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**TOOLS TO ACHIEVE A
SUSTAINABLE DEVELOPMENT**

THIS IS THE MUTUAL CREDIT CLEARING SYSTEM

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Sustainability.School Series
Tools to Achieve Sustainable Development

Mini eBook

This is the
Mutual Credit Clearing System

by

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Introduction

We are living a transitional period where we will see the current banks and financial institutions be replaced by new companies that will perform the same services offered by the mentioned institutions with more efficiency, more transparency, less bureaucracy, less cost, and being less vulnerable to financial crises.

It is a special moment because we can decide what kind of institutions we want generating the money we need to solve social and environmental problems, the ones we consider important within a given spatial and temporal context.

Among such initiatives, there are some startup companies that are using the innovative technology of the blockchain. For those who are unaware of this term, blockchain is basically a record of all known system transactions, as a great book where transactions are recorded chronologically and in a public way. This important book is not kept under lock and key in a safe, but it is shared decentralized with all users of the system. Everyone has a copy of the blockchain. The chain is not controlled by anyone in particular, but by a multitude of computers providing distributed computational power. The blockchain is the evolution brought by Satoshi Nakamoto in his work "Bitcoin: A Peer-to-Peer Electronic Cash System."¹

The systems utilizing such technology do not require the existence of institutions that will soon be considered museum pieces. Among them is the central bank of a country, as well as other banks.

In addition to blockchain, there is a system that, due to its simplicity and flexibility, can be used by people to solve many problems, without the need to use the money created by banks. Such system can be enhanced using blockchain technology. What kind of system is this? It is the mutual credit clearing system.

Is this system as innovative as the cryptocurrencies? In reality, the mutual credit clearing system has already been used for more than 80 years by a group of small and medium-sized entrepreneurs in Switzerland. The mutual credit clearing system makes businesses much less dependent and vulnerable to money manipulations executed by a central bank or other financial institutions. There are other countries using the system as well. It is being used by some communities to solve several problems at different spatial scales, that is, from neighborhoods to countries.

Since the world's financial system is declining and will soon give in to new technologies, it is important that people, who wish to improve our planet's life and solve social problems, learn how to use and implement this system immediately.

This mini eBook explains in plain language and through examples the fundamentals of this important system. Good luck! To learn more about similar innovations visit www.sustainability.school

What did the Swiss do? Understanding the mutual credit clearing system

In this mini eBook you'll discover the system that has been used by the Swiss for more than 70 years: the mutual credit clearing system. If you find that name a little bit intimidating, don't worry. In this mini ebook you'll see that the idea behind it is really simple and powerful.

Once people understand the mutual credit clearing system could be adopted system to solve our environmental and social problems, both locally and globally. I say this because the system is simple, transparent and flexible; it can work in different situations. The fact that commercial transactions occurring in this system can be made without the use of money created by debt, adds to such features.

You will learn the fundamentals of this successful system, which already survived several financial crises without being affected and continues, benefiting thousands of small and medium-sized companies, and their employees.

Small and medium-sized enterprises

Small and medium-sized enterprises are the ones that generate more jobs in an economy. Many families depend on them to live. Maybe your job depends on one of them, too.

Because of its social importance, such companies need to be less vulnerable to financial crises. During the crash of 1929, thousands of small and medium-sized enterprises had financial problems (several failed). As a result, millions of people lost their jobs, generating a catastrophic social situation in countries like the United States and, among others, Switzerland.

Some of the main problems affecting such enterprises were the excess of debt and the shortage of available credit to continue their business activities.

As you know, 2007 was the start point of the most recent financial crisis in the United States, which again led to thousands of small and medium-sized enterprises to have less credit available, causing them financial problems and generating millions of unemployed people. You must be thinking that just like in 1929, the crisis of 2007 also affected European countries. This is correct. However, this time in Switzerland, the small and medium-sized enterprises continued taking credit, although from a different source than traditional banks, enabling them to continue with their activities normally, and keeping people's jobs.

The small and medium-sized enterprises of Switzerland learned from the 1929 crisis and created a system with a new structure that allows them to have access to credit, even when financial crises occur, whether originating within their own country or elsewhere. They have the WIR, a second currency which is available to the owners of small and medium-sized enterprises.

Now, let's talk in more detail about the WIR, its context, and what characteristics have enabled its existence for more than seventy years.

WIR Bank

Some years after the financial crisis in the United States, more specifically, in 1934, the economy of Switzerland was in serious economic trouble: thousands of people suffering from unemployment, and small and medium-sized enterprises in financial difficulties, among others.

In that context, 17 business owners decided to take action and find a solution, instead of waiting for some government aid and before they went bankrupt or had some other difficulties. They created a new credit generation system that allowed them to have money, even when traditional banks gave them very little or no money because of the financial crisis.

The solution was to create a credit cooperative based on the mutual credit clearing system. The cooperative was called WIR (abbreviation of *Wirtschaftsring*, which means economic circuit). In addition, the word WIR in German means 'we.' WIR is a complementary currency created by the business owners. They defined that 1 WIR = 1 Swiss franc; but the system's rule is that the conversion between WIR and the Swiss franc is prohibited.

The WIR has helped small and medium-sized enterprises during the financial crises that affect conventional credit availability (in Swiss francs). In 1936, the cooperative obtained a license to operate as a Bank, which enabled it to expand its services in 1998 to offer credit in Swiss francs. Since then, it is called WIR Bank.²

It is important to note that one of the WIR creators, Werner Zimmerman, learned a lot from the ideas of the economist Silvio Gesel³. Without such ideas, probably the WIR would have never existed.

Working as a mutual credit clearing system from the beginning, the WIR Bank management requires that each participant give a guarantee in order to be able to participate in the system. This guarantee is intended to protect participants against companies that, for any reason, may break system

rules (e.g. keeping its accounting in negative numbers for a period longer than permitted).

To avoid possible abuse by some participants, there are rules and monitoring of the administration, as well as transparency, through internal audits and with the publication of the cooperative's financial statements, for example. These actions have allowed the WIR Bank to help small and medium-sized businesses to overcome financial crisis. WIR is a complementary currency with the purpose of promoting the circulation of goods and services among members of the mutual credit clearing system.

Each participant is free to stipulate the amount of WIR that it accepts in exchange for their product or service. For example, let's assume that the product costs 200 Swiss francs. The business owner may accept half (50%) of the payment with WIR, or other desired percentage. All participants have access to a database to search and offer products or services to other members of the system.

Currently, more than 60,000 small and medium-sized enterprises benefit from this system based on mutual credit clearing.

The WIR experience is being reproduced in other European countries and the US.

Mutual Credit Clearing System

Mutual Credit Clearing is simply an accounting process in which credits offset debits, in other words, sales in relation to purchases. When you sell something, the balance of your account is increased (credited). When you buy something, your account balance is decreased (debited).

Do you know what the definition of money is? Well, money is an agreement made by a community (a group of people) who decide to accept a standardized item (anything) at minimum to interchange their products and services.

In the mutual credit clearing system: do you know what is that ‘something’ that people use in their purchases or sales of products and services? That ‘something’ is the trust that participants will continue selling and buying products and services needed by the other participants of the system.

In other words, those who participate in the system know that by selling their product, they can use the retrieved credit to buy additional products and services from other participants. In the same way, the person that makes the purchase knows that he or she can sell products and services in the system, and is aware that other participants may purchase it (assuming that products and services are good in quality and price).

People who decide to create a mutual credit clearing system can create an agreement, and establish that a commercial transaction (buy and sell) between two people is made according to the following:

1. Each person must have a system account.
2. The two people should agree on the price of the product or service, as well as its quality.
3. The amount of the sale is credited on the seller’s account.

4. The amount of the purchase is debited on the client's account.
5. If a person has debit, he/she must sell something to compensate it.
6. If a person has credit, he/she must buy something to compensate it.

You will see some additional details on the following example.

Our mutual credit clearing system

Let's assume that you, I, and some other people, participate in a system of mutual credit clearing, whose currency name is Sustento, and its symbol is \$T. Each \$T is equal to \$1. We use the dollar just as a reference. Depending on the decisions of the people involved, the Sustento may or may not be converted into another type of money like the dollar. Both you and I are now in the system and each of us has an account that, as a start, has the following structure:

Transaction	Sell	Purchase	Transaction Balance (<i>sell + purchase</i>)	Global Balance
0	0	0	0	0

The account simply shows, for each commercial transaction, how much was sold and bought, the transaction balance (sale plus purchase) and the Global balance (balance of the current transaction plus the balance of the previous transaction).

If that is confusing at first glance, the following examples will clarify it. My account and all of those involved in the system have the same fields. Upon entering the system, the values of your account will also be equal to mine, all fields equal zero because you haven't done any transaction yet, purchase or sale.

Now let's go to our first commercial transaction. Let's assume that I know how to mow the lawn and I charge my clients 25 Sustentos to work an area of 500 m². You need to clean your backyard, which has 500 m² of lawn. We talk and agree on the terms. I do the service and you pay me, and then we continue with our lives.

I sold my service for 25 Sustentos; that is why my account ('sales' column) is credited with 25. As I have made no purchases so far, the column 'purchase' has a value equal to zero. The balance of the transaction is equal to 25 ($25+0$) and the overall balance is also 25.

My account after mowing the lawn in your yard:

Transaction	Sell	Purchase	Transaction Balance (<i>sell + purchase</i>)	Global Balance
1	25	0	25	25

Now, let's take a look at your account. You, on the other hand, bought my service for 25 Sustentos, so your account will be debited the value of - 25; the balance of the transaction will be -25 ($0 + -25$), because you did not do any sale transaction. The overall balance will also be equal to - 25.

Your account after I mowed the lawn on your yard:

Transaction	Sell	Purchase	Transaction Balance (<i>sell + purchase</i>)	Global Balance
1	0	-25	-25	-25

As you have made a purchase and you now have a negative balance in your account, you will need to sell something (product or service) for someone who participates in the system, which can be me or other person, in order to compensate the negative balance in your account. For example, if you are a math teacher, you notify the system that you do that, you leave your contact so that people can communicate with you and you wait for interested people to contact you.

On the mutual credit clearing system, participants should help those with negative balance to turn it into positive; that's why people should have something to offer, and provide quality services with fair prices.

For that reason, all participants' accounts are visible to others. That is good and useful for two main reasons. The first will be explained below, and the other later in the book when we talk about the debit limits in the account.

The first reason is that if someone needs math lessons and there are other math teachers with positive balance and you have negative balance, the person will buy your services (given that the price and quality of your services are good), so that you can offset your balance, that is, to cancel your negative value (debit).

Let's assume that John wants to take math lessons. You offer each lesson for 35 Sustentos. John needs four lessons and buys your services. Let's first take a look at your account and then John's.

You account after having sold four lessons to John (transaction 2):

Transaction	Sell	Purchase	Transaction Balance (<i>sell + purchase</i>)	Global Balance
1	0	-25	-25	-25
2	140	0	140	115

The process is similar to that explained above, you sold 4 lessons, each for 35 Sustentos, which in total add up to 140; then your account is credited the value of 140 in the sales column. You didn't buy anything in that transaction, therefore no value is debited, and your sales column is equal to zero. The balance of the transaction is 140, and the overall balance is 115, that is, the sum of transaction 1 balance, plus transaction 2 balance ($-25 + 140 = 115$).

This is how John's account looks after the transaction:

Transaction	Sell	Purchase	Transaction Balance (<i>sell + purchase</i>)	Global Balance
1	0	-140	-140	-140

John can also sell something. For example, he's a software developer and advertises it to the system. People who need that kind of service can buy it from John, especially because he has a negative balance in his account.

Let's assume that Ana has a small grocery store and needs software for her business management. She contacts John, they agree on the service's price and the transaction is performed, that is, John sells his software development services to Ana for 500 Sustentos. At the same time, John takes advantage that Ana has a supermarket and makes a purchase of 200 Sustentos.

In that case, John's account will be credited with 500 in the sales column and debited -200 in the purchase column; the transaction balance is equal to 300 (500-200), and his general balance is equal to 160 (-140 + 300).

John's account after having sold the software to Ana (transaction 2):

Transaction	Sell	Purchase	Transaction Balance (<i>sell + purchase</i>)	Global Balance
1	0	-140	-140	-140
2	500	-200	300	160

Let's see Ana's account. Note that her first commercial transaction was simultaneously a sale and a purchase.

Ana's account after having negotiated with John:

Transaction	Sell	Purchase	Transaction Balance (<i>sell + purchase</i>)	Global Balance
1	200	-500	-300	-300

Ana's account is credited with 200 in the sales column, and charged - 500 in the purchase column, the transaction balance shall be -300 and the general balance equal to -300.

I imagine that these examples are enough for you to understand the mutual credit clearing system. As you should have noticed already, is nothing more than a system in which sales offset purchases, and it works perfectly when special care is taken to prevent the actions of people who want to unduly take advantage by abusing the trust of others.

Just like the 17 entrepreneurs who created this system for their purposes, any group of people can do the same, in order to meet social, environmental, or socio-ecological objectives. People may form an association, a cooperative, a group of purchases and sales within a neighborhood, city, country, or several countries.

It is important to clarify that anyone who participates in the system must offer quality services at fair prices; otherwise, people will prefer to buy products from other participants. This means that there may be individuals or companies that will get out of the system because they offer products or services of poor quality or at unfair prices.

Another very important subject is what can be done to avoid that people continue to have debit for a long time, that is, those who are compulsive buyers, and that do not sell anything. Participants can set a maximum limit of negative balance for individual or company accounts, and a time period for the balance to be offset. After that time, whoever already has a negative balance must find a solution for the problem, and in extreme cases, might need to leave the system.

To avoid problems with people who only want to take advantage of the system for their own interests and then sign out (there have been cases like this), the system administration establishes certain rules; for example, requiring

guarantees to newcomers, so if there is a problem, the warranty would be used to offset the person's debit.

As economist Thomas Greco Jr. explains it in his book "The End of Money and the Future," a rule that can be adopted is that the maximum negative balance can be determined by the average of three months of that persons's sales. But, if the person may fail for any reason, the administration must possess sufficient funds to address such problems. Such funds may originate from various sources. For example, companies, NGOs, and individuals can pay a one time admission fee, or a fee could be charged with each transaction, or an annual (or semi-annual) fee for system maintenance, among other ways. The fee can be paid with virtual currencies, such as, bitcoin or other kind of money (dollar, reals, colones, euro, etc).

There are many advantages of this system; for example, in practice, it allows participants to trade without the need for contracting debts and interests. During a financial crisis the availability of credit is not affected, and the model can be adapted to various situations, whenever people learn its operation.

How a Mutual Credit Clearing System can help in the solution of socio-ecological problems?

Let's assume that for a given watershed there are both rural and urban areas. The urban water supply depends on the native waters of the rivers that pass through rural properties, which we will assume are deforested and suffering from erosion. The landowners do not have enough financial resources to reforest some hectares on their properties to protect the quality of rivers.

On the other hand, the urban population needs a clean water supply; they also need healthy and cheap food. What would be a possible solution?

What if the farmers and some urban dwellers created an association or cooperative of mutual credit clearing? This association can be open to farmers, business owners who live in the urban area, professional freelancers, NGOs, and ordinary people, for example.

Farmers can buy the plants they need to reforest their areas, from nurseries in the city. And, to offset their debts, they can sell their products to the other participants; nursery owners can buy the products they need. This process is repeated as many times as needed until sales offset purchases.

Let's continue with this example. We can assume that there are unemployed people in urban areas, who can sell their services to agricultural producers, they can go and plant trees, take care of the species used to reforest properties, and can use their earned credit to buy other products and services from the system participants.

The association's administration can set the measure of value that will be used as a reference. For example, the currency can be similar to the Swiss WIR: 1 Sustento (\$T) equals 1 dollar. It is also possible to stipulate that the

measure of value is one hour: 1 \$T is equal to 1 hour; and the following may also be done: 1 \$T equals 1 hour that's worth \$10.

Consider any average neighborhood. Let's assume that the business owners in that place, as well as the unemployed and employed people participate in the mutual credit clearing system. Each person has an account in the system, just like the example above. Each account has fields to enter the transaction number, credits, debits, the transaction balance, and the overall balance.

Those participants make an agreement to determine the prices of each product and service that will be marketed in the system. At the end of the day, unemployed people could have credited in their accounts the value gained for some work they do (for example, taking care of recycling or cleaning parks).

With that credit, they can go to commercial establishments in the area, preferably in the off-peak hours, to buy products and services they need. Moreover, traders can use credits to purchase products and services from other participants of the system.

People who were unemployed can offer products and services to other participants, in addition to the work carried out. For example, a person who was unemployed now is working on the conservation of the parks. In addition, that person knows how to play guitar and likes to teach. He or she can give guitar lessons in his free time and offer his services to other participants of the system.

As you can see, the mutual credit clearing system allows connecting unused resources and unmet needs of the neighborhood, and helps solving environmental and social problems. It also allows participants to use their physical and intellectual abilities by offering products and services to other participants of the system.

The mutual credit clearing system solves neighborhood problems without needing for one person, company or government to go into debt. It increases people's power to solve their problems in a quick, creative, and dynamic way.

The advantage of a mutual credit clearing system is the possibility of direct transactions without using the common currency (issued by the central bank), allowing those who use it, to save the scarce money for other purposes. The possibilities are endless; simply use your creativity and several possible solutions will emerge.

There is a wonderful tool, available for free, that makes implementing a mutual credit clearing system very easy. It is called Cyclos⁴ and it is basically a mobile and online payment open source software, that enables the creation of an online mutual credit system. Cyclos supports a wide variety of implementations, including bartering, campus card systems, Time Banks, remittances and micro finance initiatives, and is currently available in English, German, Spanish, Portuguese, French, and Dutch.

Every community can use this system to solve their problems, just like those 17 business owners in 1930s Switzerland did. For that, more people need to know that the system exists. So, if you liked the idea and you feel that you can help, it is important that you learn more about the topic, that you share these ideas with your friends, colleagues, and neighbors. Talk to them and organize meetings (in person and online) to discuss what problems could be solved by using the mutual credit clearing system.

Let's keep in touch!

We are nearing the end of this mini eBook. The good news is that now you know how the mutual credit clearing system works.

Now, you know that sustainability is achievable.

We invite you to discover which experiences with new types of money are being developed in your country. [We challenge you to learn more about money and how it can be created.](#)

Do you want to contribute to build a new system to promote sustainability? We are gathering ideas from people like you to create a system based on our shared environmental and social values, to promote good actions and conservation. Stop by and let us know what you think. [Join the conversation now through Slack.](#)

Let's keep in touch!

We hope to meet again, soon!

Let's keep in touch!

About the Author



Ranulfo Paiva Sobrinho

Consultant, Researcher, Author and co-founder of Sustainability School

Ranulfo was born and raised in the beautiful estuarine archipelago of Cananéia city in São Paulo State, Brazil. This influenced him to take bachelor's degree in Ecology from the São Paulo State University (UNESP) in 1994.

Since his first job in 1995, Ranulfo have been involved in projects with aims were to promote at the same time social, economic and environmental development. Due this fact, he is a pragmatic professional that applies methods with a solid theoretical foundation and that can be applied to solve socioecological problems.

He has a PhD in Economics from the Campinas State University (UNICAMP), but he is not adept to the main economic ideologies. He believes that to solve the complex economic, social and environmental problems that humanity is facing, we need a mix of pragmatic ideas, knowledge that comes from different scientific areas and real life practices.

He strongly believes that once people learn about money and learn how to design new types of money they will use this knowledge to create new sustainable systems to help them solve the ecological, economic and social problems they want without being dependent of the current obsolete financial system.

Besides being a writer, currently, he is (a) the co-founder of Sustainability School; (b) Associate Researcher at the Institute of Economics (UNICAMP) working with Ecological Macroeconomics and Decision Support Systems to Solve Socioecological Problems; (c) member of both International Ecological Economics Society (IESS) and Meso American Ecological Economics Society (MEES); (d) consultant for corporations like EMBRAPA (Brazilian Agriculture Research Organization).

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Notes

¹ <https://bitcoin.org/bitcoin.pdf>

² <http://www.wir.ch>

³ https://en.wikipedia.org/wiki/Silvio_Gesell

⁴ You can learn more about Cyclos here: <http://www.cyclos.org/>