which the distribution of these covariates is the same between treated and control subjects.” Although one can obtain an unbiased estimate of the average treatment effect with IPTW using the propensity score, these estimates are solely valid “if there are no residual systematic differences in observed baseline characteristics between treated and control subjects in the sample weighted by the estimated inverse probability of treatment” (Austin & Stuart, 2015, p. 3665). Austin and Stuart found the balancing property is often not examined in studies that use IPTW. They therefore propose several balancing diagnostics. I will assess balance by applying one of the diagnostics proposed by the authors: by comparing the means of the control variables between participants and non-participants in the weighted sample.

Table 8 shows the comparison of the proportions and means of the control variables for the control and treatment subjects in a sample that was weighted by the inverse probability of treatment. The proportions and means are well-balanced and I thus consider the balancing property as satisfied.

	Municipality support		Bank account		Own business premise		Gender		Age		Years in area		Level of schooling			
	Control (Proportion)	Treatment (Proportion)	Control (Proportion)	Treatment (Proportion)	Control (Proportion)	Treatment (Proportion)	Control (Proportion)	Treatment (Proportion)	Control (Mean)	Treatment (Mean)	Control (Mean)	Treatment (Mean)	Control (Proportion)	Treatment (Proportion)		
No	0.815	0.814	0.351	0.346	No	0.471	0.472	0.457	0.464	32.75	32.51	11.79	11.57	No school NTC	0.0525	0.0594
Yes	0.185	0.186	0.649	0.654	Not Applicable	0.183	0.189	0.543	0.536					(National Technical Certificate)	0.0184	0.0182
					Yes	0.346	0.339							Grade School (Primary)	0.269	0.257
														Secondary School	0.542	0.540
														Diploma Bachelors	0.106	0.109
														or Tertiary Degree	0.0126	0.0160
N	863	530	863	530	863	530	863	530	863	530	863	530	863	530	863	530

Table 8: Comparison of means and proportions of baseline control variables between control and treated subjects in the weighted sample
Source: Own calculation using Stata.

6.3 Results

I assess the effect of community currency participation on helping the environment and gifting in professional goods or services. By using the inverse probability of treatment weights in an ordered logistic, I will assess the effect on both lifestyle outcomes. In this section, I present the statistical results of my calculations for both lifestyle outcomes. In Chapter 7 I discuss the results further, their limitations and their research and policy implications.

6.4.1 Lifestyle Outcome One: Helping the Environment

Table 9 presents the results of ordered logistic model 1A and 1B for the effect of community currency participation on helping the environment. In these ordered logistic models, I used the inverse probability of treatment weights for the estimation of the program effects. The same covariates as in the propensity score model are included in model 1A and 1B. The covariates that explain selection are very likely to have impacts on outcome as well. That is why people may self-select themselves into the treatment. However, in model 1A and 1B I added extra control variables that explain the outcome. These variables help explain outcome, but are unlikely to have had an effect on selection, since my lifestyle outcome variable is rather general and people may not “choose” to participate because they had the outcome of helping the environment in mind.

These extra covariates are the ‘Impact on the community’ variable and ‘Amount of local stock or production inputs purchases’. Whether one sees himself as having a big impact on making the community a better place to live could explain why one participates more in the environmental activities organised by the community and whether one is concerned about having a business that has a positive impact on the environment in general. The amount of local stock or production input purchases represent whether one buys a lot locally or not. Since Grassroots Economics, as part of developing sustainable local communities, promotes local production and consumption, the amount of local stock or production input services is likely to help explain whether one considers himself to be less or more likely to help the environment with his activities.

The difference between model 1A and 1B is that in model 1A the community variable is represented as dummy variables for each community and the treatment variable is not included. I do this to verify if community heterogeneity influences the results. In model 1A I omitted the Chaani community. This community has 200 control subjects, therefore being the community with the largest amount of control subjects.

Helping the environment	Model 1A		Model 1B	
	Community dummies		Categorical	Community var.
Community	β	SE	β	SE
Kawangware	0.847***	(0.286)		
Kangemi	1.215***	(0.246)	0.683**	(0.270)
Kibera	0.952***	(0.284)	0.169	(0.301)
Kwa Ng'ombe	1.007***	(0.261)	-1.088***	(0.372)
Bangladesh	-0.181	(0.241)	-2.682***	(0.359)
Miyani	3.064***	(0.677)	5.264***	(0.710)
Takaungu	17.07***	(0.301)	19.63***	(0.344)
Bahakwenu	-2.137***	(0.442)	-0.439	(0.481)
Pungu	-0.435	(1.203)	0.605	(1.597)
Likoni	0.700***	(0.253)	2.999***	(0.344)
Mombasa	17.86***	(1.062)	19.81***	(0.846)
Chaani			1.956***	(0.321)
Other	1.645	(1.075)	0.747	(1.681)
Municipality Support				
Yes	-0.366**	(0.172)	-0.509**	(0.208)
Bank account holder				
Yes	-0.146	(0.168)	0.0584	(0.182)
Own business premise				
Not applicable	-0.304	(0.191)	-0.321	(0.201)
Yes	0.229	(0.163)	0.420**	(0.189)
Gender				
Female	0.139	(0.128)	0.112	(0.142)
Age	0.00962	(0.00849)	0.00772	(0.0103)
Years in area	0.0220*	(0.0113)	0.0248**	(0.0123)
Level of schooling				
(‘No schooling’ omitted)				
Nat. Tech. Certificate	-0.608	(0.627)	-1.131*	(0.635)
Primary educ.	-1.400***	(0.492)	-1.269**	(0.524)
Secondary educ.	-1.120**	(0.486)	-0.934*	(0.522)
Diploma	-1.147**	(0.502)	-1.347**	(0.544)
Tertiary educ.	0.273	(0.862)	0.375	(1.021)
Impact on the community				
(‘Not impact’ omitted)				
A small impact	0.438	(0.480)	0.157	(0.498)
A big impact	1.686***	(0.488)	1.097**	(0.515)
Amount of local stock or production inputs purchases				
(‘Not applicable’ omitted)				
KSH0 - KSH500	0.711***	(0.229)	0.569**	(0.257)
KSH500 - KSH1,000	0.150	(0.230)	-0.228	(0.267)
KSH1,000 - KSH2,000	0.0424	(0.251)	0.266	(0.265)

KSH2,000 – KSH3,000	-0.338	(0.248)	-0.0668	(0.231)
KSH3,000 – KSH5,000	-0.623**	(0.266)	-0.0197	(0.284)
KSH5,000 – KSH10,000	-0.539**	(0.255)	0.241	(0.325)
KSH10,000 – KSH20,000	-1.347***	(0.437)	-0.321	(0.418)
KSH20,000 – KSH40,000	-1.748**	(0.723)	-0.196	(0.763)
KSH40,000 – KSH80,000	-1.532***	(0.383)	0.728	(0.499)
KSH80,000 – KSH100,000	15.81***	(0.658)	18.07***	(1.042)
Community currency participant				
Yes			4.264***	(0.298)
Constant cut1	-1.895***	(0.732)	-0.436	(0.791)
Constant cut2	1.157	(0.734)	3.328***	(0.814)
Observations		1,393		1,393

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 9: Ordered logit models for effect of community currency participation on helping the environment
Source: Own calculation using Stata

In model 1A, Kawangware, Kangemi, Kibera and Kwa-Ng’ombe have a positive and highly statistically significant effect on helping the environment; the effects being statistically significant at the 1% significance level. Together with the Bangladesh community, these are the communities with community currency participants. Bangladesh however is not statistically significant. In model 1B, the effect of community currency participation on helping the environment is positive and statistically significant at the 1% significant, thus highly significant. The Kangemi community has a positive and statistically significant coefficient at the 5% significance level. The coefficient of Kibera is insignificant. Kwa-Ng’ombe and Bangladesh have negative and highly statistically significant coefficients, significant at the 1% significance level. Since the omitted Kawangware community together with the Kangemi community are the communities with the most CC participants, they seem to absorb the positive effect on helping the environment. Based on the discussion of the communities in model 1A and 1B the positive effect on helping the environment seems to hold for all the CC communities.

Does your business or livelihood activities help the environment?	No Predicted prob.	Sometimes Predicted prob.	Yes Predicted prob.
Community currency participant	-0.281***	-0.245***	0.527***

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 10: Marginal effects of community currency participation on helping the environment

Source: Own calculation using Stata

In table 10 the results of the estimation of the marginal effects of community participation on helping the environment are presented. All the marginal effects are statistically significant at the 1% significance level. Being a community currency participant is associated with being 28% less likely to have business or livelihood activities that don't help the environment, 25% less likely to have business or livelihood activities that sometimes help the environment, and 53% more likely to have business or livelihood activities that help the environment. The first lifestyle outcome of CC participation that is tested in this analysis is thus positive and highly statistically significant.

6.4.2 Lifestyle Outcome Two: Gifting in Professional Goods or Services

The results of ordered logistic model 2A and 2B for the effect of community currency participation on gifting in professional goods or services are provided in table 11. Like in the models for estimating the impact on helping the environment, in these ordered logistic models I used the inverse probability of treatment weights for the estimation of the program effects. Like in model 1A and 1B, the same covariates as in the propensity score model are included in model 2A and 2B. The motivations for including these variables in model 1A and 1B, apply for model 2A and 2B as well. In the latter extra covariates are also added based on the same reasoning as for model 1A and 1B.

The extra covariates included in model 2A and 2B are 'Financial situation', 'Forced to consult others for decisions', 'Total outstanding debt', 'Community willingness to help', 'Trust in others of community' and 'Impact on the community'. The financial situation of the subject and his total outstanding debt play an important role in explaining the amount of giving to others for obvious reasons. If one is forced to consult others for decision, one could be more likely to also to do more gifting in professional goods or services to others. Trust in the community and the willingness of other members of the community to help you when needed, could also explain gifting to other members of the community. Whether one sees himself as having a big impact on making the community a better place to live could explain why someone does more gifting in professional goods or services to other members of the community.

The difference between model 2A and 2B is that in model 2A the community variable is represented as dummy variables for each community and the treatment variable is not included. Like for model 1A and 1B, I do this for model 2A and 2B to verify if community heterogeneity influences the results. Like in model 1A, I omitted the Chaani community in model 2A.

Gifting in professional goods or services	Model 2A		Model 2B	
	β	SE	Categorical β	Community var. SE
Community				
Kawangware	-2.347***	(0.356)		
Kangemi	-1.232***	(0.313)	1.063***	(0.317)
Kibera	-1.518***	(0.355)	0.683*	(0.352)
Kwa Ng'ombe	-1.496***	(0.294)	0.413	(0.460)
Bangladesh	-2.667***	(0.480)	-0.807	(0.605)
Miyani	-0.962**	(0.445)	1.850***	(0.505)
Takaungu	-0.173	(0.573)	2.895***	(0.580)
Bahakwenu	-3.433***	(0.965)	-0.563	(0.959)
Pungu	-3.037	(2.524)	-0.162	(2.532)
Likoni	-2.641***	(0.432)	0.257	(0.443)
Mombasa	-0.0761	(0.804)	2.910***	(0.812)
Chaani			2.781***	(0.349)
Other	0.0658	(1.284)	2.418*	(1.374)
Municipality Support				
Yes	-0.167	(0.192)	-0.186	(0.193)
Bank account holder				
Yes	-0.109	(0.180)	-0.0870	(0.180)
Own business premise				
Not applicable	-0.332*	(0.200)	-0.310	(0.204)
Yes	0.139	(0.237)	0.239	(0.249)
Gender				
Female	-0.0244	(0.137)	-0.0475	(0.140)
Age	-0.0112	(0.00919)	-0.00997	(0.00924)
Years in area	0.0239***	(0.00919)	0.0239***	(0.00911)
Level of schooling (‘No schooling’ omitted)				
Nat. Tech. Certificate	0.172	(0.647)	0.0727	(0.654)
Primary educ.	-0.432	(0.381)	-0.413	(0.384)
Secondary educ.	-0.972***	(0.373)	-0.954**	(0.379)
Diploma	-0.0686	(0.412)	-0.0990	(0.417)
Tertiary educ.	-0.344	(1.167)	-0.304	(1.232)
Financial situation (‘Very underprivileged’ omitted)				
Underprivileged	0.199	(0.396)	0.355	(0.391)
Below average	-0.207	(0.368)	-0.0969	(0.360)
Average	-0.838**	(0.401)	-0.659*	(0.400)
Above average	-1.025**	(0.448)	-0.843*	(0.447)
Rich	-0.274	(0.726)	-0.0843	(0.706)
Forced to consult others for decisions (‘Never’ omitted)				
Almost never	1.775***	(0.454)	1.982***	(0.495)
Sometimes	2.109***	(0.440)	2.278***	(0.481)
Quite often	1.120**	(0.485)	1.312**	(0.520)
Always	1.642***	(0.521)	1.762***	(0.552)
Total outstanding debt				
KSH0 - KSH500	-0.138	(0.406)	-0.170	(0.426)
KSH500 - KSH1,000	0.691**	(0.287)	0.653**	(0.295)
KSH1,000 - KSH2,000	0.613*	(0.318)	0.424	(0.339)
KSH2,000 - KSH3,000	0.831*	(0.482)	0.668	(0.476)
KSH3,000 - KSH5,000	0.884*	(0.512)	0.750	(0.549)
KSH5,000 - KSH10,000	1.114**	(0.459)	0.957**	(0.457)
KSH10,000 - KSH20,000	1.129**	(0.573)	0.982*	(0.576)

KSH20,000 – KSH40,000	0.851	(0.750)	0.781	(0.750)
KSH40,000 – KSH60,000	2.115	(1.469)	1.959	(1.434)
KSH60,000 – KSH80,000	-1.255	(0.892)	-1.434*	(0.860)
KSH80,000 – KSH100,000	1.277*	(0.711)	1.124	(0.784)
more than KSH100,000	-0.280	(0.945)	-0.426	(0.893)
Community willingness to help				
Sometimes	-0.152	(0.209)	-0.189	(0.212)
Yes	0.265	(0.306)	0.226	(0.313)
Trust in others of community (‘No’ omitted)				
Sometimes	-0.279	(0.258)	-0.256	(0.263)
Yes	-0.0583	(0.293)	-0.0164	(0.298)
Impact on the community (‘Not impact’ omitted)				
A small impact	0.338	(0.383)	0.278	(0.370)
A big impact	0.830**	(0.401)	0.628	(0.394)
Community currency participant				
Yes			0.890***	(0.285)
Constant cut1	0.0569	(0.935)	3.136***	(0.960)
Constant cut2	0.595	(0.937)	3.679***	(0.965)
Constant cut3	1.604*	(0.928)	4.698***	(0.963)
Constant cut4	2.305**	(0.929)	5.406***	(0.969)
Constant cut5	2.898***	(0.912)	6.004***	(0.956)
Constant cut6	3.371***	(0.911)	6.479***	(0.960)
Constant cut7	3.834***	(0.924)	6.944***	(0.969)
Constant cut8	4.256***	(0.932)	7.368***	(0.978)
Constant cut9	4.839***	(0.959)	7.953***	(0.995)
Constant cut10	5.429***	(1.005)	8.545***	(1.039)
Observations	1,393		1,393	

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 11: Ordered logit models for effect of community currency participation on gifting in professional goods or services
Source: Own calculation using Stata

Model 2B suggests the positive effects on gifting are absorbed by the communities the biggest amount of CC participants: Kawangare and Kangemi. Kawangware is the omitted category. Kangemi has a positive impact at the 1% significance level. Kibera also has a positive impact, but at the 10% significance level. Based on the discussion of the communities, the positive effect on gifting in professional goods and services seems to hold for all the CC communities.

	None	KSH0 - KSH50	KSH50 - KSH100	KSH100 - KSH200	KSH200 - KSH400	KSH400 - KSH800	KSH800 - KSH1,000	KSH1,000 - KSH1,500	KSH1,500 - KSH2,000	KSH2,000 - KSH3,000	More than KSH3,000
Gifting in professional goods or services	Predicted prob.	Predicted prob.	Predicted prob.	Predicted prob.	Predicted prob.						
Community currency participant	-0.133***	0.015***	0.038***	0.026***	0.018***	0.011**	0.008**	0.005**	0.005*	0.003*	0.004*

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 12: Marginal effects of CC participation on gifting in professional goods or services
Source: Own calculation using Stata.

In table 12 the results of the estimation of the marginal effects of community participation on gifting in professional goods or services are presented. All the marginal effects are statistically significant. No gifting and gifting between KSH0 – KSH50, KSH50 - KSH100, KSH100 – KSH200 and KSH200 – KSH400 are statistically significant at the 1% significance level. Gifting between KSH400 – KSH800, KSH800 – KSH1,000 and KSH1,000 – KSH1,500 are statistically significant at the 5% significance level. Gifting between KSH1,500 – KSH2,000 and KSH2,000 – KSH3,000 and more than KSH3,000 are statistically significant at the 10% significance level. Being a community currency participant is associated with being 13% less likely to do no gifting in professional goods or services, 2% more likely to gift between KSH0 – KSH50, 4% more likely to gift between KSH50 – KSH100, 3% more likely to gift between KSH100 – KSH200, 2% more likely to gift between KSH200 – KSH400, 1% more likely to gift between KSH400 – KSH800, 1% more likely to gift between KSH800 – KSH1000, 1% more likely to gift between KSH1000 – KSH1500, 1% more likely to gift between KSH1500 – KSH2000, 0.3% more likely to gift between KSH2000 – KSH3000, and 0.4% more likely to gift more than KSH3000. Being a community currency participant is thus associated with being less likely to do no gifting and slightly more likely to do gifts of a low, medium and high amount. The second lifestyle outcome of CC participation that is tested in this analysis is thus positive and statistically significant.

7 Conclusion

7.1 Discussion of Results

The findings for both lifestyle outcomes are positive and statistically significant. Being a community currency participant is associated with being 28% less likely to have business or livelihood activities that don't help the environment, 25% less likely to have business or livelihood activities that sometimes help the environment, and 53% more likely to have business or livelihood activities that help the environment. The first lifestyle outcome of CC participation that is tested in this analysis is thus positive and highly statistically significant.

Being a community currency participant is furthermore associated with being 13% less likely to do no gifting and slightly more likely to do gifts of a low, medium and high amount. Although the probabilities are rather low for each level of gifting, this outcome can also be considered as a positive and statistically significant lifestyle outcome.

Both the first and second lifestyle outcome are thus positive and statistically significant. Both findings support the tested hypothesis that the use of CC is positively associated with helping the environment and gifting (altruistic behaviour). This evidence supports that community currencies as a tool for the sustainable development of informal settlements goes beyond traditional development programs and their focus on productive and reproductive outcomes. This research thus contributes to the academic literature in the following ways.

Firstly, this research answers to the need of quantitative evidence of the impact of community currencies. Secondly, the quantitative evidence on community currencies and informal settlements only provided quantitative evidence on some economic and social livelihood outcomes, there has not been a quantitative study assessing the impact of these CCs from a lifestyle perspective, which is a more holistic perspective on development. Thirdly, to date this research is the first to base its analysis on the Sustainable Lifestyle Analysis (SLifA) framework. Fourthly, the evidence of this research shows how CC can go beyond the outcomes of CT programs. The qualitative part of this research furthermore demonstrates how these community currencies differ from cash transfer programs and other traditional development programs.

Whilst long-term development with community currencies is based on cooperative assets (e.g. maize mills, wholesale shops, coconut oil etc.), long-term development in the case of cash transfers seems to be questionable because of its dependency on donor funds. For example, if people want to make the most out of cash given to them, they need to be able to purchase affordable and high-quality services and products such as quality education, food, healthcare... (Starr & Hattendorf, 2014). The provision of these basic services however is what is typically lacking in informal settlements. As Starr & Hattendorf (2014) put it: “the poor do not spend the cash on stupid things; they just may not have access to great things”. This underpins one of the reasons why CC programs hold potential to have a more structural impact in these communities than CT programs. Furthermore, it needs to be noted that in some cases cash transfers will not work. For example, when a lack of credit is not the problem of a poor business owner, but he faces other constraints, providing credit alone is unlikely to help him (Christopher Blattman et al., 2013). The CC programs of GE however are targeted towards the specific issues in INSEs, such as lack of basic services, high (youth) unemployment and economic instability. CCs thus hold the potential to meet the objectives of both cooperative and conventional development paradigms.

7.2 Limitations and Future Research

It is important to note the limitations of this study and possible suggestions for further research. Being the first quantitative assessment based on the Sustainable Lifestyle Analysis framework, I acknowledge the need for more studies that base their analysis on the SLifA. Further in-depth analysis of the different lifestyles in the CC communities could further explain differences between CCs and CTs. Studying how these currencies can be scaled up is what future research also should address. Assessing the long-term impact of CC with longitudinal data is also an aspect future research should address to support the evidence on CCs as a tool for sustainable development of INSEs. Lastly, because these CCs are very context-specific external validity of the results is questionable.

7.3 Policy Implications

The evidence of the positive impact of CCs on lifestyle outcomes has the following policy implications. It shows the need for exploring tools that go beyond traditional development programs. The CC programs of GE are evidenced in this thesis to go further than a mere focus on reproductive and productive goals, which is argued in this thesis also distinguishes them from cash transfer programs. Assessing if and how these CCs also contribute to sustainable lifestyles is not only crucial for the further improvement of the living conditions of the residents of the INSEs where the community currency programmes are running, but can provide revelatory insights for similar cases and can inform policy solutions in light of Sustainable Development Goal number 11 *Sustainable Cities and Communities* and the challenges it entails; such as: lack of funds to provide basic services, a shortage of adequate housing and declining infrastructure (United Nations, 2017).

This evidence supports the potential the CC programs of GE hold for the sustainable development of INSEs. The UN-Habitat (2016) notes that “improving the lives of the millions living in slum conditions today continues to be a core task for development and for ending our world’s poverty”, this was first underpinned by Target 7D of the Millennium Development Goals and repeated in Target 11.1 of SDG 11: “By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums” (United Nations, 2017). In the New Urban Agenda (UN-Habitat, 2016c), the importance of “Participatory and ‘Bottom-Up’ Practices” in all challenges linked to urbanization is stressed, profiled as “legitimate alternatives or complimentary catalysts for positive change”. These ‘Bottom-Up’ Practices can assist governments in developing more appropriate policies and addressing urban challenges through national and local development policy frameworks (Croese et al., 2016). Among these challenges is the improvement of the living conditions in INSEs. There is thus a clear need for grassroots innovations such as the CCs of GE, that have a more holistic perspective on development. This need is further underpinned by the Mexico City Declaration for Habitat III on Financing Urban Development which calls for “further research, promotion,

systematization and scaling-up” of “local, complementary and thematic currencies” amongst other SSE strategies and mechanisms (United Nations, 2016).

Most traditional development programs are developed by the Global North for the Global South. The CCs under study however involve the participants in the implementation of the program that they will participate in. It aims at structurally helping these communities in terms of welfare services, and hence goes further than merely giving cash. These CC programs include broader considerations than a narrow economic focus, like the SLifA includes broader considerations in the analysis of development programs. The SLifA acknowledges that it is not because people are poor that they do not have aspirations and that everyone needs to shift to sustainable lifestyles in light of the global 21st century challenges, thus being an analysis framework that can be used for analysis of programs in both the Global North and Global South.

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Appendices

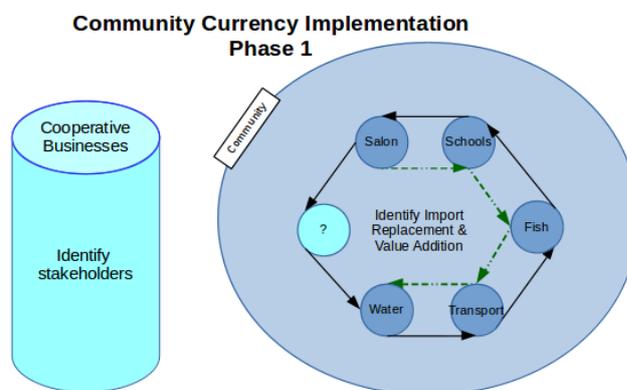
Appendix 1: Implementation Phases of the CC

IMPLEMENTATION PHASES

Community Currency Phases

1. Phase 1.

1. Identify Stakeholders. -
 1. Trainers: CC Course alumni and GE staff
 2. Implementers: Lead facilitating organization and supporting partners
 3. Other Community Leaders: Cooperatives and other community groups
 4. Focus group trainings
2. Assess capacity of stakeholder assets, businesses and network
 1. Assess current levels of cooperation and trust in the proposed network
 2. Assess backing businesses – whose goods or services form the CC collateral
 3. Identify value addition to those businesses or new businesses
 4. Perform baseline analysis of community to measure later impacts and look at various indicators for implementation
5. Legal due-dilligence
6. Identifying partners:
 1. Government
 2. Business – large scale employers,
 3. NGOs
 4. Health



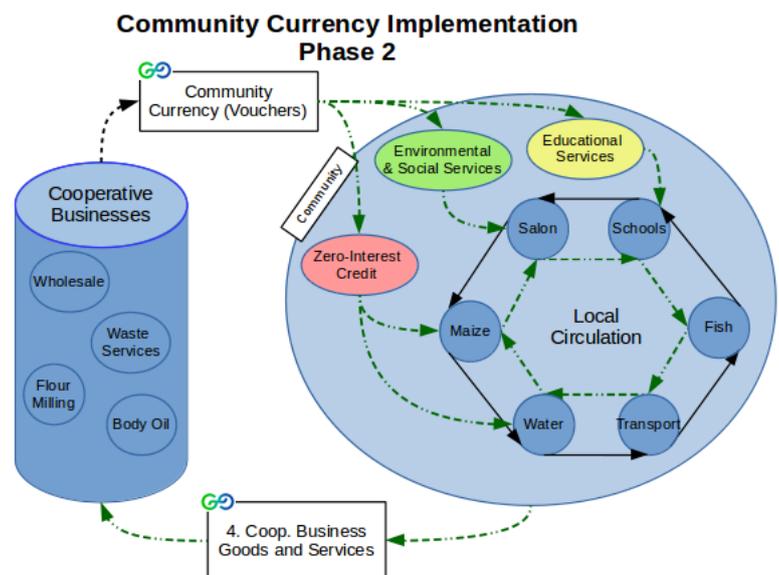
5. Education
 6. Environmental
 7. Focus group trainings
 8. Develop long term plan with stakeholders
3. Backing Business(es) Development
 1. Value addition or business creation. We want to ensure that when CC is issued everyone will know where it will not be refused.
 2. Training new and existing group businesses on accounting and CC usage

2. Phase 2.

1. Capacity building Backing Business and Implementers
 1. Ensuring the business is profitable and able to provide collateral in goods and services for all CC issued.

2. CC Launch

1. The public and local leaders are invited to take part
2. As these CC are spent at the backing businesses the accumulated CC are used for: Backing Businesses Operating costs, Community Services and as additional Member credit.



3. CC Maintenance

1. Branding and marketing
2. Capacity building around leadership and skills

3. Training of various community groups and individual members
4. Member Credit
 1. Members registered and trained from the business community. Receive a credit in CC that can be used among each other and also at the Backing businesses.
 2. This is similar to a zero interest loan – where members agree that they must accept back all the CC that they spend
 3. Member credit can be increased over time based on participation in activities and CC usage and should be linked to owning shares in cooperative businesses.
5. Community Markets
 1. Bringing together people to trade using CC at existing and new weekly and monthly markets
6. Community Service Work
 1. Together with local partners using CC to help mobilize and fund educational, environmental and health care providing services.
7. Operating Expenses of Backing Businesses
 1. Backing businesses should have a clear policy on usage of CC to reduce their operating expenses through paying salaries, bonuses, rent, maintenance, stocking and so on.
8. Partnerships
 1. We recommend government and existing health, environmental and social services and NGOs to convert their funds into CC, and support all activities.

3. Phase 3.

1. Asset Ownership

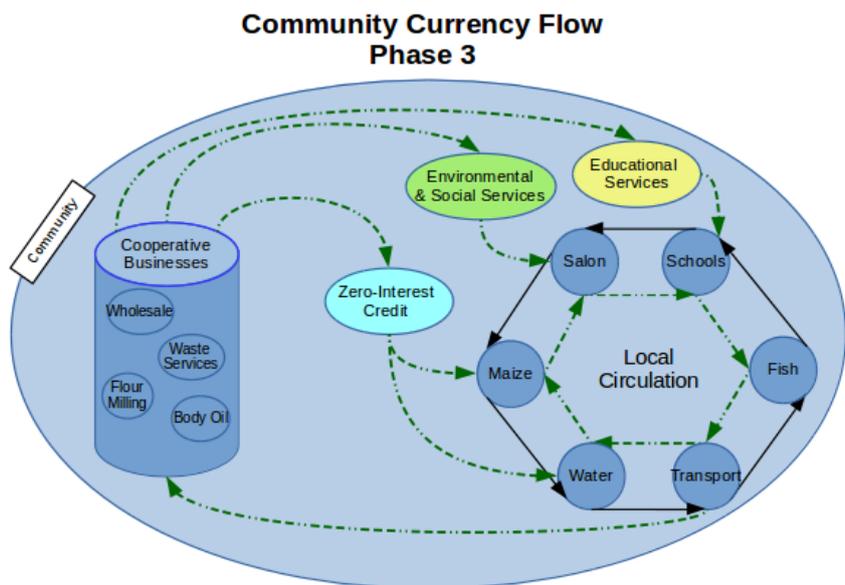
1. Any assets developed in phase 1 &2 for Backing Businesses by outside sources should be purchased by the community over time. This funding will help the next community start a program.

2. Bi-Yearly Audits

1. These ensure that the amount of CC that is available to the community matches the collateral and inventory or service turnover of the backing businesses.

3. CC Renewals

1. Our CC expire over a one year period and are renewed by members paying off any debt owed.



Appendix 2: Issuance Policy

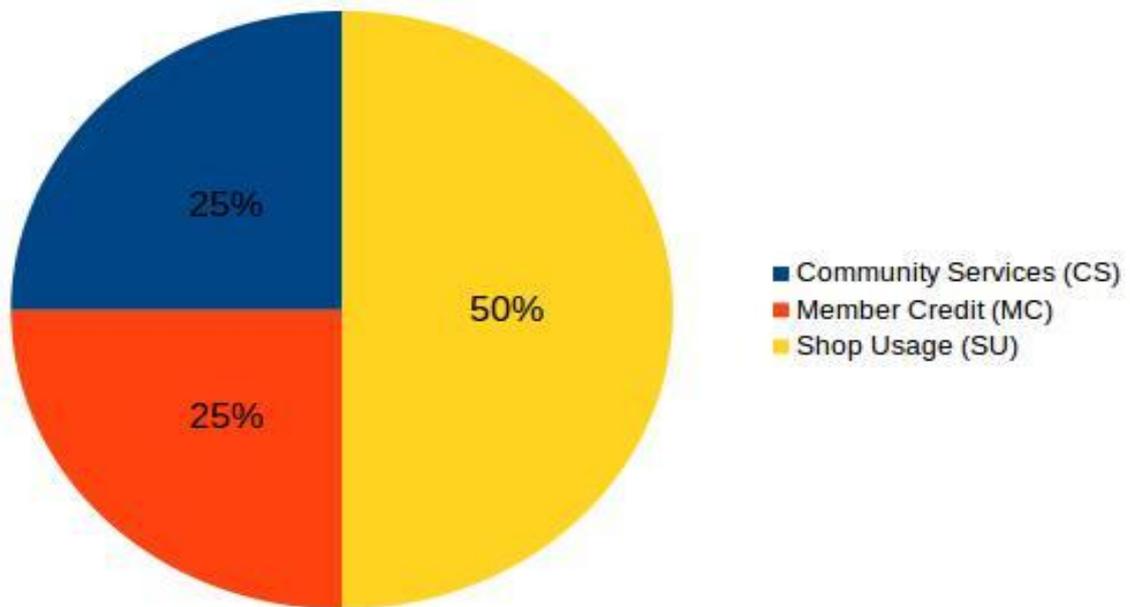
Community Currency (CC) Issuance Policy - October 11 2017:

Summary: The Sarafu-Shop is there to serve the needs of the community. This shop acts as a the backer of last resort – a place where anyone holding CC should know they will never be turned away. All CC issued are based on the SC Shop profits (if any) after costs.

Based on the profits of the SC Shop a portion of those profits ~20% should be used to buy extra inventory. Ex. A profit after costs of 50,000 would thus create 10k inventory that backs 10k CC issuance

The 10k CC if not available can be requested from GE Foundation – who will perform an audit to see if more CC are needed and appropriately backed or may loan the SC Shop more backing inventory.

Out of this 10k of CC available at the SC Shop. Half (50%) of it should be attempted to be used for operating expenses which we call Shop Usage (SU). The remainder should be divided between Member Credit (MC) (25%) and Community Services (SC) (25%). Which will be described below. In all activities described below it is important to start small and help people understand how to use CC.



Community Services (CS)

Summary: The business networks we work with should decide on CS democratically, and be fully involved in facilitation and partnerships. All members and partners should be mobilized to take part in events and to accept the CC issued at the events and use them back at their shops. All member's and partners should help to mobilize the whole community to take part as much as possible.

Goal: The goal of community services is for the members to give back to the community. They are giving away some of the profits from their SC Shop – which is there to serve the community. The BNs should feel empowered to organize these events, seek out partners and mobilize the community. We are promoting a community of caring and compassion. It is very important for these events to not be seen as solely donor initiatives.

Planning: All CS should be planned a month before, together with BNs and partners and approved by Supervisor. CC budget considerations are coordinated with SC Shop manager. Each CS activity proposal should have a **Summary Description, Purpose, Schedule, Partners, Partner Responsibilities, Budget, Custom Monitoring Form.**

Accounting: All CC usage should be well recorded just as KSH. It should be signed for with receipts for usage and any excess returned and signed for at the SC Shop.

Monitoring: A record of all events should be kept and turned in at the end of the month. See event spread sheet.

Example Community Service Work:

Sick & Elderly Care - Compassion

Waste Collection – Tidness and recycling

Market Days

Meetings – Networking events.

Student and Nursery Sponsorship – Promote education for those in need

Environmental Services – Promote indigenous trees, agroforestry,

Sports Events – Promote health and team work

Partners include:

BNs, - The main organizers and facilitators

hospitals & clinics, - Accept CC for the ill and elderly. Help organize food and other services using CC

Youth Groups – Accept CC for services, waste collection, recycling.

Members, - Attend events and accept CC from people doing CS activities

Venue, - Should allow the activity and accept some amount of CC

Marketers – Help announce events and also support training the community

Schools – Accept CC and help decided on needy students and school activities

Partner Responsibilities:

Organize events and service schedule

Mobilize members and community

Members should be the main CS provider and/or or recipient.

Members should accept CC used for CS to buy things at their shops.

Ensure that all CC issued is done fairly and in cooperation with partners

Encourage CC to be used among members – and not all back at the SC Shop

Member Credit (MC)

Summary: The business networks we work with should help us decide on which members should be given a credit in CC.

The 400 CC starting credit level requires backing of a chama and having a local business.

Increased to Credit level depend on:

Taking part in Community Service Activities, CC usage, Business growth.

The member should understand that their credit level should be maintained. If they are below they need to accept sell more for CC or take part in more community services or do work for members, or buy back CC from the SC Shop.

Note that at the end of the year – to take part in the program the following year after vouchers expire, or to increase their credit level they must show that they have enough CC to fill their existing credit level.

To be invited for special activities members should show they are at their credit level at least on a 3 months basis.

Goal: The goal of issuing a MC is for the member to:

Increase trade and trust in the community

Take part in community service work

Feel a part of the SC Shop. Know where it is and plan on how to take part.

Understand how CC works - The member should be trained with all the material in the User Guide and pass the quiz.

Planning: All MC should be planned a month before, together with BNs and partners and approved by Supervisor. CC budget considerations are coordinated with SC Shop manager. A MC proposal should have:

A fully filled and signed registration Form or Credit Increase request for each new or existing member.

A quiz taken and passed as well as Terms & Conditions Signed.

A chama membership form filled out.

Accounting: All MC usage should be well recorded just as KSH. It should be signed for with receipts for usage and any excess returned and signed for at the SC Shop.

Monitoring: A record of all members new and old receiving MC should be well documented as an excel file. This is our database of members.

Example Member Credit:

A small chama with 7 members wants to be a member. They fill out the chama application and all members are trained with the User Guide and quiz. They fill out a member application.

These papers are turned into the SC-Shop and supervisor at the end of the month, and the following month (upon review) CC is allocated for these members.

Partners include:

BNs, - Which bring their members into the program.

Members, - Who grow the network, to all their friends, colleagues, schools, clinics etc.

Partner Responsibilities:

BNs are responsible to back the CC credited to their members and ensure they keep a balance of their credit level.

Shop Usage (SU)

Summary:

The Sarafu-Shop should never refuse to accept CC and should attempt as much as possible to spend this CC in order to reduce its operating expenses. Members should be encouraged to work for and with the SC Shop to reduce its KSH costs.

Goal: The goal of using CC at the Sarafu-Shop is to:

Reduce operating expenses

Treat the Shop as part of the CC Network – and demonstration where CC comes and goes on a regular basis. (Training center)

Excess profits go to SC and MC above

In each case of SU, even starting with 50CC should be tried and gradually increasing it.

Planning: SU should be continuous. But plans to inject CC into shop operations should be well defined. Any usage with employees should be agreed upon by the employee in writing.

Accounting: All SU should be well recorded just as KSH.

Monitoring: A record of all SU of CC should be accounted for in the Shop Monthly Accounts.

Example Shop Usage:

Examples include all operating expenses:

Salaries & Bonuses

Rent

Advertising

Inventory

Maintenance (Cleaning, Waste Collection)

Making change

Transport

Partners include:

Employees

Landlord

Marketing / flyers / radio

Distributors

Janitorial work

Clients

Transporters (Boda boda, mkokoteni)

Appendix 3: Application Forms

	<h1>Sarafu-Credit</h1> <p><i>Prospering economies built by thriving communities.</i></p>			Member# Grassroots Economics PO BOX 81443-80100 Mombasa Mobile: +(254)- (0)727956374
	Grassroots Economics – Sarafu-Credit program – Membership Application			
For the Applicant:				
By signing below I, the applicant, agree to (a) Abide by the Terms and Conditions of the Sarafu-Credit program. (b) Accept Sarafu-Credit for my goods and services and spend Sarafu-Credit for my daily needs. (c) On a monthly basis return all allocated Sarafu-Credit. (d) Upon termination of membership, return the Sarafu-Credit allotted to me or equivalent goods and/or services at market rates.				
	Name		Contact #	
	National ID		Business	
	Date		Signature	
	Top Item/Service Sold:		Location	
You must be a member of a participating chama. A representative of that organization must sign below:				
Applicant's Chama:			Name of Chama:	
By signing below I, the official representative of the Chama, agree that: (a) The applicant is a member of the chama and eligible to join the Sarafu-Credit program based on the program statutes. (b) The Chama and Chama members will accept Sarafu-Credit for any fees, goods and/or services from the applicant. (c) The Chama will cover any debts of the Applicant in Sarafu-Credit or Kenyan Shillings if the applicant does not abide by the program statutes and rules.				
	Name	National ID	Contact #	Signature
1,				
2,				
DO NOT FILL BELOW: For Grassroots Economics Only				
1st	Sarafu-Credit Issued	Date:	Initial Amount Issued:	
b	GE Coordinator	Name:	Signature	Date
c	GE Area Director	Name:	Signature	Date
2nd	Sarafu-Credit Issued	Date:	Amount:	Previous Amount:

b	GE Coordinator	Name:	Signature	Date
c	GE Area Director	Name:	Signature	Date
3rd	Sarafu-Credit Issued	Date:	Amount:	Previous Amount:
b	GE Coordinator	Name:	Signature	Date
c	GE Area Director	Name:	Signature	Date
Notes				

 <h1 style="margin: 0;">Sarafu-Credit</h1> <p style="margin: 0;"><i>Prospering economies built by thriving communities.</i></p>	Chama# Grassroots Economics Foundation PO BOX 81443-80100 Mombasa Mobile: +(254)- (0)727956374		
	Grassroots Economics – Sarafu-Credit program – Chama Application		
Name of Chama:			
Chama Type (CBO, Self-Help, SACCCO)	Registration Number:		
Registration Type:	Registration Date		
Address	Last reg. Renewal.		
Number of Members	Location/Area		
This application must be renewed yearly.			
This application must be renewed yearly.	Name of Chama:		
By Signing below the Chama official representatives, agrees that: (a) All chama members can apply for the Sarafu-Credit program based on the program statutes. (b) The Chama and Chama members will accept Sarafu-Credit for any fees, goods and/or services. (c) The Chama will cover any debts of the Sarafu-Credit program members in Sarafu-Credit or Kenyan Shillings if the member is in debt for 3 or more months.			
1,	Name of Chama Official	Date:	Signature
	Title	National ID	Contact #

2,	Name of Chama Official		Date:	Signature
	Title	National ID	Contact #	
3,	Name of Chama Official		Date:	Signature
	Title	National ID	Contact #	
DO NOT FILL BELOW: For Grassroots Economics Only				
b	GE Coordinator	Name:	Signature	Date
c	GE Area Director	Name:	Signature	Date
1.	Proposed Members	Name:	Contact #	Member#
2.	Proposed Members	Name:	Contact #	Member#
3.	Proposed Members	Name:	Contact #	Member#
4.	Proposed Members	Name:	Contact #	Member#
5.	Proposed Members	Name:	Contact #	Member#
Notes				

Appendix 4: Sarafu-Credit User Guide

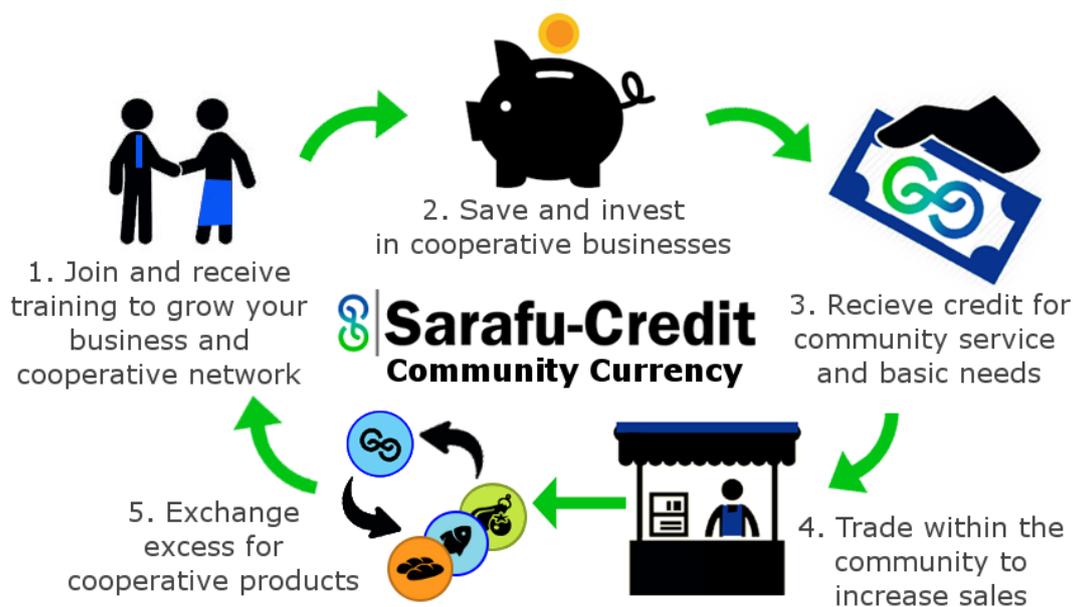
V.6.0- 4th-September-2017



USER GUIDE

KENYA

-English-



Grassroots Economics Foundation
P.O Box 81443-80100 Mombasa, Kenya
<http://grassrootseconomics.org>
info@grassrootseconomics.org

What is Sarafu-Credit?

Sarafu-Credit is **a voucher for goods and services** of Sarafu-Shops and participating organizations, schools, shops, farms, and clinics. Sarafu-Credit acts as **a local means of exchange (money)** that does not replace but rather supplements (tops-up) lacking Kenyan Shillings. Through increasing trade by matching unmet local needs with under-utilized local resources Sarafu-Credit enables sustainable economic, environmental and social development programs.

Sarafu-Credit is a voucher **worth the same amount in Kenyan Shillings** of goods and services. Sarafu-Credit **is a mutual credit**, which means that it is **fundamentally backed by the community**, i.e. individual members' own goods and services. As an additional collateral source cooperative businesses are developed, which also allows for the growth of the trade network.

1. How do people get Sarafu-Credit?

People receive Sarafu-Credit:

- a) As a zero-interest loan.
- b) For community service work.
- c) As payment or change for goods and services.
- d) As a top-up.

- a) As a **zero-interest loan** - Sarafu-Credit may be loaned to members of local organizations. Potential members fill out a detailed registration form after they are deemed credit-worthy by running a local business and being guaranteed by the chama organization. After reviewing your application, a committee may accept or reject your application. You can use the Sarafu-Credit to trade goods and services among members. **You need to accept Sarafu-Credit for your goods or services, in order for Sarafu-Credit to help the community. Loans should be renewed each month during chama meetings.** Members that have not been able to renew their Sarafu-Credit in a month are in debt to their local organization and the community.
- b) Community Service work - Participating non-profits, NGOs and other organizations may wish to support their activities by **rewarding volunteer efforts with Sarafu-Credit.** Organizations may support needy children with school fees, or encourage youth to plant trees and protect the environment. Sarafu-Credit given in this way can be used at participating shops, schools and so on.
- c) As **payment or change for goods and services** - anyone may use Sarafu-Credit to pay for goods or services or offer Sarafu-Credit as change. This is considered as a form of barter and should circulate around the community to increase trade.
- d) As a **top-up** - when the participating member is not able to renew their monthly loan, and in debt to the local organization, he or she has to top-up his credit using Kenyan Shillings.

2. What benefits can I expect from Sarafu-Credit?

- It will enable you and the community to meet daily needs during the hard times of the month and year (food, rent, transport, school fees).
- It will enable you to increase your daily sales and customers; and to save more Kenyan Shillings.
- It will create a strong community network and market (allowing people to meet, share ideas, trade goods and services and to launch group programs and initiatives).
- You can also take part in community events to receive Sarafu-Credit and you can also ask for change in Sarafu-Credit.
- Any Sarafu-Credit you have after repaying your loan can be used to purchase from the Sarafu-Shop.
- Members are invited to open-air markets where they can trade with each other.

3. Why is it important to keep Sarafu-Credit moving?

The faster Sarafu-Credit moves between members, the more it helps develop the local economy. If it stops moving, it stops helping people trade. As much as you use Sarafu-Credit you should accept it back into your business.

4. How do I renew my Sarafu-Credit loan?

- Try to buy using Sarafu-Credit each day and try to sell your goods with Sarafu-Credit each day. Balance your purchases and sales.
- Use Sarafu-Credit to give change and accept Sarafu-Credit as change when you buy from members.
- Use Kenyan shillings to top up the amount missing from your loan.

5. Who are my guarantors?

- Your guarantor is an organization, CBO or self-help group that endorses you to receive a loan of Sarafu-Credit.
- If you do not repay your Sarafu-Credit loan, your guarantor may use your savings to or, eventually, expel you from the trade network.

6. How much Sarafu-Credit should I keep?

- As a member you should keep about as much Sarafu-Credit as you were loaned.
- In one term (generally one month), your balance may go up and down but on average you should have as much Sarafu-Credit as you started with by the end of the term.

7. What should I do if I have too much Sarafu-Credit?

If you receive more Sarafu-Credit than you are able to spend, you might end up with too much. You can solve this problem by:

- Find businesses to buy from using Sarafu-Credit.
- Giving Sarafu-Credit as change to your customers.
- Contact your backing organization and explain the situation.
- Use your Sarafu-Credit at your nearest Sarafu-Shop.

8. What should I do if I have too little Sarafu-Credit to renew my loan?

You are in debt to the community! By spending your Sarafu-Credit you have received a loan of goods and/or services from other members. In order to repay this debt, you must accept Sarafu-Credit back for your goods and services. You can easily solve the problem:

- You need more customers with Sarafu-Credit. Advertise yourself to more members.
- If no one is buying your goods and services using Sarafu-Credit:
 - a) Contact your guarantors or chama
 - b) Buy goods and services from members in Kenyan Shillings and accept change in Sarafu-Credit

Note that at the end of the term (usually one month) you will be required to pay back in Kenyan Shillings whatever you are missing. If you have savings at the chama, these might be used for repayment of the debt. Repaying your debt means that your Sarafu-Credit level will be topped up again to your initial loan amount. This is needed to ensure liquidity in the community.

i.e. If your loan was 400 Sarafu-Credit and you have a balance of Sarafu-Credit is 350 at the end of the term, you will pay the chama 50 Kenyan Shillings, in return you will receive 50 in Sarafu-Credit as a top-up.

9. What is a Sarafu-Shop?

- Sarafu-Shops are those shops run by Grassroots Economics in collaboration with community groups that provide the backing for Sarafu-Credit. The inventory and profits from these shops determine how many Sarafu-Credit vouchers can be issued to a community.
- Sarafu-Credit can be used for any purchase from a Sarafu-Shop and can, by exception, also be exchanged for Kenyan Shillings for a fee.

10. What is an Sarafu-Alpha Subscriber?

- Sarafu-Alpha Subscribers pay a monthly fee to receive discounts from Sarafu-Shops..

- Sarafu-Alpha Subscribers receive more clients and great discounts
- If you are interested in becoming an Sarafu-Alpha Subscriber, please contact your local Grassroots Economics representative

11. What is the directory and what are its benefits?

The directory is the list of all active members using and accepting Sarafu-Credit. It helps people know where to spend Sarafu-Credit and for members to know each other. **The directory of active members is displayed at your local Sarafu-Shop.**

12. What should I do if other members are not accepting Sarafu-Credit?

- Make sure the member understands the program; they might not understand how to price their items using Sarafu-Credit.
- Give the person a chance to explain why they are not accepting it and come back another day.
- If the member has too much Sarafu-Credit already, help them find a way to use it.
- If all else fails, contact their chama (they may need to be expelled from the network).

13. How should I price my goods and services in Sarafu-Credit?

- You can accept as much as you can use. It is up to you to make sure that you can use all the Sarafu-Credit you receive.
- As you being, for every Ksh.100 you could accept 10 Sarafu-Credit.
- For service shops, like barbers, you can charge as much as 50% of an item price in Sarafu-Credit.

14. How do I get a loan in Kenyan Shillings?

- A Sarafu-Credit loan is a loan of vouchers for goods or services which you pay back with your own goods and services when you accept Sarafu-Credit.
- To get a Kenyan Shilling loan, you must save Kenyan Shillings in the group/chama account and apply for a loan from the group itself or a bank
- By using Sarafu-Credit more, your business should have more customers and more stability and hence be more deserving of a loan.

15. If my supplier isn't a member, how can I buy my supplies and stock with Sarafu-Credit?

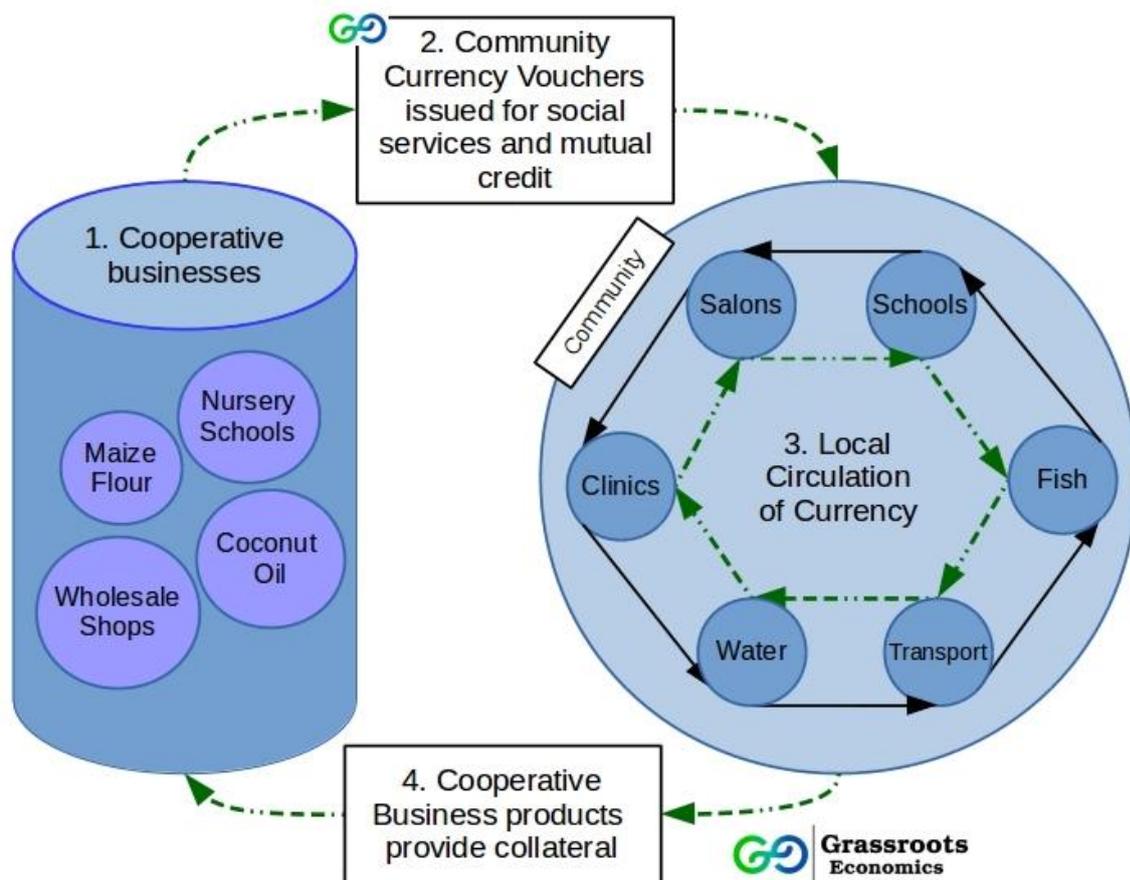
- If your supplier isn't a member explain to them the benefits of the program and give them an application form and a directory.
- If your supplier refuses to become a member, you will make sure to accept as much Kenya Shillings as you need in addition to Sarafu-Credit to buy your stock.
- Ultimately it is up to the Sarafu-Credit user to make appropriate business decisions.

16. Is Sarafu-Credit legal?

On August 23rd 2013, Bangla-Pesa was deemed by the Director of Public Prosecution in Kenya to not have broken any laws. The Sarafu-Credit programs are under the supervision of Grassroots Economics and in coordination with the local government. Community Currency (which are vouchers equal in value to National Currency), will be issued per member of a registered Kenyan organization. Future issuance will be in coordination with the business network and available backing.

17. When do Sarafu-Credit Expire?

Sarafu-Credit vouchers each have an expiration date. After or the month before the expiration date members in good standing and no debt may turn in their vouchers at the nearest Sarafu-Shop for vouchers with an extended expiration date. Any expired Sarafu-Credit are no longer valid and should not be accepted at the Sarafu-Shops or by any members.



Test your Knowledge with the Sarafu-Credit Quiz below

QUIZ

1. How much Sarafu-Credit are members first loaned?

(a) 100 (b) 200 (c) 400 (d) 500 (e) depends on the member

2. How many Shillings did you pay to receive a Sarafu-Credit loan?

(a) 0 (b) 100 (c) 200 (d) 400 (e) or more

3. When can you exchange Sarafu-Credit for Kenya Shillings with a fee?

- (a) End of the month
- (b) After you have repaid your Sarafu-Credit loan
- (c) Never

4. What is the value behind 50 Sarafu-Credit?

- (a) Ksh.50 (b) Ksh.45 (c) Ksh.55
- (d) Ksh.50 worth of members' goods and services

5. What does it mean if you have extra Sarafu-Credit after repaying your loan? (mark all that apply)

- (a) I have more Sarafu-Credit than I started with
- (b) I need to sell more products for Sarafu-Credit
- (c) I should be buying more goods and services with Sarafu-Credit.

6. What does it mean if you don't have enough Sarafu-Credit to pay back your Sarafu-Credit loan? (mark all that apply)

- (a) I have too little Sarafu-Credit and am in debt.
- (b) I should be spending Sarafu-Credit it as fast as possible
- (c) I have received goods and services from members on credit and need to repay the debt.
- (d) I need to sell more products for Sarafu-Credit.

7. How do non-members use Sarafu-Credit? (mark all that apply)

- (a) Choose to accept it as change from members
- (b) Never get to use it
- (c) They can accept it voluntarily as payment for work or community services.

Quiz Answers: 1.) e 2.) a 3.) c 4.) d 5.) a, c 6.) a, c, d 7.) a, c

Appendix 5: Memorandum of Confidentiality

MEMORANDUM OF CONFIDENTIALITY

entered into between

Daan Sillen of Maastricht University / UNU-MERIT
(Researcher or Person) (Title and Organization / University)

Under the Supervision of:

Dr. Pui-Hang Wong
(Supervisor)

(who represents and acts on behalf of the Organization, University or Program and collectively hereinafter referred to as "Researcher")

and

Grassroots Economics Foundation
(hereinafter referred to as "the Service Providers")

Grassroots Economics Foundation is a non-profit Foundation registered in Kenya, PO Box 81443-80100 Mombasa, Kenya, (info@grassrootseconomics.org) whose purpose is to empower marginalized communities through economic development programs.

1. Interpretation and definitions

1.1 "Confidential Information" is information which is confidential to the Parties, and includes, but is not limited in its interpretation to,-

1.1.1. all information relating to procurement requirements, procurement methodologies, procurement spend and supply base;

1.1.2. all information or knowledge in respect of pricing, discounts, rebates, business methods and/or models, systems and concepts, supply chain designs and strategies, trading and merchandising methods and information, card transactions and models, mathematical modelling and predictive analytics, promotional and advertising plans and strategies, marketing, financial plans and models, technical information and specifications, manufacturing techniques, inventions and designs, ideas, know-how, formulae, statistics, processes, instruction manuals, research and development data, samples and demonstrations, user or consumer or client data and profiles, computer programs, drawings and any other information of a confidential nature, in whatever form it may be;

1.1.3. the contractual business and financial arrangements of the Parties and other with whom it has business arrangements of whatever nature;

1.1.4. All data collected collected as part of Complementary or Community Currency programs, implemented by Grassroots Economics Foundation.

1.1.5. Data collected from community members participating in Complementary or Community Currency programs, implemented by Grassroots Economics Foundation.

1.1.4 "personal information" in relation to clauses 5 and 6 below means information relating to an identifiable, living, natural person, and where it is applicable, an identifiable, existing juristic person, including, but not limited to—

(a) information relating to the race, gender, sex, pregnancy, marital status, national, ethnic or social origin, colour, sexual orientation, age, physical or mental health,

well-being, disability, religion, conscience, belief, culture, language and birth of the person;

- (b) information relating to the education or the medical, financial, criminal or employment history of the person;
- (c) any identifying number, symbol, e-mail address, physical address, GPS location, telephone number, location information, online identifier or other particular assignment to the person or business of the person;
- (d) the biometric information of the person;
- (e) the personal opinions, views or preferences of the person;
- (f) correspondence sent by the person that is implicitly or explicitly of a private or confidential nature or further correspondence that would reveal the contents of the original correspondence;
- (g) the views or opinions of another individual about the person; and
- (h) the name of the person if it appears with other personal information relating to the person or if the disclosure of the name itself would reveal information about the person.

1.2 “**Commencement Date**” shall mean the date of signature of the last Party signing this agreement;

1.3 “**Party/ies**” shall mean either Researcher or the Service Provider or both, as the case may be;

1.4 “**Disclosing Party**” shall mean either Researcher or the Service Provider, as the case may be;

1.5 “**Receiving Party**” shall mean either Researcher or the Service Provider, as the case may be;

1.6 “**Representative**” means a director, officer, staff member, student, consultant, professional advisor or other representative of a Party;

1.7 “**Researcher Group**” shall mean Researcher and all its subsidiaries and subsidiaries of its subsidiaries, including affiliates and associated companies;

1.8 words in the singular include the plural and vice versa;

1.9 words importing any one gender include each of the other two genders; and

1.10 a reference to a natural person includes a legal persona.

1.11 the headings of clauses are intended for convenience only and shall not affect the interpretation of this agreement.

2. Preamble

2.1 Researcher has in its possession certain Confidential Information relating to the personal information, business and/or know-how and/or ideas and/or concepts of the Service Providers and it's members.

2.2 The Service Provider has in its possession Confidential Information relating to the personal information, business and/or know-how and/or ideas and/or concepts of the Service Providers and it's members.

- 2.3** The Parties have agreed to disclose, reveal and exchange to each other certain of their respective Confidential Information for the purpose of researching aspects of the Service Providers - subject to the terms of confidentiality set out herein.

3. Title to the Confidential Information

The Parties acknowledges that all rights, titles and interests in and to the Confidential Information disclosed by a Disclosing Party to a Receiving Party vests in the Disclosing Party and that the Receiving Party has no claim of any nature in and to the Disclosed Party's Confidential Information.

4. Period of confidentiality

The provisions of this agreement shall remain indefinitely after termination of this agreement.

5. Security measures on integrity and confidentiality of personal information

- 5.1** Notwithstanding any other obligations of confidentiality resting on the Parties as provided for in this confidentiality agreement, the Receiving Party shall specifically ensure that it secures the integrity and confidentiality of personal information in its possession or under its control, which personal information is processed for and on behalf of the Disclosing Party, with the knowledge and/or authorisation of the Disclosing Party, by taking appropriate, reasonable technical and organisational measures to prevent-

- 5.1.1** loss of, damage to or unauthorised destruction of personal information;
- 5.1.2** unlawful access to or processing of personal information.

- 5.2** In order to give effect to the aforesaid obligations, the Receiving Party shall ensure that it takes reasonable measures to-

- 5.2.1** identify all reasonably foreseeable internal and external risks to personal information in its possession or under its control;
- 5.2.2** establish and maintain appropriate safeguards against risks identified;
- 5.2.3** regularly verify the safeguards are effectively implemented; and
- 5.2.4** ensure that the safeguards are continually updated in response to new risks or deficiencies in previously implemented safeguards.

6. Protection of personal information

- 6.1** The Parties hereby agree that, upon the introduction and commencement of legislation, including the periodic amendment of such legislation, dealing with and regulating the protection of personal information, and if and to the extent applicable, each Party shall ensure that -

- 6.1.1** they, and all relevant employees, are at all times aware of the continuing requirements of such legislation, and if applicable the codes of conduct , industry and best practices requirements;
- 6.1.2** they have the requisite compliance plans, systems, procedures and processes to ensure that all legal and regulatory requirements, and if applicable, codes of conduct, industry and best practices requirements are adhered to;
- 6.1.3** they shall on a regular basis measure, monitor and take such remedial action to ensure due compliance;
- 6.1.4** they shall inform the other party of a material breach of any of their respective obligations.

- 6.2** The Parties agree that the rights and obligations set out in 6.1 above shall be in addition to any rights or obligations currently in existence vesting in terms of other applicable legislation or arising out of the rights to privacy or any contractual or common law rights to confidentiality.

)

7. Non-disclosure

- 7.1** A Receiving Party undertakes to maintain the confidentiality of any Confidential Information disclosed to it by a Disclosing Party, whether before or after the Commencement Date of this agreement. The Parties will not divulge or permit to be divulged to any person, other than to the Representatives of either of the Parties who are obliged to maintain the confidentiality thereof, any aspect of such Confidential Information.
- 7.2** Any papers or publications using Confidential Data will have any Personal information removed to protect identities of program members.
- 7.3** The Parties shall take all such steps as may be reasonably necessary to prevent the Confidential Information from falling into the hands of any unauthorised third person.
- 7.4** The Parties shall not use or disclose or attempt to use or disclose the Confidential Information for any purpose other than as may be mutually agreed.
- 7.5** Neither Party shall use or attempt to use the Confidential Information in any manner which will cause or be likely to cause injury or loss to the other Party or members of the Service Provider.
- 7.6** All documentation furnished by a Disclosing Party to a Receiving Party pursuant to this Agreement will remain the property of the Disclosing Party and upon the Disclosing Party's request will be returned to the Disclosing Party. The Receiving Party will not make copies of any such documentation without the prior written consent of the Disclosing Party.
- 7.7** To maintain the integrity of our systems, all confidential information, including Complementary and Community Currency implementation strategies and systems shall not be used by the Researcher to set-up, initiate, augment or adjust programs without the explicit written consent and guidance of the Service Providers.

8. Exceptions

- 8.1** The above undertakings by the Parties relating to the confidentiality shall not apply to information which:
 - 8.1.1** is in fact lawfully in the public domain at the Commencement Date; or
 - 8.1.2** lawfully comes into the public domain after the Commencement Date otherwise than as a result of the conduct of a Party or one of its employees; or
 - 8.1.3** a Party is compelled to disclose in terms of a court order; or
 - 8.1.4** the Confidential Information had in fact already come into the possession of a Party on or prior to the Commencement Date from a source other than either of the Parties.
- 8.2** The onus of proving the facts necessary to refute the application of any of the exceptions listed in sub-paragraphs 8.1.1 to 8.1.4 rests with the Party who alleges non-applicability thereof.

9. Whole Agreement

- 9.1** This document constitutes the whole of this agreement to the exclusion of all else.
- 9.2** No amendment, alteration, addition, variation or consensual cancellation of this agreement will be valid unless in writing and signed by both Parties.

10. Waiver

- 10.1** No waiver of any of the terms or conditions of this agreement will be binding for any purpose unless expressed in writing and signed by both Parties and any such waiver will be effective only in the specific instance and for the purpose given.
- 10.2** No failure or delay on the part of a Party in exercising any right, power or privilege will operate as a waiver, nor will any single or partial exercise by a Party of any right, power or privilege preclude any other or further exercise thereof or the exercise of any right, power or privilege.

11. Severability

In the event that any of the provisions of this agreement are found to be invalid, unlawful, or unenforceable such terms shall be severable from the remaining terms, which shall continue to be valid and enforceable.

12. Cession

- 12.1** A Party shall not be entitled to cede or purport to cede this agreement or its rights and obligations contained herein or any part thereof without first obtaining the prior written consent of the other Party, which consent shall not be unreasonably withheld. Despite such cession such Party shall remain bound to its obligations hereunder to maintain the confidentiality of the Confidential Information of the other Party.

13. Dispute resolution

- 13.1** Any dispute arising from or in connection with this confidentiality agreement shall (with the exception of urgent relief from a court of competent jurisdiction) in the first instance be referred to the respective chief executive officers of the Parties, failing whom, their respective equivalents or nominees ("CEOs"). Should the CEOs be unable to resolve the dispute within 7 days after the referral of the dispute to them, the dispute shall, at the request of any Party to the dispute, be dealt with as provided in 13.2 below.
- 13.2** Any dispute arising from or in connection with this confidentiality agreement, which has not been resolved pursuant to 13.1 above, shall be finally resolved in accordance with the rules of the Arbitration Foundation of Southern Africa ("AFSA") by an arbitrator agreed to between the Parties and failing such agreement within three days of a request therefore by a Party, an arbitrator appointed by AFSA.
- 13.3** The seat of the Arbitration shall be in Nairobi Kenya.

THUS DONE AND SIGNED AT *Maastricht*..... ON THIS *4th*... DAY
OF *December 2017*.....

For and on behalf of Research who confirms that he/she is duly authorised to enter into this agreement on behalf of the Research Organization.



.....
Signature

Daan Sillen

.....
Full Names and Surname

Student
.....
Print Title / Designation

As Witnesses:

1.

2.