

## MONEY FOR TOMORROW

The impact of community currencies on environmental sustainability

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## Abstract

This study examines how community currencies can be used to improve environmental sustainability in local communities. The amount of different community currency projects has steadily increased around the world since the 1980s. Community currencies are a form of money that functions alongside official currencies, complementing their limitations. They are used for different purposes, ranging from improving social sustainability and stimulating economic activity in communities where it has slowed down to encouraging more environmentally sustainable practices like recycling on a local level. In this study, different kinds of community currencies are examined and their potential on improving environmental sustainability are evaluated through a literature review.

This study demonstrates that through community currency systems, some improvement on environmental practices can be achieved on a local level, however, community currencies are likely to have a bigger impact on social sustainability. The extent of the impact of a community currency depends heavily on how widely it is accepted in the community. This study also briefly examines how a community currency should be implemented in order to be effective. Results point to the importance of effective communication about the functioning of the community currency as well as using a meaningful rationale to motivate people to use the currency. Further research is needed to evaluate the impact of community currencies on a larger scale.

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**Keywords** community currency, environmental sustainability, implementation

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## 1. Introduction

The topic of my thesis is community currencies. The term is often used interchangeably with the term complementary currencies. To be specific, community currencies are a form of a complementary currency that is specifically tied to a community, whereas ‘complementary currency’ simply refers to some sort of a currency that works alongside a dominant currency. As opposed to national currencies like the euro, community currencies are tied to a specific, limited community and function alongside the national currencies, complementing their limitations. Community currencies are designed to meet the needs of the defined community, which can be geographical, business-based or even online, and are designed usually on a not-for-profit basis. (Scott et al., 2015)

I got to know the term community currency in one of my courses during my exchange spring in Lund, Sweden. It made me realize that the monetary system affects the whole society in major ways and how powerful a tool money can be if it is designed in alignment with the benefit of the whole community. It was baffling to me that it is not well known how money actually works and how it is designed because the system that we have right now is so influential (Ryan-Collins et al., 2013) and most certainly not neutral (Ingham, 2004).

In this study, I will examine community currencies in terms of their ability to address environmental sustainability in local communities. I will examine if it’s possible to encourage people with financial incentives to behave more sustainably in their everyday lives. The reason why I’m interested in examining the potential of community currencies from the environmental point of view is that environmental values have always been close to my heart, and environmental sustainability and the lack of it is undeniably one of humanity’s main issues in the 2020s. Results of this literature review show that even though community currencies have their limitations, they have the potential in encouraging people to live more sustainably and organize economies in a more environmentally friendly way.

The structure of my thesis will be as follows: I will provide background to the topic and a brief history of community currencies in Chapter 2. I will dive deeper into the topic and look at a few

example cases of environmental community currencies in Chapter 3. Finally, I will examine what indeed is the potential of community currencies in increasing environmental sustainability, and what needs to be considered when implementing such a currency in Chapter 4. Chapter 5 concludes.

## 2. Background

### 2.1. What is money?

The nature of our monetary system is rarely questioned. How it is organized and how money works is seen as one of the core elements of our society, something that has always been and always will be. Even in economics literature, the nature of money itself has historically been taken for granted and it hasn't been explored to a large extent (Ingham, 2004). There are conflicting views on what money is and how it works (Ingham, 1998) because the monetary system is complex and it is hard to understand from an individual point of view (Barinaga et al., 2021). And yet money shapes our society, affecting everything in it.

Money is often seen as a thing; an asset that someone has or doesn't have. It's commonly seen as merely a neutral tool that facilitates the exchange of goods between individuals and its role and its impact is often ignored when designing policies for sustainability (Barinaga et al., 2021). This misconception of money as a commodity stems from its common history with gold. The monetary system is based on the Goldsmith story where first gold, and later the inventory receipts people received when placing their gold in a safe, was used as the medium of exchange. Later, the amount of gold was not enough to account for all the money needed in the economy, which is when the receipts and receipts of receipts became the unit of exchange. This is how the concept of paper money backed by gold was formed and it still to this day describes our hierarchical banking system to some extent. However, even though this is believed to be the most descriptive story of money, It actually isn't an accurate reflection of how money was formed and the history of money is in fact way more complex and pluralistic, which has been shown by historians and anthropologists repeatedly. (Wray, 2012; Barinaga et al., 2021)

Through examining its social characteristics (such as the fact that money in the form of loans is distributed in society on the basis of credit ratings, and it deepens social inequality, distributing wealth from the poor to the rich) it is clear that instead of a commodity, money is a social relation and a political tool (Ingham, 2004; Jackson & Dyson, 2013). Money is a social construct, it isn't anything physical, for even though it has the physical form of paper notes and coins, cash makes up around 3% of the overall money supply (McLeay et al. 2014). Money can't be an asset or a commodity since it only has value when it can be exchanged for something; it doesn't have any sort of intrinsic value. It follows that money is a commons tying actors with different interests together.

Money is created by banks when they issue new loans to individuals or firms, and the amount of money created is determined by the bankers' confidence in the market (McLeay et al., 2014; Dyson et al., 2016; Ryan-Collins et al., 2013).

The national monetary system has several inherent problems. First of all, money has conflicting functions: it is a unit of value, a medium of exchange, and a store of value all at the same time (Barinaga et al., 2021; Ryan-Collins et al., 2013). Money is used to exchange goods but also to store the value of those goods. The store of value function gives money a price, the inflation rate. Inflation rates prompt the ones who have money to save it to wait for its value to grow over time, but this makes money circulate less in the economy. The outcome is that there is a growing amount of money for those who are rich enough to save and less income for those who cannot save.<sup>1</sup>

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<sup>1</sup> Silvio Gesell explored the conflict of money's different functions in his book *The Natural economic order* (1916) and introduced the idea of demurrage, negative interest. He found that the need for charging interest is originated in money itself, not in the goods that one can buy with money. If we were only exchanging goods for other goods, there would be no need for interest, because the value of every good decreases naturally over time. But with money coming in, a disparity is created, because money's value doesn't deteriorate over time and so the money lender can ask for interest for the money that they lend, while the borrower has no other option but to agree. However, the borrower then has a loan that is growing in price over time and goods that are deteriorating in value over time. According to Gesell, it follows that money doesn't merely pay the price of the commodities it purchases (contrary to what Karl Marx among others argued). The borrower of money pays more than the price of the goods that they can buy, but the money lender only makes a profit. Gesell saw this as a problematic disparity.

The need for infinite financial growth in our capitalist system has also been questioned by an increasing number of scholars (see for example Arnsperger et al., 2021), because with finite ecological resources, how could it be possible to provide this?

Additionally, money tends to flow from rural, less populated areas to bigger growth centers, and communities in the more rural areas struggle to keep the money that they need to build sustainable economies and prosperity in the area (Sacks, 2002). In order to create prosperity at a local level, money needs to keep circulating in a community instead of flowing into the pockets of international corporations. More circulation of the money leads to more economic activity and more jobs etc.

The monetary system is also inherently unstable and pro-cyclical, because in free markets, banks are able to create credit for speculation and the system is directed by banks' and firms' confidence. When the financial actors and bankers believe that the prospects for the economy are good, they expand credit and lend money easily, which creates jobs and more demand for products. However, once the financial actors start fearing that the bubble will burst, it leads to the money supply contracting, unemployment and debt defaults. The boom and bust cycle is undoubtedly unstable and it depends on how a small number of people view the future of the economy.<sup>2</sup> (Ryan-Collins et al., 2013; Dyson et al., 2016)

## 2.2. Money and sustainability perspectives

In our current system there are no strong enough incentives for banks to take into account the social and environmental impact of the activities that they fund (Ryan-Collins et al., 2013). The commercial banks, which are responsible for the majority of the money creation, are profit-seeking businesses whose products are loans. In order to make economic growth they're not incentivized to consider the impacts of their loaning to a great extent, outside of the financial pros and cons. This was illustrated very clearly in the 2008 financial crisis. (Jackson, 2009)

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<sup>2</sup> Central banks are mandated but often struggle to stabilize the boom and bust of the financial sector. Practically the only way central banks can control the amount of money in the economy is by setting base rates for the loans they give out to commercial banks. However, it's been shown that this doesn't affect the amount of money in the real economy very much. (Barinaga, 2021; Dyson et al., 2016)

At the same time, the climate crisis is becoming a more and more serious threat to our future and time is running out to solve it. The capitalist system has led to the natural resources of the Earth collapsing, because it creates the need for eternal growth, something that nature's resources cannot provide. The problem of externalities leads to extracting resources from the Earth being treated as income without a cost. The destructive costs to nature which follow from overusing nature's resources are not absorbed by the consuming actors, because impacts that are not priced are difficult for the markets to take into account. Activities that are destructive to nature such as burning fossil fuels are therefore underpriced because their environmental cost is not included in their price, and at the same time environmentally friendly activities such as new sources of renewable energy are overpriced because their future benefits to the environment are not incorporated in their price. (Ryan-Collins et al., 2013) Additionally, when inevitably the occasional recessions occur, regulations protecting the environment along with long-term planning for more sustainable development are often discarded to get through the crisis, which harms the environment even more (Jackson & Dyson, 2013).

Developing alternative ways to encourage people to behave more sustainably through financial incentives and possibly also reshaping parts of our monetary system is thus more important than ever (Barinaga et al., 2021; Dyson et al., 2016). One of these alternative ways that have been on the rise for a while now is community currencies, which I will dive into in the next section.

### 2.3. Community currencies and their short history

Historically the idea of having multiple different currencies work alongside each other is not very special at all (Wray, 2012). The earliest forms of community currencies were formed in the 1920s, but a specialized research field around the topic was not established until the 1980s (Scott et al., 2015). Since then, knowledge, general interest and practical experimentation around community currencies have developed fast. Over the last decades, the amount of different community currency projects around the world has flourished.



Community currency systems are built from the bottom up and they can both generate additional income and build an identity for communities, since they recognize an aspect of money that official currencies do not, the locality of it (Seyfong, 2001b). Community currency projects don't usually aim to replace or disconnect from the national currency system, they rather aim to complement or adjust it. Community currency projects around the world have many different names which makes it challenging to assess them, but according to Gomez (2008) what's common to all of them is that the currencies are interest-free, they are most often issued by a local civil-society actor as opposed to a national government, and the currency is issued primarily not for profit.

One of the best-known early examples of a community currency is called the "Miracle of Wörgl". It was a village in Austria that created its own local currency to deal with the effects of the post-war depression in 1932. The mayor of the town issued free money directly to the people who could use it to do business with local businesses and even pay taxes in it, but could not use it outside of town or redeem it for cash in the national currency. As a result, unemployment in the city was vastly reduced, the city's dilapidated infrastructure was repaired and the depression was lifted. The key element that made the currency so successful in boosting the circulation of money and thus boosting the local economy was demurrage, negative interest. The currency's value decreased over time as residents had to purchase a stamp to the script of their Wörgl money every month, which effectively encouraged people to use the money as fast as they could. However, despite its success, after a while the Austrian government stepped in and banned the use of the currency because it saw that Wörgl was issuing unauthorized money. This quickly led to the depression returning to Wörgl. (Barinaga, 2020)

Another early example, a successful one still to this day, is the WIR bank in Switzerland which created its own business-to-business currency in 1934. Today, the bank has a network of more than 60,000 members consisting mostly of SMEs (small and medium-sized enterprises). The members are provided with low-interest loans and marketing support along with a clearing system, where goods and services can be exchanged using only the bank's own currency. The clearing system is based on mutual credit – a business can only gain the currency if they give something to the network as well – and the community is an important part of the system. It connects businesses to other local businesses so that they can support each other, making the money stay local, and

prevents the money from flowing from local businesses to the pockets of big national or international corporations. The WIR franc also has a counter-cyclical effect, which protects small enterprises from the boom and bust of the national economy; one can see it in how the use of the currency increases during times of recession and decreases during economic growth. The WIR is a good example of how community currencies can have both economic and social effects: the network provides financial security but also a social network to lean on when the businesses need support. (Scott et al., 2015)

Another well-known form of a community currency is LETS (Local Exchange Trading Systems – sometimes used as a synonym for community currencies), which is a mutual credit system for individuals to use. It was developed in the 1980s in Canada and many still think of it as the most prominent and primary form of community currencies (Scott et al., 2015). LETS function as platforms where individuals can gain credits by advertising their own skills and services and exchange them with other members. The services can include helping a neighbor fix a bike, offering to take care of someone's children, providing help with someone's homework etc. – they're services not usually traded in the conventional market. People participating in the system maintain a record of transactions between each other using a designated local currency that only works within the system. They do not use traditional money to pay for the acts of service exchanged. By establishing a parallel currency, LETS helps to mobilize the potential of the community and create more social relations that benefit the whole community, while preventing cash shortages. (Seyfang, 2001)

The LETS are often associated with the ideals of empowerment and independence for the community, which is reflected in that the platforms are usually self-regulated and managed cooperatively, there's no central broker and the prices of the services are negotiated by the people themselves. The concept grew rapidly especially in the UK in the 1990s and by 2001, there were approximately 300 LETS-related networks in the UK (Williams et al., 2001). The emergence of such do-it-yourself currency initiatives like LETS has challenged the idea that monetary and financial innovation is solely controlled by governments or tied to the interests of corporations and banks. Instead, these currency experiments are utilized to promote the well-being of individuals, local businesses, and the broader communities they serve (Scott et al., 2015). Different variations

of the LETS have also been designed in for example New Zealand, Canada, Europe, and Australia (Seyfang, 2001).

Some community currencies are also time-based. Time-based currencies are most often used to recognize the value of activities that are usually neglected by the conventional economic system. In time-based currency systems, the work of one hour equals one unit of time. It's a network where the requests and needs of local people are connected with the skills of other people by a centralized broker. The system incentivizes people to help each other out in their community in a similar way to LETS and can "monetize" activities like looking after children, keeping company to the elderly, etc. These systems are especially associated with the social community-building objectives as opposed to economic ones. (Scott et al., 2015) An example of a time-based currency system is the Ithaca hours in the United States, which was founded in 1991 (Chen, 2022).

Grassroots currency projects became more widely known and significant in 2001 when the Argentinian peso crashed and a community currency project called the Trueque supported the survival of up to 10 million people. This gained significant international attention due to the unprecedented size, significance and success of the project (Gomez, 2008). Later, the Euro crisis also prompted many similar examples of currency initiatives, for example, the TEM in Greece and several others in Italy and Spain (Scott et al., 2015).

In addition to the economic and social ones, environmental goals have also become one of the objectives for community currencies. More and more community currencies designed specifically for that objective have emerged, some with the name of transition currencies. Some of the recently emerged currencies are Regiogeld, "the regional monies" in Germany, the Netherlands and Austria. They function in a larger geographical area than most community currencies, encouraging more environmentally sustainable supply chains and supporting local production (Scott et al., 2015). In the next chapter, I will dive deeper into the environmental type of community currencies and look at how they work to increase environmental sustainability.

### 3. Case studies: currencies with environmental objectives

For this chapter of case studies, I have tried to choose as many different kinds of community currencies reflecting environmental values as I could find. I have chosen the following five because there was considerable amount of literature available about them and they were at least somewhat notable in size.

#### 3.1. Beki

Some community currencies are made for strengthening the identity of a specific area. An example of this is the Beki, which has been in use in Luxembourg since 2012. Part of the Regiogeld, it aims to contribute to the sustainable development of the Redange Canton and to support the autonomy of it. The currency is fully convertible to the euro in a 1:1 ratio, but to discourage people to convert the currency completely to the euro in order to keep it in circulation its users have to incur a 5% fee when exchanging the currency (Konieczna, 2021). It's free for people to exchange their euros for the Beki and they can use the currency to buy various goods and services from local small and medium-sized businesses. The currency has been fairly successful. By 2016, 500,000 Bekis had been exchanged for euros. On their website it says that one Beki is exchanged on average five times its value before being exchanged for a euro (De Kär association, n.d.). When asked why they use the Beki, local business owners stress values like solidarity, autonomy, independence, social, economic and environmental sustainability, and wanting to be part of a future innovation. The main objective of the currency seems to be to boost the local economy and autonomy, but environmental values are also highlighted on their website and in the marketing of the currency. For example, when marketing the Beki it is highlighted that more local production means shorter transportation distances and less emissions. Another well-known Regiogeld is the Chiemgauer in Germany (Scott et al., 2015).

### 3.2. Eusko

The Eusko (meaning “Basque” in the Basque language, Euskara) is the leading community currency in the Basque country of France. It was launched in 2013 by a local nonprofit association Euskal Moneta, and quickly became the largest community currency in the country. It has been exceptionally successful and grew very rapidly especially in the first years after its launch. (Edme-Sanjurjo et al., 2020)

Eusko is traded at par with the euro and it does not incorporate demurrage, even though on their website Euskal Moneta stresses that the currency is made to circulate as much as possible. The currency is accepted by a range of local shops and merchants in 17 different municipalities in The Basque country. Unlike in the case of Beki, euros that are exchanged for euskos cannot be exchanged back into euros by individuals (Euskal Moneta, n.d.). Businesses can do this for a 5% fee. The commission fee revenues are used to fund the management of the currency and other community associations in the area. The merchants that accept the community currency are encouraged not to convert their euskos into euros but to spend it on another local business, which many of them do. The Euskal Moneta website claims 84% of the businesses accepting eusko have never converted their euskos into euros.

The currency was first issued in only 1, 2, 10, and 20 eusko paper bills. The money supply of Eusko expanded rapidly when a digital payment app (euskopay) was developed in 2017. That’s when the currency became the leading community currency in Europe, surpassing the Chiemgauer in Germany and Bristol Pound in England. Eusko had a capital equivalent to 1.5 million euros in circulation at the end of 2019. (Edme-Sanjurjo et al., 2020)

The objectives of the currency are to “relocalize the economy” by encouraging the purchase of locally produced goods and services, to strengthening the role of the Basque language and developing ecological and solidarity practices and social cohesion in the area. Its success has been examined a lot by Edme-Sanjurjo et al. among others. They found that one of the ingredients of it is the historically vibrant and lively atmosphere of activism and social initiatives in the Basque region, as well as the sense of community and shared identity the residents of the Basque country

have. In other words, the soil from which the currency grew was fertile socially and politically for an initiative like the Eusko that is aiming to relocalize the economy. People's shared values and strong social cohesion have built trust among the residents of the Basque country, which aided the acceptance of the community currency to a great extent. Additionally, the team leading the management of the currency was skillful in creating sustained growth over time and involving the public authorities in developing the project. (Edme-Sanjurjo et al., 2020)

### 3.3. NU-Spaarpas

Some community currencies aim to direct people's consumption to a more sustainable direction in the form of a loyalty program. For example, a community currency named NU-Spaarpas was piloted in Rotterdam from 2002 to 2003 and it rewarded consumers for environmentally friendly behavior. According to van Sambeek & Kampers (2004), the project was able to attract more than 10,000 users, had as many as 120 active vendors in its network and 1.5 million points issued at its peak. The users had two ways to obtain the units, first of which was to take the public transport in Rotterdam or to bring waste to waste sorting centers. The second way to obtain the units was to buy more environmentally friendly products from local shops; the currency worked similarly to a loyalty card. Users would gain points every time they would buy a product from a certified vendor of the network and the more sustainably deemed products they would buy, the more points they would collect per purchase. Examples of the products included organic food, fairly traded products, rental of things instead of buying them, repair services, etc. The points could then be used to buy other goods of the same quality or e.g. public transportation tickets with a discount (or activities to use the spare capacity of e.g. cinemas where no additional cost was incurred). The points would thus circulate in a closed-loop system. All goods were sold at a 1:1 conversion rate to euros for the vendor.

Vendors were attracted to the network by highlighting the benefit to their brand of having their products labeled as "green". They were able to convert their points to euros, even though this was discouraged by the project team – instead, the project team tried to encourage vendors to use their points to buy from other local vendors. Participating in the network was free for both consumers

and the vendors, as distributing the loyalty card to each home for free was believed to make the network expand the easiest. (van Sambeek and Kampers, 2004)

As a result of the NU-Spaarpas, the residents of Rotterdam returned used equipment and other waste to waste collection centers three times more frequently than before the project. The number of organic products offered by local vendors also increased over the course of the project. Seyfang (2006, p. 788) summarized the role of NU-Spaarpas in the market followingly: “If the market effectively incentivizes unsustainable consumption (by externalizing social and environmental costs), then NU is a prototype system which reverses those hidden subsidies by rewarding more sustainable behavior, simply altering the relative prices of sustainable versus unsustainable goods”. Seyfang also argued that part of NU-Spaarpas’s success was due to its easily understandable character for the consumers used to loyalty points.

The NU project was a collaboration of both the private and the public sectors. A private consultancy firm mostly designed and implemented the currency, however, the city authorities of Rotterdam also took part in running and funding the project, as did some local businesses and the EU. Eventually, after a year of operation, the political landscape changed and the party that had been funding the project was voted out of power, which led to the discontinuation of the project (van Sambeek and Kampers, 2004). Since community currency projects are often small, expensive and time-consuming to implement and they are done not-for-profit, this is a common risk to their continuation.

### 3.4. E-Portemonnee

Another community currency that works in a similar way to NU-Spaarpas is e-Portemonnee (e-Wallet) in the province of Limburg, Belgium. The concept is similar but the range of environmentally friendly activities that the community currency can be used for or gained through is wider and its objective is limited to changing behaviors, not consumption. The community currency works in 44 municipalities and the activities that it rewards include donating clothes to second hand shops, switching to a more environmentally friendly energy provider and setting up a compost for food waste (Scott et al., 2015). Another difference between NU-Spaarpas and e-

Portemonnee is that while the first was a collaboration of private and public sector authorities, the latter is almost exclusively run by the public sector and the role of private businesses is solely a funding one. E-Portemonnee doesn't even aim to economically strengthen the local businesses, its goal is rather just to encourage more sustainable behaviors for individuals (Bond Beter Leefmilieu, 2005 in Joachain & Klopfert, 2011). The project was set up by an NGO and it managed to gain public funding from the Flemish government a few years later. The project was launched in 2005 and had a little less than a year-long trial phase, after which it was continued in a growing number of cities. The system was designed from top down, but it was implemented and operated by the municipal authorities of the participating towns, which makes it a very locally connected system.

### 3.5. SolarCoin and others

In addition to the consumer reward systems, there are also other forms of community currencies that work to increase sustainability. One of them is SolarCoin, a cryptocurrency which has a design and technology similar to Bitcoin (and is also based on Blockchain technology). It was started in 2014 by a team of volunteers. The objective of SolarCoin is to incentivize the production of solar energy and ultimately to make it free. Individual producers of solar energy are rewarded with one SolarCoin per one MWh of verified electricity production. The energy producers can then trade the coins that they earn for other currencies in a cryptocurrency trading platform or spend the coins in businesses that accept them (even though their website doesn't list any businesses that would accept them yet) (Solarcoin, 2010). The system is decentralized and global. SolarCoin can also be exchanged for national currency such as the dollar, among other currencies. In August 2023, SolarCoin was priced at 0.00436003 USD and there were 64,835,375.67112732 coins in circulation (CoinMarketCap, 2023). However, it differs from other cryptocurrencies in that it cannot be bought, it can only be earned through producing energy. SolarCoin is also a self-funding currency, which solves the problem with funding that small volunteer-run projects face at a local level (Scott et al., 2015).

There are also other more extreme innovations regarding currency design that aim to increase environmental sustainability. For example, there have been proposals for designing an inflation free currency that is linked to a basket of different commodities like copper, gold and oil; when



the value of the basket falls the value of the currency would also fall. An example of this kind of a proposal is the Terra, created by a Belgian economist Bernard Lietaer (Scott et al., 2015). It would prevent the value of money from ever diminishing when the value of the commodities stays stagnant. The goal is to create a more trustworthy unit of exchange for financial actors to use which would be inflation free and could help stabilize the global economy (Ryan-Collins et al., 2013). Using this kind of a currency would however require large top-down reforms of the monetary system.

## 4. Analysis

### 4.1. The potential of community currencies for environmental sustainability

It is difficult to assess the potential effects of community currencies, because most of the experiments that have been done have been very small in scale compared to the economies that they work in. But from the cases above, we can conclude that community currencies contribute to environmental sustainability at least by incentivizing people to make better choices for the environment in their everyday lives, such as switching to a greener energy provider or buying more locally produced goods. When designed correctly and adapted well to the needs of each community – and most importantly, when becoming accepted widely enough – the systems can indeed make people’s way of living more sustainable. They do so by for example reducing the amount of waste produced, improving recycling, shortening the transportation distances, creating more demand for locally produced goods, and increasing the use of public transportation. Through community currencies, other forms of environmentally sustainable practices like producing cleaner energy can also be made more desirable.

However, considering that 71% of the global greenhouse gas emissions were produced by 100 big corporate firms from 1988 to 2015 (CDP, 2017), it is quite evident that solely making changes to the behavior of consumers is not going to lead to very major improvements for the global environment. The community currency systems are usually small-scale, local, and they involve mostly individuals and small to medium-sized enterprises. They do not regulate the activities of

big international corporations and even though they can work to move some of the profits that international corporations make to the local small businesses, due to the small size of the projects this is not likely to have a very big impact on the environment. Michel and Hudon (2015) studied the impact of a wide range of different community currency initiatives (48 in total) around the world, and they were able to identify only five that were specifically designed for an environmental aim and thus concluded that the impact of community currencies on environmentally sustainable development is going to be quite marginal. However, most of the projects that they studied were conducted before 2004, and they did not look at any projects that examined short-term community currency projects unlike my literature review. Michel and Hudon (2015) argued that the main impact of community currencies is going to be on the social sustainability side, but they also recognized that community currencies have some potential to stimulate local economies. This would reduce the need to import products from abroad and cut down transportation distances and pollution.

Laure (2022) argued that even though there is massive enthusiastic support for community currencies in the theoretical literature, empirical literature does not show that they would have lived up to their expectations as convincingly, and the great amount of support for community currencies is not completely justified. Blanc (2018, as cited in Larue, 2022) argued that most of the community currencies' potential benefits are indeed mostly potential and they depend heavily on how widely they are adopted in society.

Larue (2022) also argued that community currencies, if they were to be adopted widely, would pose a threat to social justice in their characteristic of limiting people's freedom to use money universally on whatever they want. This is because community currencies mainly are applicable in certain geographical areas or digital communities, and their core objective is to direct people's consumption towards e.g. more locally produced goods or products that do not pollute the environment. He even argues that this outweighs the potential benefits of community currencies, since there are better ways to tackle all the issues that community currencies aim to solve (such as environmental taxation). Larue's (2022) greatest issue with community currencies is indeed limiting the purchasing power of individuals, because he sees that for community currencies to become actually widely accepted, they would have to be mandatory for all individuals to use. This

would violate people's freedom to choose how and where they use their money, and according to his argument, the freedom to choose is one of the most important drivers of individual well-being.

I, however, think that the impact of separating money's functions into two different currencies on individuals' overall freedom can be questioned. Community currencies have never been aiming to replace the dominant national currencies we have in use today (Scott et al., 2015), and incentivizing people to use their money in a certain way is not supposed to take away the possibility of still buying goods from abroad. The example of Wörgl shows that a community currency system can become widely adopted in a community even if using the currency was completely voluntary, if the system is designed correctly and there is enough demand for it. When it comes to policies like environmental taxation vs. community currencies affecting people's freedom, another study argues the complete opposite to Larue's (2022) argument. Joachain & Klopfert (2014) examined the potential of a community currency system and government subsidies in motivating people to save energy in their homes. They found that while through a subsidy system, it would be easy to motivate people to invest in new technology to save energy, through a community currency system it would be possible to motivate people to do that and also to motivate them to engage in actions that have relatively low economic value in official currencies, like reducing their use of energy. This is because a community currency system can be decoupled from the official currency and policymakers can decide how much value each action that they are promoting has. For example, in the system that they designed for their study, lowering one's energy consumption is an essential way of obtaining the community currency units, which one can then use to buy goods that they otherwise would buy with the official currency. Joachain & Klopfert's (2014) study also suggests that a community currency system is more effective in motivating people to behave more environmentally friendly because, as opposed to a subsidy, it gives people freedom and the autonomy to decide how they engage in pro-environmental behavior. A community currency system can have a long list of different actions that one can perform to obtain the units. Even if all of them were serving the same end goal of being more environmentally friendly, the fact that the person has the freedom to choose what action they engage in gives them a feeling of choice, which is optimal for creating autonomous motivation for engaging in the system.

## 4.2. Implementing a community currency in a community

Designing a community currency is a task of its own and its potential impact depends heavily on the design. As we have seen, there are so many ways of designing a currency for different purposes, and it's important to tailor the characteristics of the currency specifically for each case of a community. What also affects if a community currency is successful is how it's implemented, because if people don't use the currency, none of its potential benefits will be realized. In this section, I will briefly look at how the designers of a community currency can motivate people to use it and make it successful.

How can people be motivated to start using a new currency? To answer that question, we first need to determine what motivation is. According to the self-determination theory (SDT) introduced by Deci and Ryan in 2000, there are two types of motivation: intrinsic and external motivation. Deci & Ryan (2000) also differentiated between four forms of behavioral regulation under external motivation based on the level of self-determination they carry: integration, identification, introjection and external regulation. Integration means a sort of an integrated importance of the activity to the self: the person acts not only because the activity is important in general, but also because they feel that it's a form of self-expression to them and it helps them reach their goals. Identification (the most self-determined form of external motivation) means that the person fully identifies with the activity because they know that it will help them reach their goals, and they attach inherent value to the activity.

If a person is acting out of intrinsic motivation or has integration or identification at the base of their chosen course of action, it can be said that they have autonomous motivation, which simply means that the person is acting out of personal choice. On the contrary, if a person is acting out of external regulation or introjection, it means that they have controlled motivation, meaning that their motives to do something are external to themselves. External regulation (the least self-determined type) means acting because of pressure coming from the outside that is related to the social context. In the case of introjection, a person has internalized this outside pressure and acts because they feel obligated to do so and if they didn't commit to the activity, they would feel guilt or shame.

Research on controlled and autonomous motivation has shown that when it comes to environmentally friendly behavior, autonomous motivation based on self-determination leads to consistently performing it more frequently, whereas controlled motivation, no matter how much of it there is, is not effective in changing the amount of pro-environmental behavior a person exhibits (Pelletier et al., 1998; Lavergne et al., 2010). This means that to encourage people to use community currencies designed for environmental objectives, it's important to try to create autonomous motivation for them. This also supports the view that voluntary community currency schemes would be easier to become adopted by communities and thus possibly more effective than mandatory community currency systems, because autonomous motivation is displayed in voluntary activities – if the activity is not voluntary, the motivation for it is likely to become external. Quite predictably, it also can be concluded that people who already care more about environmental values are easier to get on board with environmental community currency systems than those who do not find environmental values very important to begin with.

Scott & Dodd (2015) highlight the importance of effective communication when implementing a community currency. They recommend drawing out the primary and secondary audiences and targeting them through local communication channels, but avoiding overexposure as this could cause unrealistic expectations to form for people not yet engaged. They stress that from the beginning it's especially important to educate potential users on what community currencies are and what they can do, as many people have possibly never heard of community currency systems before. Making it clear for different actors what the benefit of the system is for them is also crucial as the reasons for joining a system are different for businesses, individuals and policymakers.

When designing the messages that will be used to motivate people to join a community currency system, Moller et al. (2004) suggest that it is important to come up with a meaningful rationale for joining instead of pressuring people to act out of fear or guilt, which is in line with the SDT theory. Their research suggests that each human has a basic need for autonomy and providing a set of meaningful options to choose from – but not forcing one to choose – is more effective in creating lasting behavioral change than through a controlling approach. Giving people the experience of choice – which in this case means providing them with options that allow people's values and

interests to be engaged – makes it more likely that they will internalize the regulation of behavioral change.

Based on this literature, I would definitely argue that to make a community currency system effective, participating in it has to be voluntary and there has to be a lot of information for people on why to join. When trying to motivate people to join a new system, it's important to connect the rationale to values that are important to them. This could include loyalty to their community, caring for the environment, pride in their language, making healthier choices for their family, or caring for others.

## 5. Conclusion

In conclusion, community currencies can contribute to environmental sustainability by for example encouraging people to increase recycling and buy more locally produced goods. They can also work to reduce transportation distances and thus reduce emissions. How money is designed influences what is valued and thus desirable in society, and some community currencies aim to redirect that to a more sustainable direction (Ryan-Collins et al., 2013). Some currencies for example aim to make environmentally friendly practices like producing cleaner energy more desirable (Scott et al., 2015).

Community currencies are a rising phenomenon worldwide with different designs and objectives. A number of academics (e.g. Barinaga et al., 2021; Brooks, 2015; Scott & Dodd, 2015) consider that they have potential, however, some argue that the greatest part of it is likely to be in creating social sustainability instead of economic or environmental sustainability (Michel & Hudon, 2015). According to Barinaga et al. (2021), community currencies' greatest potential is not in creating a system to replace the current one, but in teaching the general public that money can be different and it can be designed better. The potential is in reminding society that everyone has a shared responsibility in building healthy real local economies and in helping to develop socio-economic practices that actually serve our communities.

One of the biggest challenges community currency initiatives face is gaining public acceptance and circulating enough to deliver their full benefits. Projects run on a small budget by NGOs at a grassroots level can struggle to gain publicity. When implementing a community currency, it is important to consider the unique needs and characteristics of the community that it is being designed for (Scott & Dodd, 2015), to market the currency in a way that targets values that are important to people (Moller et al., 2004) and to keep the communication about the functioning of it as clear and simple as possible (Scott & Dodd, 2015).

Limitations of my research include that I only used literature written in English and that most of the example cases that I examined closer were experiments done in Europe. More empirical research and larger scale experiments are needed to evaluate the effects of community currencies.

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