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Social currencies in social and solidarity economies:
innovations in development

Impact of complementary currency for sustainability: an integral approach

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ABSTRACT

Implementation of monetary innovation for social innovation network development may be appropriate as a reliable exchange and an incentive system for community value co-creation between stakeholders and sustainable regional development. Nevertheless, some questions remain: (1) What context and objective favour the implementation of monetary innovation? (2) How to enhance and evaluate the impacts of such innovations? To contribute to these research questions, a synthesis of reference assessment frameworks standards, such as Sustainable Development Goals, Global Reporting Initiative and Impact Reporting and Investment Standards, will allow us to not only set up a new framework with defined indicators but also to qualitatively assess a recently launched currency, the Léman, as a case study. Beyond policy intervention, networks of individuals and organisations may integrate this bottom-up methodology, an impact assessment matrix with an integral approach and continuous improvement process, to reach economic, social, environmental, and anthropologic impacts to evaluate the interest of supporting such initiatives. Further research is needed to develop this impact assessment framework.

KEYWORDS

Sustainable development, impact assessment, continuous improvement, integral approach.

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INTRODUCTION

This research paper deals with an important topic on the social and complementary currency (SCC) literature: how to assess monetary innovation and what are their impact in terms of sustainable development? Our proposition is to synthesize existing assessment frameworks to set up a new methodology of impact evaluation with qualitative and quantitative evaluation indicators. To adapt this impact assessment matrix to the social currencies bottom-up movement, we will integrate an integral approach and continuous improvement process.

The purpose is to assess the Léman case study in terms of economic, social, environmental, and anthropologic impacts in order to evaluate if these initiatives match with sustainable development purposes such as local production, responsible consumption, social cohesion, open governance, plurality of socioeconomic actors, and common goods management.

(1) What context and objective favour the implementation of monetary innovation? To answer this first question, we will design an impact assessment matrix based on a synthesis of existing assessment frameworks. (2) How to enhance and evaluate the impacts of such innovations? To answer this second question, we will evaluate a recently launched currency thanks to this new impact assessment matrix.

1 IMPACT EVALUATION PURPOSE AND FRAMEWORKS

1.1 PURPOSE OF IMPACT EVALUATION

For the development of social and solidarity economy (SSE), a monitoring and evaluation framework (M&E) helps stakeholders to develop a shared understanding of what they are trying to accomplish through a Theory of Change, or Logic Model, such as inputs, activities, outputs, outcomes, impact, see annexe 1 page 22. Programs can thus respond to the stakeholders needs and measure the performance, or planet and society advantage. A good impact analysis is essential for financing institution to trust the socio-environmental impact returned on their investment. Indeed, impact assessment and impact reports are necessary to receive financing, especially through impact philanthropy and through donation fundraising (ANDERSON, 2005; UNPD, 2009; THE WORLD BANK, 2009; BINDEWALD *et alii*, 2015). Those donations often imply a counter-donation of qualitative and quantitative information about the impact of the project. Indeed, a study in 2008, based on data from 165 systems in 28 countries, found 74% of CCS being dependent on external financing: only 9% achieve it thanks to internal service taxes and 65% rely on voluntary institutional or individual financing (DEMEULENAERE, 2008).

Financial funding is necessary for social and monetary innovation, according to the EUR/BRL exchange rate of September 2015 equal to 4.455, in order to (NEW ECONOMICS FOUNDATION *et alii*, 2015):

- Receive the necessary funding as a loyalty program: EUR 200'000 to 1 Mn, or BRL 891'090 to 4.455 Mn, for 3-5 years with 15% to 20% return on investment, 1 broker per 100 SME for 20 monthly exchange incentive.
- Reach the quantitative tipping point for a perennial and profitable business model: EUR 50 to 1'000, or BRL 222 to 4'455, entry fee, EUR 20 to 150, or BRL 89 to 668, monthly subscription, 5% commission transaction.
- Meet the qualitative diversity of stakeholders for a meaningful and useful mean of exchange: 500 to 5'000 SME, 5'000 to 50'000 users, 10% transaction volume, earn and spend budget for basic income housing, food, transport.

Impact assessment is not only the core business of innovation in sustainable finance but also the fundamental research of social and monetary innovation (LIETAR *et alii*, 2012):

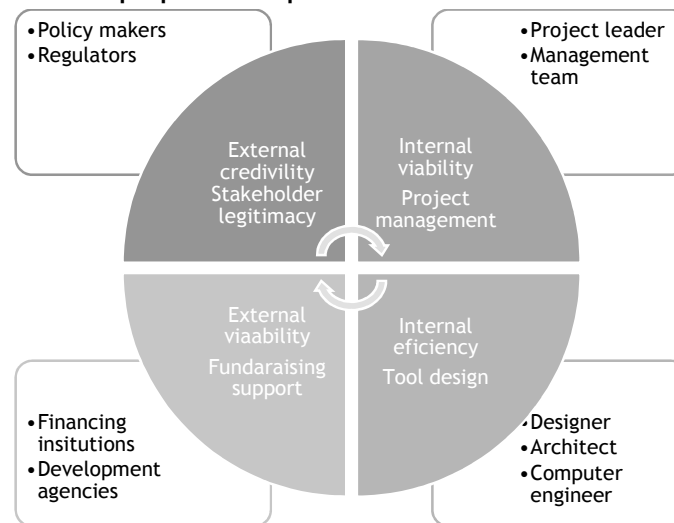
- Continuous improvement (innovation, design thinking).
- Tool for a vision (currency as a service, future back casting).

- Plurality (resiliency, economic stability).
- Open code (participative democracy, money as a common good).

Here are the interdependent reasons for the deployment of evaluation standards in impact assessment (BINDEWALD *et alii*, 2015):

- Internal viability: improving project implementations in regard to operational, structural and organizational aspects.
- Internal efficiency: improving uptake by users and reduce overheads and transaction costs.
- External viability: attracting funders and support and widen the recognition.
- External credibility: proving impact and efficiency to international organizations and the public sector.

Figure 1: need and purpose of impact assessment and evaluation frameworks



Source: NEW ECONOMICS FOUNDATION *et alii*, 2014.

For example, beyond alternative energy and carbon emission efficiency, eco-friendly behavior is a behavior which reduce the ecological footprint or environmental impact. Microcredit and digital cryptocurrency are nowadays a worldwide issue, such as mobile payment, universal dividend, endogenous finance, social and solidarity finance, prosperity without growth, and steady state economy. Nevertheless, these successful social technologies have a lack of sustainable impacts fulfillment. To go beyond this limit, the implementation of monetary innovation in a social innovation network aims to improve economic, social, environmental and anthropologic impacts between businesses and consumers, see appendix 1 page 15. Monitoring and evaluation of these successful innovations is essential. Consequently the improvement of currency design and impact assessment is needed for theses sustainable incentive systems. Finally the perceived value proposition in the eye of our customers are linked with this impact improvement, like, for example:

- Activate value co-creation between stakeholders and thus increase local sustainable production and consumption turnover by 22% (RUDDICK, 2011).
- Motivate eco-friendly behaviour by 5% which lead to resource and energy consumption reduction like ecological footprint (SAMBEEK *et alii*, 2004).
- Strengthen community empowerment through trust and solidarity for 91% of users to reach a better well-being (SEYGANG, 2001).

It occurs in developed cross-border region with economic stability and financial health like the Monnaie Grand Genève, Sol-Violette and WIR Bank projects in Europe; in developing region to keep locally the

wealth circulation provided by microcredit, a financial inclusion system, like Banco Palmas, C3U and UDIS in Latin America; or to incentive eco-friendly behaviour and resource consumption reduction like the Nu-Spaarpas, EcoElce and Eco-Pesa. This innovation in sustainable finance is based on currency design and impact assessment of incentive systems to increase sustainable production and consumption, strengthen community empowerment, and activate value co-creation between stakeholders in a network of organizations such as transport, tourism, property international sectors.

1.2 SYNTHESIS OF REFERENCE ASSESSMENT FRAMEWORKS

Concerning the field of social and complementary currencies, among a global review of 406 papers, listed in the bibliography of community currency research called CC-Literature, and 105 papers, published from 1997 to May 2013 in the 17 volumes and 2 special issues of the International Journal of Community Currency, respectively 76 and 13 papers were dealing with pertinent impact analysis, which means 18.7% and 12.4% (BINDEWALD *et alii*, 2013). Nevertheless, it still remains scarce compared to the fields of sustainable development, finance and management, with some compendium of 150 assessment methods of social impact, 35 measurement approaches in sustainable finance, 25 indexes of sustainable development of nations, and 78 social responsibility management tools (IRIS, 2015; PLACE, 2012; SVTG, 2008; FOUNDATION CENTER, 2012; LOUETTE, 2008; LOUETTE, 2009).

Among these various empiric analyses, which evaluate the positive, neutral or negative impact of social and complementary currencies for sustainable development with a balanced repartition and conclusion, 4 reference studies on evaluation research, from which 3 international literature review and 1 currency assessment framework proposition, should be analysed in details. This last proposition of a matrix of performance indicators made by *Instituto Palmas* and *Núcleo de Economia Solidária da Universidade de São Paulo* in 2013 analyse, through field survey, the scope of a specific social and complementary currency type called Palmas, the geographical region of Fortaleza in Brazil, from June 2011 to July 2012 (INSTITUTO PALMAS *et alii*, 2013; DITTMER, 2013; SEYFANG *et alii*, 2013; MICHEL *et alii*, 2015). All of these studies encourage the standardisation of impact assessment methods to strengthen the legitimacy of social and complementary currency in achieving sustainability for stakeholders (PLACE *et alii*, 2013a):

Table 1: analysis of social and complementary currency evaluation research

Impact link	Study reference	Data (period, region, type)	Used model (data sources)
Positive (impacts): High social sustainability, limited economic benefits, few environmental outcomes	MICHEL <i>et alii</i> , 2015	1993-2013 World: Service Credits Mutual Exchange Local Currencies Barter Markets	From 1'175 to 48 studies Systematic literature review: CC-Literature CC-Library Reference searching
Neutral (objectives): Mainly economic and social goals, few pro-environmental objectives	SEYFANG <i>et alii</i> , 2013	1996-2011 World: Service Credits Mutual Exchange Local Currencies Barter Markets	From 3'418 projects Systematic literature review: Empirical studies Literature review Practitioner interviews Advisory panel
Negative (monetary reform): Limited by tax integration, business model and changing policy agenda	DITTMER, 2013	1996-2013 World: LETS-Local Exchange Trading System Time Banks HOURS Convertible Local Currencies	From 126 studies Academic literature review excluding: Barter Markets 4 th Generation Scheme

According to the previous and non-exhaustive research, cited above, on main existing and reference assessment frameworks, or impact measurement and reporting initiatives, the ones used for the synthesis and chosen according to their field (sustainable development, finance, management), logic model (activity, output, outcome), degree of consensus and standardization (number of supporting countries or institutions), recentness (date of release), and integration of recommendations and standards (from other reference studies), are the following:

- SDG - Sustainable Development Goals, see annexe 2 page 23 (sustainable development and well-being, outcome, 193 countries, 2nd of August 2015) in the continuation of Agenda 21 and Millennium Development Goals by integrating (SDG, 2015a; SDG, 2015b):
 - ❖ Addis Ababa Action agenda of the Third International Conference on Finance for Development (AAAA), with recommendations for Social and Solidarity Finance such as crowdfunding, complementary currencies, ethical banks and financial cooperatives (AAAA, 2015; UNIATF, 2015).
 - ❖ United Nations High Level Meeting on Happiness and Well-Being (HWB), with recommendations of Beyond GDP (ROYAL GOVERNMENT OF BHUTAN, 2012).
 - ❖ Beyond GDP: measuring progress, true wealth, and the well-being of nations (BGDP), with recommendations of sustainable economy such as reforming macro-economic accounting, reversing the culture of consumerism, implementing fiscal reform for sustainability, tackling systemic inequality, and sharing the available work and improving the work-life balance (BDGP, 2007; SIGMA, 2010; JACKSON, 2009).
- IRIS - Impact Reporting and Investment Standards, see annexe 3 page 24 (sustainable finance and impact investing, output, 463 organizations and 1'931 microfinance institutions, March 2014), initiated by the Global Impact Investing Network (GIIN), in the same path as European Social Entrepreneurship Funds (EuSEFs) and Outcomes Matrix (Big Society Capital) by integrating (IRIS, 2015; IRIS 2011; EUROSIF, 2014):
 - ❖ Global Reporting Initiative (GRI).
 - ❖ International Financial Reporting Standards (IFRS).
 - ❖ Social Return on Investment (SROI).
 - ❖ Global Impact Investing Ratings System (GIIRS).
 - ❖ Impact Fund Performance Measurement and Reporting (PRISM).
 - ❖ Aspen Network of Development Entrepreneurs (ANDE).
 - ❖ Acumen Fund AppX Impact Investment Measurement Software (PULSE).
 - ❖ Microfinance Information Exchange (MIX) and Social Performance Task Force (SPTF).
- GRI - Global Reporting Initiative, see annexe 4 page 25 (sustainable management and corporate social responsibility, activity, 7'500 organizations, May 2013) in the same path as Natural Capital Coalition protocol and Social and Biodiversity Impact Assessment manual by integrating (GRI, 2013):
 - ❖ ISO 26000 guidance on social responsibility (ISO, 2014a; ISO 2014b).
 - ❖ United Nations Global Compact (UNGC).
 - ❖ Organisation for Economic Co-operation and Development guidelines for multinational corporations (OECD).
 - ❖ International Labour Organization Tripartite Declaration (ILO).
 - ❖ United Nations Guiding Principles on Business and Human Rights and the Earth Chapter.

Table 2: election of sustainable assessment frameworks standards

Sustainable field	Type of assessment framework	Consensus	Recentness	Integration
Development	SDG - Outcome	193 countries	August 2015	HWB, BGDP, AAAA
Finance	IRIS - Output	2'394 organizations	March 2014	GRI, IFRS, SROI
Management	GRI - Activity	7'500 organizations	May 2013	ISO, OECD, ILO

By choosing and synthesizing some recognized international standards from sustainable fields linked with social and complementary currency, such as sustainable development (outcome, objectives), sustainable finance (output, sectors) and sustainable management (activity, stakeholders), and by comparing them with reference studies on social and complementary currency evaluation, we can provide a common, comprehensive and incremental approach that would lead to a standardization of impact evaluation of social and complementary currency for value co-creation between stakeholders, see annexe 1 page 22.

Furthermore, in order to respect the bottom-up movement of social and complementary currency, an integral approach, beyond systemic and holistic approach, within a continuous improvement process (feedback-efficiency-evolution, plan-do-check-act, dream-plan-do-celebrate) should not only integrate the usual sustainable economic, social, environmental and anthropologic dimensions and indicators, but also the four quadrants of an integral vision, or all quadrants all levels, see annexe 5 page 26 (WILBER, 2014).

Table 3: all quadrants all levels interconnections of full-spectrum economics¹

<i>Non-dual</i>	Interior Views	Exterior Mechanism
Individual Individuations	I Subjective Intentional and conscious (aesthetic, expressive) Existential reflection (stages of consciousness, cognitive and self-identity)	IT Objective Behavioral and organism (empirical, positivism) Neuro-behavioral science (stages of the psychobody, organic and energetic)
	WE Inter-subjective Cultural and world vision (ethics, norms) Critical reflection (stages of worldview)	ITS Inter-objective Social and environment (cybernetics, systems) Complexity economics (stages of system logic, sociopolitical and economic)

Source: adapted from ARNSPERGER, 2010, p.203.

This ground-breaking integral approach of economic social science, defined as “the social science that studies the production, distribution and consumption of goods and services from a specific and often implicit worldview” (ARNSPERGER, 2010), give us a wider and wiser categorization system for our matrix. As our last research presented a draft of an Impact Assessment Matrix (IAM), see appendix 2 page 16, we will now design a prototype based on the synthesis of the various dimensions and indicators of the assessment frameworks presented above within an integral approach: sustainability assessment frameworks standards see appendix 3 page 18, social and complementary currency evaluation research reference studies, see appendix 4 page 19 (PLACE *et alii*, 2015).

¹ With 6 bridges: I-WE: situated self, I-IT: neuro-awareness, IT-ITS: functionalized individuality, ITS-WE: systemic culture, I-ITS: socialized spirituality or sociology of religion, IT-WE: interpretive chemistry or biology of culture.

2 IMPACT ASSESSMENT MATRIX

2.1 PROTOTYPE DESIGN

Here are the various criteria of the Impact Assessment Matrix:

- Integral approach: subjective or existential reflection (leadership and well-being), objective or neuro-behavioral science (hardware, software or material), inter-subjective or critical reflection (ethics and education), inter-objective or complexity economics (system design).
- Dimension: linked with scientific research domains in different background such as ecology (environment), sociology (social), economics (economy), politics (governance), anthropology, philosophy and psychology (culture) to insure a cross disciplinary approach.
- Level: meta, macro, meso or micro.
- Vision goal: as presented in appendix 1 page 15.
- Guideline principle: main topic, issue, subject which might be integrated, followed and respected.
- Evaluation objective: as presented in appendix 1 page 15.
- Typology and category (T/C): bilateral barter (B), multilateral barter (M), mutual credit (U), issued currency (C), hybrid exchange system (I) or relating to any of these types (A).
- Logic model hierarchy (LM): measuring activities (A), outputs (P) or outcomes (C).
- Progress measurement indicators of different kinds: eco-socio-environmental.
- Monitoring and evaluation methodology (M&E): data collection and analysis with quantitative or qualitative research methods.
- Cost (C): estimation of the time, money and human resources needed for data collection: low (1), medium (2), high (3).
- Frequency of the data collection and analysis (F): daily (D), weekly (W), monthly (M), yearly (Y).
- Number of the indicator (N): linked with sustainability assessment frameworks standards, see appendix 3 page 18, and social and complementary currency evaluation research reference studies, see appendix 4 page 19, according to a degree of relevancy with social and complementary currency (SCC) field: not (none), low (red), medium (orange), high (green).

This Impact Assessment Matrix is a prototype and further research will help to integrate the various assessment frameworks and evaluation research to design more appropriate and relevant indicators that would lead to a standardization of impact evaluation of social and complementary currency, thanks to a continuous improvement process.

Table 4: prototype of Impact Assessment Matrix - IAM

Integral approach	Dimension	Level	Vision Goal	Guideline Principle	Evaluation Objective	T/C	LM	Progress Measurement Indicators	M&E Methodology	C	F	N	
Subjective Existential reflection	Culture	Macro	Inner Outer Sense Harmony	Altruism	Other-Oriented Cooperation & Self-Oriented Competition Equilibrium	A	C	% other-oriented vs self-oriented	System database	2	M	1	
	Social	Meso	Needs Satisfaction	Well-being	Increase self-confidence	B M I	C	% agree & strongly agree	Interview	1	Y	2	
					Friendship and Trust	B M I	C	% agree & strongly agree	Interview	2	Y	3	
					Improve quality of life	B M I	C	% agree & strongly agree	Interview	1	D	4	
					Mindfulness and Spirituality	A	P	% agree & strongly agree	Interview	2	D	5	
Objective Neuro-behavioral science	Economic	Micro	Financial Autonomy Development	Risk	Disaster mitigation	U C I	P	Backup system Frequency	System database	1	Y	6	
					Currency Security features	A	P	N° security features	Best practices: 3	3	W	7	
					Transaction and Data Safety	A	A	N° failure accident	System database	2	W	8	
					Record keeping and statistics	A	A	Backup system Frequency	System database	1	W	9	
	Environment	Meta	Transition and Autonomy	Relocation	GHG emission	C I	C	%CO2 & CH4 decrease	Regional database	3	M	10	
		Meso	Ecological Footprint Reduction	Biodiversity	Reforestation	C I	C	N° tree plantation	Regional database	3	Y	11	
					Behaviour change	C I	C	% agree & strongly agree	Interview	3	W	12	
				Waste management	C I	C	%recycling increase	Regional database	3	D	13		
		Micro	Responsible Consumption Motivation	Eco-Friendly	Water management	C I	C	%water consumption decrease	Regional database	2	W	14	
Green economy	C I				C	%organic & fair product increase	Regional database	2	D	15			
Inter-subjective Critical reflection	Culture	Meta	Societal Acceptance	Societal	Recognition Credibility Legitimacy from (Inter-) Governmental Institution	A	C	N° institutional support	Management database	3	M	16	
					Tranverse Cross-Disciplinary Integral Holistic Collective Intelligence	A	C	N° scholar expert specialist involved	Management database	2	M	17	
		Meso	Pluralism Inclusivity Diversity	Creativity	Alternative Flexible Libertarian Measure of Value	A	C	Yes / No	Best practice	1	D	18	
					Soft Skills and Hard Skills Design Thinking	A	C	% soft skills vs hard skills	Management database	3	Y	19	
	Economic	Macro	Make Exchange Possible	Resilience	Viability	Training	A	P	% trained	Interview	3	M	20
									A	P	N° training hours per year	Management database	2
		Meso	Inclusive Community-Building	Viability	Participation	A	C	N° active members per year	Management database	1	Y	22	
					Friendly user	U C I	C	% agree & strongly agree	Interview	2	Y	23	
					Intelligibility	A	P	% agree & strongly agree	Interview	1	D	24	
				Team Capacity	A	A	N° management team	Management database	3	Y	25		
	Social	Meta	Link Share Reciprocity Solidarity	Cooperation	Engagement	Exchangeability	A	C	N° compensation systems	System database	2	M	26
						Co-creation	A	P	N° involved in design	Management database	3	M	27
						New skills	A	A	% agree & strongly agree	Interview	3	Y	28
		Macro	Equity and Justice	Engagement	Involvement	A	C	% agree & strongly agree	Interview	1	D	29	
					Inclusion	B M I	C	N° solidarity inclusion	Management database	1	W	30	
					Social service dependence	B M I	C	N° social service dependant	Management database	2	Y	31	
Cohesion					B M I	C	N° new relationship	Interview	2	D	32		
Meso		Needs Satisfaction	Diversity	Education level repartition	A	A	%High & Graduate school	Interview	3	W	33		
Micro		Mission	Ethic Charter	A	A	Yes / No	Best practice	1	D	34			

			Cohesion Cooperation Sharing Vector		Conducts Code	A	A	Yes / No	Best practice	2	W	35
				Education	Enrolment	A	C	N° children enrolled in school	Interview	3	D	36
Inter-objective Complexity economics	Culture	Micro	Innovation Confidence Humility	Innovation	Open Questioning Capacity	A	C	N° yearly improvement	Management database	2	Y	37
	Governance	Meta	Participatory Democracy	Democracy	Collaborative Election Decision Process: Consent Sociocracy Holacracy	A	P	N° stakeholder involved	Interview	2	Y	38
		Macro	Citizenship Engagement Recognition			A	A	N° administrative person	Management database	1	Y	39
		Meso	Independent Control	Legal	Independent Quality Control Process	A	P	Certification	External auditing	2	Y	41
		Micro	Monetary Creation as a Common Good			Transparency	National Legislation	A	P	N° legal text	System database	2
				Taxation	A		C	%rate (fixed & variable)	External auditing	1	W	43
				Open source system	A		C	Certification	External auditing	1	M	44
				Open banking	A		C	Certification	External auditing	2	M	45
		Free Code and Legality	A	C	% free code	External auditing	3	W	46			
	Economic	Meta	Crisis Resiliency	Resilience	Market diversity	A	C	N° goods & services category	Classification standards	3	M	47
		Macro	Make Exchange Possible			A	P	N° & % users & producers	System database	3	D	48
		Micro	Financial Autonomy Development	Finance	Investment standards	U C I	C	N° users & N° business	Minimum Best practices: 500 & 100	2	Y	49
					Interoperability	C I	A	N° systems users	System database	3	M	50
				Accountancy	Loan Standards	U C I	P	Certification	External auditing	2	D	51
					Accountancy standards	U C I	P	Certification	External auditing	3	D	52
				Exchange	Appropriate Socio-Environmental Accountancy Scheme	U C I	P	Certification	External auditing	1	D	53
					Monitoring and Evaluation	A	P	N° standards & tools used	Best practice	2	M	54
					Demurrage / Interest	A	C	%rate	Best practice	3	W	55
					Debt levels	A	C	Minimum and maximum	Best practice	2	D	56
					Discount rate	A	P	%discount	Best practice	2	W	57
					Salary bonus	U C I	P	%bonus	Best practice	1	D	58
	Exchange rates	A	A	%rate	Best practice	1	D	59				
	Backed system	A	A	%backing	Best practice	2	M	60				
	Social	Micro	Cohesion Cooperation Sharing Vector	Poverty	Income increase	B M I	C	%income increase	Interview	2	W	61
						A	C	N° risen out of acute poverty	Interview	1	W	62
				Employment	B M I	C	%employment increase	Interview	2	D	63	
					A	C	N° new job created	Interview	2	D	64	
	Environment	Meta	Transition and Autonomy	Relocation	Local growth	U C I	C	%GDP local increase per year	Regional database	3	M	65
						U C I	C	N° profitable enterprise support	Interview	2	M	66
						U C I	C	N° new profit & wage generated	Interview	1	Y	67
Macro		Eco-Localization Relocation	Local consumption		U C I	C	%products locally produced	System database	2	Y	68	
			Currency exchange		A	P	%salary exchanged in SCC	Interview	2	M	69	
			A		P	N° of SCC spent & earned	System database	1	M	70		
									2	Y	71	

2.2 CASE STUDY: LÉMAN

After a first impetus of Christophe DUNAND, Tim ANDERSON of Community Currency, Danièle WARYNSKI lecturer at the Haute école de travail social Genève, and Christophe PLACE through a workshop with EcoAttitude in 2010, APRÈS-GE, a social innovation network of 265 organisations called the Chamber of social and solidarity economy in Geneva, decided, by a unanimous General Assembly vote, the 29th of May 2013, to cooperate with the group Monnaie Grand Genève. This project began the 27th of September 2013 in the cross-border Genevan region through collective, voluntary, open and participatory co-creation. The Monnaie Grand Genève project, sometimes entitled *Grand Genève : une monnaie solidaire* or *franc genevois* or *alpoj*, includes 70 volunteers since a first impulse made by APRÈS-GE the 8th of November 2010, followed in 2011 and 2012 by Patrick VIVERET, Bernard LIEATAER, Pedro PAEZ, Thomas GRECO, John ROGERS and Frédéric BOSQUÉ in 2013. Moreover, in this context the project Monnaie Grand Genève launched in autumn 2014 a platform of flow analysis of the social and solidarity economy network thanks to a survey of inter-enterprises transfer registration of 15 members' accountancy with input-output analysis and network sociology: 1/3 of their economic relation are made with partners sharing the social and solidarity values; 1/3 of the current transactions could be made with partners sharing the social and solidarity economy values. That's why the Monnaie Grand Genève has a high potential of creating new transaction flows among the members of APRÈS-GE (MGG, 2014).

As a former CCIA-Community Currency in Action observer, a European Regional Development Fund project, I've been an observer of Monnaie Grand Genève in 2013 and 2014. The original idea of this service is to create an initial network of 600 participants, with 100 organizations and 500 individuals, to boost the local economy, strengthen neighbourhood ties, and support the sustainable development of the region. A first qualitative study analysed that Monnaie Grand Genève, studying the key success factors for its implementation, received a favorable opinion on the implementation thanks to a qualitative survey of 14 stakeholders where perceived benefits outweigh the perceived costs. The main salient attribute is to be an accelerator of wealth and an innovation with high added value, see annexe 6 page 28 (NGINAMAU, 2013). A second qualitative study analysed that the value proposition is not yet fully in line with the needs expressed by a sample of 15 potential users. Indeed, there is certainly a correlation of perceptions on the concept of local exchange and consumption incentive, but a divergence concerning participatory governance and social and solidarity economy objective, see annexe 7 page 28. Indeed, the credibility and the confidence in this exchange tool in a payment community depends on the service response to the expectation of the user (CHERVAZ, 2014). Nevertheless, the principle of co-creation in participatory governance, which is a key aspect of monetary innovation, will certainly enable a better synergy in the design concept of this currency as a service.

Table 5: Monnaie Grand Genève qualitative studies results

Study	Sample	Results	Details
NGINAMAU, 2013	14 stakeholders	Favorable opinion for its implementation	Perceived benefits outweigh perceived costs Accelerator of wealth & innovation with high added value
CHERVAZ, 2014	15 potential users	Value proposition not fully in line with expressed needs and concept perception	Correlation with local exchange and consumption incentive Divergence with participatory governance and social and solidarity economy objective
MGG, 2014	15 organizations	High potential of creating new transaction flows in APRÈS-GE	1/3 of their economic relation are made with partners sharing the social and solidarity values 1/3 of the current transactions could be made with partners sharing the social and solidarity economy values

The 18th, 19th and 20th of September 2015 in Geneva, during the Alternatiba Léman, a cross-border festival of local initiatives for climate and well-being, the Léman [lemā], or *Le Léman: monnaie local lémanique*, has been launched with the following characteristics. Léman has integrated another local currency from the Annemasse area, called Eco-Annemasse, and launched the 13th, 14th, and 15th of September 2012 during the fair trade and solidarity entrepreneurs show in Annemasse (MONNAIE LÉMAN, 2015):

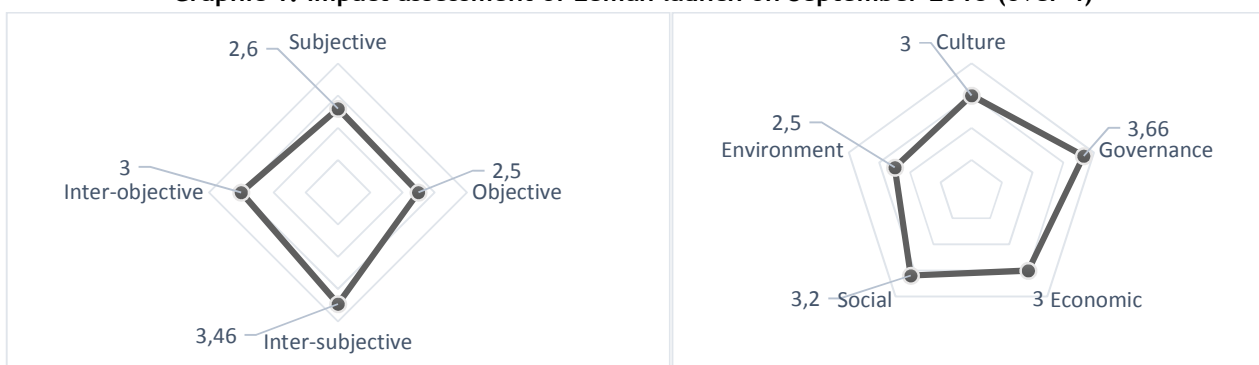
Table 6: Léman characteristics

Launch date	18 th of September 2015
Association	Léman Payment Community with its Community Investment Fund and Inter-Enterprise Barter Platform
Value proposition	Local, responsible, citizen, cross-border
Ethic charter	Local, solidarity, working conditions, real economy, socio-ecologically responsible, continuous improvement
System	Mutual Credit and Issued Currency (pledge)
Parity	1 Léman equal to 1 Euro, or 1 LEM = 1 EUR
Conversion	EUR and CHF with a EUR/CHF exchange rate of September 2015 equal to 1.087 and a guarantee fund
Format	Paper with note (physical), then electronic with e-payment website and smart phone application (digital)
Note denomination	1, 5, 10, 20
Business model	5% of conversion exchange commission in Léman every semester for a collective investment account
Membership	Free one year membership with free exit under the condition of balanced account
Committee	Monnaie Léman Suisse in Switzerland and Monnaie Léman France in France
Members	67 individuals, 10 organizations
Producers	17 shops
Support	6 experts, 6 academic or research institutions
Stakeholders	Chamber of Social and Solidarity Economy in Geneva (265 members), 2 city councils (Carouge, Annemasse)
Geography	Grand Genève, then Métropole Lémanique, then Arpitan ²

Based on the Impact Assessment Matrix prototype presented above, we will assess the impact of the Léman with 3 more criteria, through a qualitative analysis based on the observation of the case study from 2013 to 2014³, see appendix 5 page 20:

- Scoring (S): with even number from 1 (very low, red), 2 (low, yellow) to 3 (high, blue), 4 (very high, green) in order to represent a multifaceted matrix in a radar graphic, see below.
- Justification: comments, remarks, critics to justify the scoring (N/A for not applicable or not available).
- Recommendation: solution proposition to implement in a continuous improvement process.

Graphic 1: impact assessment of Léman launch on September 2015 (over 4)



² Grand Genève means Genevan region, or Franco-Valdo-Genevois; Métropole Lémanique means Lake Geneva region; and Arpitan, or Romand, means Franco-Provençal language region which includes Aosta Valley, Piedmont, Foggia, Franche-Comté, Savoie, Bresse, Bugey, Dombes, Beaujolais, Duaphiné, Lyonnais, Forez, Romandie.

³ Without using the progress indicators measurement and the monitoring and evaluation methodology of the Impact Assessment Matrix.

In term of integral approach, the critical reflection linked with ethics (inter-subjective) and the complexity economics linked with sociopolitical (inter-objective) quadrants are the most relevant. On the contrary, the existential reflection linked with self-identity (subjective) and the neuro-behavioral science linked with empirical (objective) are the less relevant. As the Léman mainly focus on collective value creation (institutions) and social and solidarity economy objectives (views) as shown on the value proposition, this impact assessment is coherent.

In term of sustainable dimensions, the governance and social dimensions are higher than the culture and economic ones, which are higher than the environment one. As the Léman mainly promote participatory governance and social and solidarity economy objective during its pre-launch, and as it's difficult to assess the local exchange and consumption incentive results because this currency just released, this impact assessment is also coherent.

CONCLUSION

According to most of the social and complementary currency research studies, and especially 2 recent systematic literature review, we need to develop a monitoring and evaluation framework to assess their impact in terms of sustainable development. (1) What context and objective favour the implementation of monetary innovation? Even if further research is needed to clearly identify these favorable context and objective to implement monetary innovation, we selected and synthetized 3 reference assessment frameworks to design an Impact Assessment Matrix: Sustainable Development Goals, Impact Reporting and Investment Standards, dealing respectively with outcomes, outputs and activity of a Logic Model. We also linked this impact assessment matrix with 4 reference studies on impact evaluation of monetary innovation and an integral approach. (2) How to enhance and evaluate the impacts of such innovations? In order to build a bottom-up methodology within a continuous improvement process and in order to evaluate the interest of supporting such initiatives, we decided to qualitatively assess, through this Impact Assessment Matrix, a recently launched currency, the Léman, based on 3 recent qualitative studies. This case study shows the relative pertinence of our impact assessment matrix.

We only assessed one case study with its intrinsic limitation due to its recent released. Consequently, more assessments need to be done in order to improve this Impact Assessment Matrix and the relevance of its 71 quantitative and qualitative indicators. Indeed, further research through a global expedition to analyse innovative and traditional initiatives in both developing and developed countries will allow us to not only improve this Impact Assessment Matrix prototype towards a standardization process of monetary innovation assessment framework, but also publish an atlas compendium of reference case studies and an implementation guide with key success factors.

Does this research give us a first impetus of an integral assessment matrix for integral monetary systems? Indeed, the purpose of a monetary innovation system, or resource and behavior management system, is to manage the production, distribution and consumption of goods and services on one side; and incentive an integral practice and development of individuals on the other side.

APPENDIX

1. GOALS AND OBJECTIVES FOR COMPLEMENTARY CURRENCY SYSTEMS

Dimension	Level	Vision/Goal	Mission/Objective
Culture	Meta	Societal Acceptance	Recognition Credibility Legitimacy from (Inter-)Governmental Institution Tranverse Cross-Disciplinary Integral Holistic Collective Intelligence
	Macro	Inner Outer Sense Harmony	Other-Oriented Cooperation & Self-Oriented Competition Equilibrium
	Meso	Pluralism Inclusivity Diversity Creativity	Alternative Flexible Libertarian Measure of Value Soft Skills and Hard Skills Design Thinking
	Micro	Innovation Confidence Humility	Open Questioning Capacity
Governance	Meta	Participatory Democracy	Collaborative Election Decision Process: Consent Sociocracy
	Macro	Citizenship Engagement Recognition	Effective Stakeholder Involvement Stimulation
	Meso	Independent Control	Independent Quality Control Process
	Micro	Monetary Creation as a Common Good	Open Free Code and Legality
Economic	Meta	Crisis Resiliency	Sufficient Currency Tool Constellation: Diversity Inter-connexion Appropriate Socio-Environmental Accountancy Scheme Efficient Externalities Internalisation
	Macro	Make Exchange Possible	Unsatisfied Needs meet Unused Resources
	Meso	Inclusive Community-Building	Income, Employment and Activities Generating Financial Inclusion & Credit Clearing & Social Inclusion Local Economic Actor Liquidity
	Micro	Financial Autonomy Development	Turnover/Sales Client Loyalty Purchasing Power Value-Added
Social	Meta	Link Share Reciprocity Solidarity	Local, Time and Knowledge Exchange
	Macro	Equity and Justice	Public Debt Reduction Egalitarian or Ethical Value Hierarchy Public Services Increase Social Protection Preservation Non-Speculative Economy Circulation
	Meso	Needs Satisfaction	Informal Primary Livelihoods Activities Support Voluntary Work Valuation Keep Wealth Locally
	Micro	Cohesion Cooperation Sharing Vector	Value Co-Creation Process SSE Network Activation Consumer-Producer Link Reinforcement
Environment	Meta	Transition and Autonomy	Encourage Territorial Community: Conurbation Regional Development
	Macro	Eco-Localization Relocation	Incentive to Attract Local Producer and Consumer
	Meso	Ecological Footprint Reduction	Eco-Citizen Behavior Incentive: Consumption Reduction, Repair Reuse, Energy Saving, Waste Recycling, Biodiversity Rehabilitation, Organic Agroforestry, Water Conservation, Ethical Banking, Sustainable Investment...
	Micro	Responsible Consumption Motivation	Label Network Integration: Fair Trade, Organic Products, Eco-Friendly...

Source: PLACE *et alii*, 2015.

2. PROTOTYPE OF IMPACT ASSESSMENT MATRIX

Dimension	Level	Vision Goal	Guideline Principle	Evaluation Objective	Typol Categ	Logic Model	Progress Measurement Indicators	Monitoring & Evaluation Methodology, Data Collection & Analysis	Co st	Fr eq
Culture	Meta	Societal Acceptance	Societal	Recognition Credibility Legitimacy from (Inter-) Governmental Institution	A	Outcome	N° institutional support	Management database	3	M
				Transverse Cross-Disciplinary Integral Holistic Collective Intelligence	A	Outcome	N° scholar expert specialist involved	Management database	2	M
	Macro	Inner Outer Sense Harmony	Altruism	Other-Oriented Cooperation & Self-Oriented Competition Equilibrium	A	Outcome	% other-oriented vs self-oriented	System database	2	M
	Meso	Pluralism Inclusivity Diversity	Creativity	Alternative Flexible Libertarian Measure of Value	A	Outcome	Yes / No	Best practice	1	D
				Soft Skills and Hard Skills Design Thinking	A	Outcome	% soft skills vs hard skills	Management database	3	Y
Micro	Innovation Confidence Humility	Innovation	Open Questioning Capacity	A	Outcome	N° yearly improvement	Management database	2	Y	
Governance	Meta	Participatory Democracy	Democracy	Collaborative Election Decision Process: Consent Sociocracy Holacracy	A	Output	N° stakeholder involved	Interview	2	Y
					A	Activity	N° administrative person	Management database	1	Y
	Macro	Citizenship Engagement Recognition		Effective Stakeholder Involvement Stimulation	A	Output	% participation among users	Management database	1	Y
	Meso	Independent Control	Legal	Independent Quality Control Process	A	Output	Certification	External auditing	2	Y
				National Legislation	A	Output	N° legal text	System database	2	W
	Micro	Monetary Creation as a Common Good	Transparency	Taxation	A	Outcome	%rate (fixed & variable)	External auditing	1	W
				Open source system	A	Outcome	Certification	External auditing	1	M
				Open banking	A	Outcome	Certification	External auditing	2	M
Free Code and Legality				A	Outcome	% free code	External auditing	3	W	
Economic	Meta	Crisis Resiliency	Resilience	Market diversity	A	Outcome	N° goods & services category	Classification standards	3	M
					A	Output	N° & % users & producers	System database	3	D
	Macro	Make Exchange Possible	Resilience	Tipping Point Network Scale	U C I	Outcome	N° users & N° business	Minimum Best practices: 500 & 100	2	Y
				Training	A	Output	% trained	Interview	3	M
					A	Output	N° training hours per year	Management database	2	M
	Meso	Inclusive Community-Building	Viability	Interoperability	C I	Activity	N° systems users	System database	3	M
				Participation	A	Outcome	N° active members per year	Management database	1	Y
				Friendly user	U C I	Outcome	% agree & strongly agree	Interview	2	Y
				Intelligibility	A	Output	% agree & strongly agree	Interview	1	D
				Team Capacity	A	Activity	N° management team	Management database	3	Y
	Micro	Financial Autonomy Development	Risk	Disaster mitigation	U C I	Output	Backup system Frequency	System database	1	Y
				Currency Security features	A	Output	N° security features	Best practices: 3	3	W
				Transaction and Data Safety	A	Activity	N° failure accident	System database	2	W
Record keeping and statistics			A	Activity	Backup system Frequency	System database	1	W		
Finance			Investment standards	U C I	Output	Certification	External auditing	2	D	
			Loan Standards	U C I	Output	Certification	External auditing	3	D	

			Accountancy	Accountancy standards	U C I	Output	Certification	External auditing	1	D	
				Appropriate Socio-Environmental Accountancy Scheme	U C I	Output	Certification	External auditing	2	M	
			Exchange	Management	Monitoring and Evaluation	A	Output	N° standards & tools used	Best practice	3	M
				Exchange	Demurrage / Interest	A	Outcome	%rate	Best practice	3	W
					Debt levels	A	Outcome	Minimum and maximum	Best practice	2	D
					Discount rate	A	Output	%discount	Best practice	2	W
					Salary bonus	U C I	Output	%bonus	Best practice	1	D
Exchange rates	A	Activity	%rate	Best practice	2	M					
Backed system	A	Activity	%backing	Best practice	2	D					
Social	Meta	Link Share Reciprocity Solidarity	Cooperation	Exchangeability	A	Outcome	N° compensation systems	System database	2	M	
				Co-creation	A	Output	N° involved in design	Management database	3	M	
				New skills	A	Activity	% agree & strongly agree	Interview	3	Y	
	Macro	Equity and Justice	Engagement	Involvement	A	Outcome	% agree & strongly agree	Interview	1	D	
				Inclusion	B M I	Outcome	N° solidarity inclusion	Management database	1	W	
				Social service dependence	B M I	Outcome	N° social service dependant	Management database	2	Y	
	Meso	Needs Satisfaction	Well-being	Cohesion	B M I	Outcome	N° new relationship	Interview	2	D	
				Increase self-confidence	B M I	Outcome	% agree & strongly agree	Interview	1	Y	
				Friendship and Trust	B M I	Outcome	% agree & strongly agree	Interview	2	Y	
	Micro	Cohesion Cooperation Sharing Vector	Diversity	Improve quality of life	B M I	Outcome	% agree & strongly agree	Interview	1	D	
				Mindfulness and Spirituality	A	Output	% agree & strongly agree	Interview	2	D	
				Education level repartition	A	Activity	%High & Graduate school	Interview	3	W	
			Mission	Ethic Charter	A	Activity	Yes / No	Best practice	1	D	
				Conducts Code	A	Activity	Yes / No	Best practice	2	W	
				Education	Enrolment	A	Outcome	N° children enrolled in school	Interview	3	D
					Poverty	Income increase	B M I	Outcome	%income increase	Interview	2
	A	Outcome	N° risen out of acute poverty	Interview		1	W				
B M I	Outcome	%employment increase	Interview	2	D						
A	Outcome	N° new job created	Interview	3	D						
Environment	Meta	Transition and Autonomy	Relocation	Local growth	U C I	Outcome	%GDP local increase per year	Regional database	2	M	
					U C I	Outcome	N° profitable enterprise support	Interview	1	Y	
					U C I	Outcome	N° new profit & wage generated	Interview	2	Y	
	Macro	Eco-Localization Relocation	Relocation	GHG emission	C I	Outcome	%CO2 & CH4 decrease	Regional database	3	M	
				Local consumption	U C I	Outcome	%products locally produced	System database	2	M	
				Currency exchange	A	Output	%salary exchanged in CCS	Interview	1	M	
					A	Output	N° of CCS spent & earned	System database	2	Y	
	Meso	Ecological Footprint Reduction	Biodiversity	Reforestation	C I	Outcome	N° tree plantation	Regional database	3	Y	
				Eco-Friendly	Behaviour change	C I	Outcome	% agree & strongly agree	Interview	3	W
					Waste management	C I	Outcome	%recycling increase	Regional database	3	D
	Micro	Responsible Consumption Motivation	Eco-Friendly	Water management	C I	Outcome	%water consumption decrease	Regional database	2	W	
Green economy				C I	Outcome	%organic & fair product increase	Regional database	2	D		

Source: PLACE *et alii*, 2013.

3. SUSTAINABILITY ASSESSMENT FRAMEWORKS STANDARDS

Integral approach	Type	Dimension	Objectives/Indicators	N
Subjective Existential reflection	SDG	HE-Health	3. Ensure healthy lives and promote well-being for all at all ages	5
	IRIS	Health	Caregivers employed, healthcare facilities, health intervention completion rate	4
Objective Neuro-behavioral science	SDG	HU-Hunger	2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture	15
	SDG	W-Water	6. Ensure availability and sustainable management of water and sanitation for all	13-14
	SDG	EN-Energy	7. Ensure access to affordable, reliable, sustainable and modern energy for all	10
	SDG	CC-Climate Change	13. Take urgent action to combat climate change and its impacts	10
	SDG	O-Oceans	14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development	12
	SDG	TE-Terrestrial ecosystems	15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	11
	IRIS	Agriculture	Crop type, livestock-fish type, land directly controlled, pesticide use, purchase contracts, land indirectly controlled, producer price premium, units-volume purchased at price premium, client crop yield, units-volume purchased from supplier organizations, units-volume purchased from supplier individuals, supplier individuals yield	15
	IRIS	Energy	Energy capacity of product, energy capacity of products sold, energy consumption of product, energy consumption of product replaced, energy savings from products sold, energy produced for service sale, energy savings from services sold	10
	IRIS	Environment	Greenhouse gas emissions of product replaced, greenhouse gas reductions due to products sold, hazardous waste avoided, trees planted, land reforested	10
	IRIS	Land Conservation	Conservation priority characteristics, type of land area, ecosystem services, streams present, coastline present, protected land area, ecological restoration management area, streams restored, coastline restored, projected land adjacency, protected land assemblage total area, revenue generated at directly supported enterprises	11
	IRIS	Water	Water production capacity of product, wastewater treated capacity of product, water consumption of product, replaced, water production capacity of products sold, water savings from products sold, water produced from service sale, water savings from services	13-14
GRI	Environmental	Materials, energy, water, biodiversity, emissions, effluents and waste, products and services, compliance, transport, overall, supplier environmental assessment, environmental grievance mechanisms	12	
Inter-subjective Critical reflection	SDG	ED-Education	4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	20-21
	SDG	CI-Cities	11. Make cities and human settlements inclusive, safe, resilient and sustainable	29-32
	SDG	SC-Sustainable Consumption & Production	12. Ensure sustainable consumption and production patterns	62-71
	IRIS	Education	School enrollment, teachers employed, teacher attendance rate, teacher qualifications, teaching experience, student attendance-dropout-transition-tests pass rate, student to classroom ratio, classroom area per student, student to toilet ratio, student to teacher ratio, textbook to student ratio, vocational-technical training, job placement rate, school meals, student transportation, students provided full scholarship, students provided partial scholarship, value of new educations instructional materials, classroom space new-improved, hours of school offered per week, days of school offered per year, parent-community-teacher engagement, extracurricular programs offered, school fees	36
	IRIS	Housing & Community Facilities	Community facilities types, housing type, setting of housing community facilities, percent affordable housing, individuals housed, number of housing units constructed, improved, energy efficiency improvements, energy saved conserved, area of buildings reused, number of housing units financed, value of housing units financed, number of community facilities financed, value of community facilities financed, area of community facilities financed, value of commercial or retail infrastructure financed	62-65
	GRI	Society	Local communities, anti-corruption, public policy, anti-competitive behavior, compliance, supplier assessment for impacts on society, grievance mechanisms for impacts on society	22-32
Inter-objective Complexity economics	GRI	Human rights	Investment, non-discrimination, freedom of association and collective bargaining, child labor, forced or compulsory labor, security practices, indigenous rights, assessment, supplier human rights assessment, human rights grievance mechanisms	34-36
	SDG	PO-Poverty	1. End poverty in all its forms everywhere	62-65
	SDG	GE-Gender	5.- Achieve gender equality and empower all women and girls	47-50
	SDG	GR-Growth & Employment	8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	66-71
	SDG	IN-Infrastructure & Industry	9. Built resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	53-54
SDG	IN-Inequality	10. Reduce inequality within and among countries	62-65	

	SDG	PE-Peaceful & Inclusive Societies	16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	38-42
	SDG	GL-Global Partnership	17. Strengthen the means of implementation and revitalize the global partnership for sustainable development	43-50
	IRIS	Financial Services	Non-performing loans (portfolio at risk)-30-60-90 days, loan write-offs, capital available, social responsibility to financial services clients, social and environmental performance incentives, loan officers employed, loan officer wages, type of financial institution, microfinance delivery methodology, interest rate method, compulsory insurance products, compulsory deposits, other financial services offered, non-financial support offered, environmental policies for financial services clients, active borrowers per loan officer, effective interest rate	51-61
	IRIS	Cross-Sector	Board of directors remuneration, target beneficiary entity, relationship to target beneficiary entity	37-42
	GRI	Economic	Economic performance, market presence, indirect economic impacts, procurement practices	56-71
	GRI	Labor Practices and Decent Work	Employment, labor/management relations, occupational health and safety, training and education, diversity and equal opportunity, equal remuneration for women and men, supplier assessment for labor practices, labor practices grievance mechanisms	37-40
	GRI	Product responsibility	Customer health and safety, product and service labeling, marketing communications, customer privacy, compliance	43-46

4. SOCIAL AND COMPLEMENTARY CURRENCY EVALUATION RESEARCH REFERENCE STUDIES

Integral approach	Study	Dimension	Objectives/Indicators	N
Subjective Existential reflection	MICHEL <i>et alii</i>	Social	Foster community building-build social capital (expand social networks, increase trust, improve relationships), tackle social exclusion, boost self-confidence, improve quality of life in terms of well-being, act as social support, enjoy greater social than economic benefits	1
	SEYFANG <i>et alii</i>	Social	Community-building and social capital creation, inclusion and cohesion: rewarding neighbourly support and social care and community-based activities and work as formalised reciprocal volunteering schemes, rewarding acts of neighbourly support which promotes a sense of community, empower socially-excluded groups and thereby boosting self-esteem and self-confidence and social participation and wellbeing, enabling elderly people to remain independent and healthy in their homes longer	2-3
Objective Neuro-behavioral science	MICHEL <i>et alii</i>	Environment	Encourage environment-friendly behaviour, reduce ecological footprint	12
	SEYFANG <i>et alii</i>	Environment	Enabling collaborative consumption to reduce environmental impacts of current lifestyles: enabling more localised consumption patterns and import substitution, facilitate resource-sharing and provide an accessible reuse market for unwanted goods, meet their psychological needs through social interaction rather than through material consumption, rewarding citizens who participate in recycling programmes or who purchase more sustainable products or use public transport, encourage the development of new green technologies	10-15
	DITTMER	Eco-localization	Moderately increases local self-reliance by facilitating informal resale, repair, and sharing of commercially produced goods, possibly facilitates local purchasing, good at attracting local businesses, ability to localize supply chains	70-71
Inter-subjective Critical reflection	DITTMER	Alternative values	Flexible and unflexible libertarian measure of value, claimed to encourage egalitarian valuation of labour time	16-18
	INSTITUTO PALMAS <i>et alii</i>	Capacity building	Individual and territorial capacity empowerment with action achievement, financial products and services articulation with projects	19-25
Inter-objective Complexity economics	MICHEL <i>et alii</i>	Economic	Impact on local economy, recognise and value informal work, improve employability, promote local economic activity, access to goods and services otherwise unaffordable, increase member income, improve quality of life in terms of standard of living, support local businesses, cushion external economic shocks, business incubator for small enterprises	66-69
	SEYFANG <i>et alii</i>	Economic	Boosting local economies and valuing marginalised labour: complement the national currency, increasing the velocity of local exchanges, grassroots degrowth, increase local economic resilience, loyalty to local communities, exchange goods and services within a limited site-specific event, support social enterprises and sustainability-focused businesses	63-71
	DITTMER	Inclusive community-building	Improve local social networks, reaching the socially excluded	48-50
	DITTMER	Alternative livelihoods	Supports partial autonomy from formal employment	62-65
	INSTITUTO PALMAS <i>et alii</i>	Socioeconomic and financial development	Banking and financial service access meeting the conditions of life and needs of the population, financial education of entrepreneurs and businesses and individuals, economic drive of the production and consumption of the community, production and consumption local and solidarity network articulation, promotion of the social and economic development	51-61
	INSTITUTO PALMAS <i>et alii</i>	Participation and social control	Increase of community credibility, community bank management participation of the community, community participation in neighborhood activities and events	37-46
INSTITUTO PALMAS <i>et alii</i>	Institutional performance	Appropriate management structure with banking and financial services offer, recognition of the public importance of the fund manager performance, credit fund composition and management autonomy, comparison of institutional performance data with other non-community microcredit institutions	6-9	

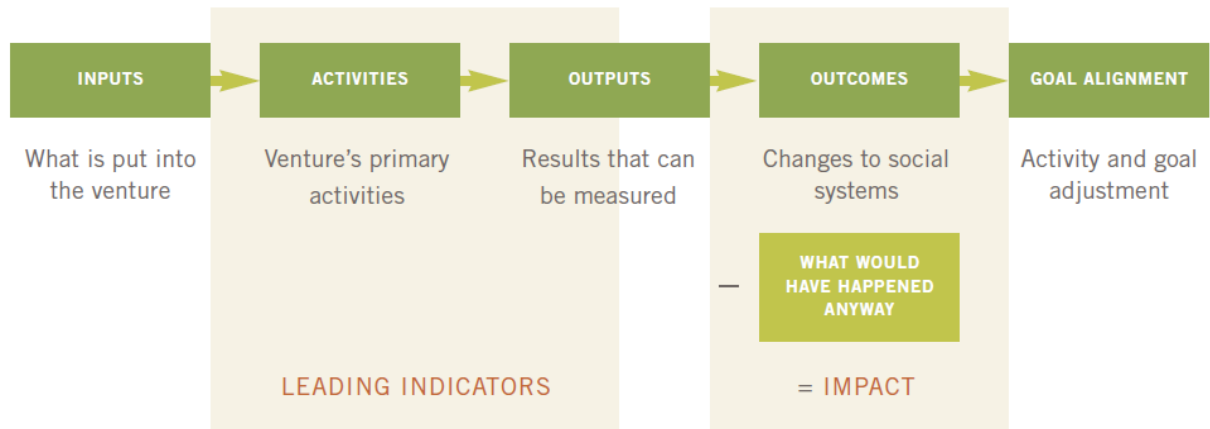
5. IMPACT ASSESSMENT OF LÉMAN CASE STUDY

Integral approach	Dimension	Vision Goal	Guideline Principle	Evaluation Objective	Progress Measurement Indicators	S	Justification	Recommendation
Subjective Existential reflection	Culture	Inner Outer Sense Harmony	Altruism	Other-Oriented Cooperation & Self-Oriented Competition Equilibrium	% other-oriented vs self-oriented	3	Mutual credit system	Maximum and minimum balance account
	Social	Needs Satisfaction	Well-being	Increase self-confidence	% agree & strongly agree	3	Money appropriation	Monthly barter event
				Friendship and Trust	% agree & strongly agree	4	Feeling of community	Monthly barter event
				Improve quality of life	% agree & strongly agree	2	Sustainable services	Increase service diversity
				Mindfulness and Spirituality	% agree & strongly agree	1	No incentive	Include specific services
Objective Neuro-behavioral science	Economic	Financial Autonomy Development	Risk	Disaster mitigation	Backup system Frequency	-	N/A	
				Currency Security features	N° security features	3	Usual security feature	Communicate on them
				Transaction and Data Safety	N° failure accident	-	N/A	
				Record keeping and statistics	Backup system Frequency	-	N/A	
	Environment	Transition and Autonomy	Relocation	GHG emission	%CO2 & CH4 decrease	3	Local consumption	Life cycle assessment
					Ecological Footprint Reduction	Biodiversity	Reforestation	N° tree plantation
		Behaviour change	% agree & strongly agree	2			No incentive	Positive valuation
		Eco-Friendly	Waste management	%recycling increase		-	N/A	
			Water management	%water consumption decrease		-	N/A	
			Green economy	%organic & fair product increase		2	Sustainable consumption	Positive valuation
		Responsible Consumption Motivation						
Inter-subjective Critical reflection	Culture	Societal Acceptance	Societal	Recognition Credibility Legitimacy from (Inter-) Governmental Institution	N° institutional support	4	6 institutional supports	Increase institutional and strategic partnership
				Transverse Cross-Disciplinary Integral Holistic Collective Intelligence	N° scholar expert specialist involved	-	N/A	
		Pluralism Inclusivity Diversity	Creativity	Alternative Flexible Libertarian Measure of Value	Yes / No	1	Parity with euro	Create an hybrid system
	Economic	Make Exchange Possible	Resilience	Training	% trained	3	67 individuals	Increase users diversity
					N° training hours per year	-	N/A	
		Inclusive Community-Building	Viability	Participation	N° active members per year	3	67 individuals	Increase users diversity
				Friendly user	% agree & strongly agree	4	1, 5, 10, 20 notes	Quinquennial versions
				Intelligibility	% agree & strongly agree	4	Léman guide	English version
	Team Capacity	N° management team	4	2 committee	Election frequency			
	Social	Link Share Reciprocity Solidarity	Cooperation	Exchangeability	N° compensation systems	4	Euro and Swiss Franc	Fixed rate
				Co-creation	N° involved in design	4	4 local designers	Quinquennial versions
				New skills	% agree & strongly agree	-	N/A	
		Equity and Justice	Engagement	Involvement	% agree & strongly agree	-	N/A	
				Inclusion	N° solidarity inclusion	3	10 SSE members	Increase service diversity
				Social service dependence	N° social service dependant	3	10 SSE members	Increase service diversity
				Cohesion	N° new relationship	-	N/A	
		Needs Satisfaction	Diversity	Education level repartition	%High & Graduate school	-	N/A	
Cohesion Cooperation Sharing Vector		Mission	Ethic Charter	Yes / No	4	Charter of Léman	Specific index	
	Conducts Code		Yes / No	4	Guide of Léman	Specific index		
Education	Enrolment	N° children enrolled in school	-	N/A				

Inter-objective Complexity economics	Culture	Innovation Confidence Humility	Innovation	Open Questioning Capacity	N° yearly improvement	4	Participatory governance	Election frequency	
	Governance	Participatory Democracy	Democracy	Collaborative Election Decision Process: Consent Sociocracy Holacracy	N° stakeholder involved	3	67 individuals	Increase users diversity	
					N° administrative person	4	2 committee	Election frequency	
		Citizenship Engagement Recognition	Legal	Independent Quality Control Process	Effective Stakeholder Involvement Stimulation	% participation among users	-	N/A	
		Independent Control			Certification	-	N/A		
		Monetary Creation as a Common Good	Transparency	National Legislation	N° legal text	4	2 legal text	Specific index	
					Taxation	%rate (fixed & variable)	-	N/A	
					Open source system	Certification	-	N/A	
	Open banking				Certification	-	N/A		
	Free Code and Legality	% free code	-	N/A					
	Economic	Crisis Resiliency	Resilience	Market diversity	N° goods & services category	3	10 different services	Increase services diversity	
					N° & % users & producers	2	17 shops	Increase services diversity	
		Make Exchange Possible	Finance	Investment standards	Tiping Point Network Scale	N° users & N° business	1	67 + 10 members	Increase services diversity
					Interoperability	N° systems users	3	Exchange counter	Specific index
		Financial Autonomy Development	Accountancy	Accountancy standards	Loan Standards	Certification	-	N/A	
					Appropriate Socio-Environmental Accountancy Scheme	Certification	-	N/A	
					Monitoring and Evaluation	N° standards & tools used	2	Not specific	Continuous improvement
			Exchange	Demurrage / Interest	Debt levels	Minimum and maximum	-	N/A	
					Discount rate	%discount	-	N/A	
					Salary bonus	%bonus	-	N/A	
					Exchange rates	%rate	3	5% conversion	Specific index
		Backed system	%backing	4	Guarantee fund	Specific index			
		Social	Cohesion Cooperation Sharing Vector	Poverty	Income increase	%income increase	-	N/A	
	N° risen out of acute poverty					-	N/A		
	Employment			%employment increase	-	N/A			
				N° new job created	-	N/A			
	Environment	Transition and Autonomy	Relocation	Local growth	%GDP local increase per year	-	N/A		
					N° profitable enterprise support	-	N/A		
N° new profit & wage generated					-	N/A			
Eco-Localization Relocation		Local consumption	%products locally produced	3	Local network	Discount on local product			
		Currency exchange	%salary exchanged in SCC	-	N/A				
N° of SCC spent & earned	-	N/A							

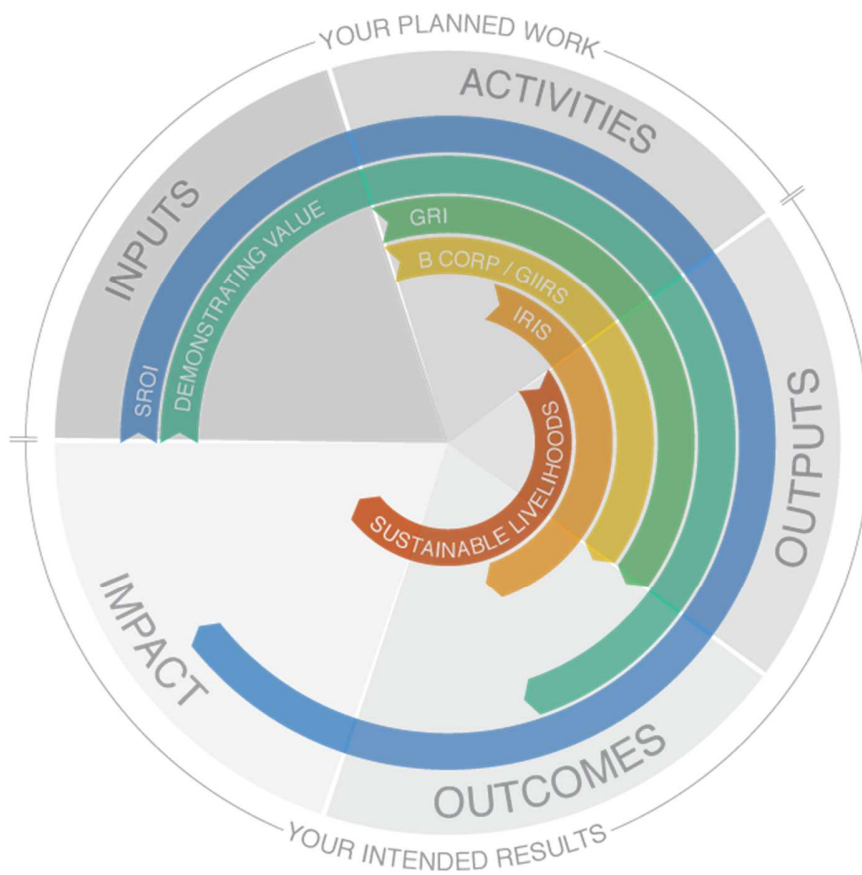
ANNEXE

1. THEORY OF CHANGE OR LOGIC MODEL



Based on the Impact Value Chain in *The Double Bottom Line Methods Catalog*, Clark, Rosenzweig, Long and Olsen and The Rockefeller Foundation, 2003.

Source: SVTG, 2008.

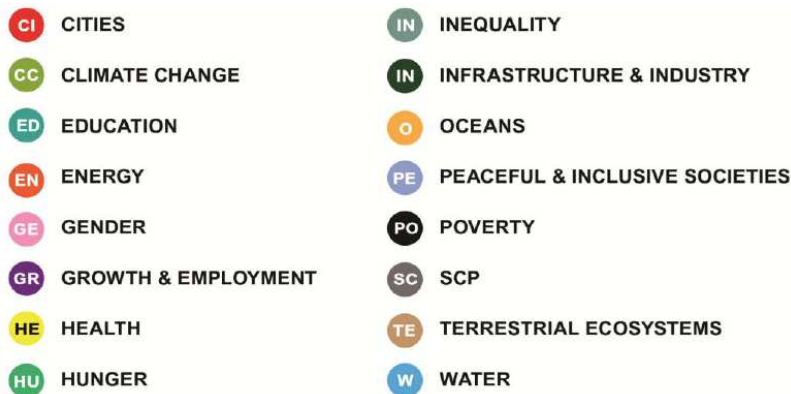


Source: MaRS, 2015.

2. SUSTAINABLE DEVELOPMENT GOALS

- GOAL 1** End poverty in all its forms everywhere
- GOAL 2** End hunger, achieve food security and improved nutrition and promote sustainable agriculture
- GOAL 3** Ensure healthy lives and promote well-being for all at all ages
- GOAL 4** Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
- GOAL 5** Achieve gender equality and empower all women and girls
- GOAL 6** Ensure availability and sustainable management of water and sanitation for all
- GOAL 7** Ensure access to affordable, reliable, sustainable and modern energy for all
- GOAL 8** Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
- GOAL 9** Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
- GOAL 10** Reduce inequality within and among countries
- GOAL 11** Make cities and human settlements inclusive, safe, resilient and sustainable
- GOAL 12** Ensure sustainable consumption and production patterns
- GOAL 13** Take urgent action to combat climate change and its impacts*
- GOAL 14** Conserve and sustainably use the oceans, seas and marine resources for sustainable development
- GOAL 15** Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
- GOAL 16** Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
- GOAL 17** Strengthen the means of implementation and revitalize the global partnership for sustainable development

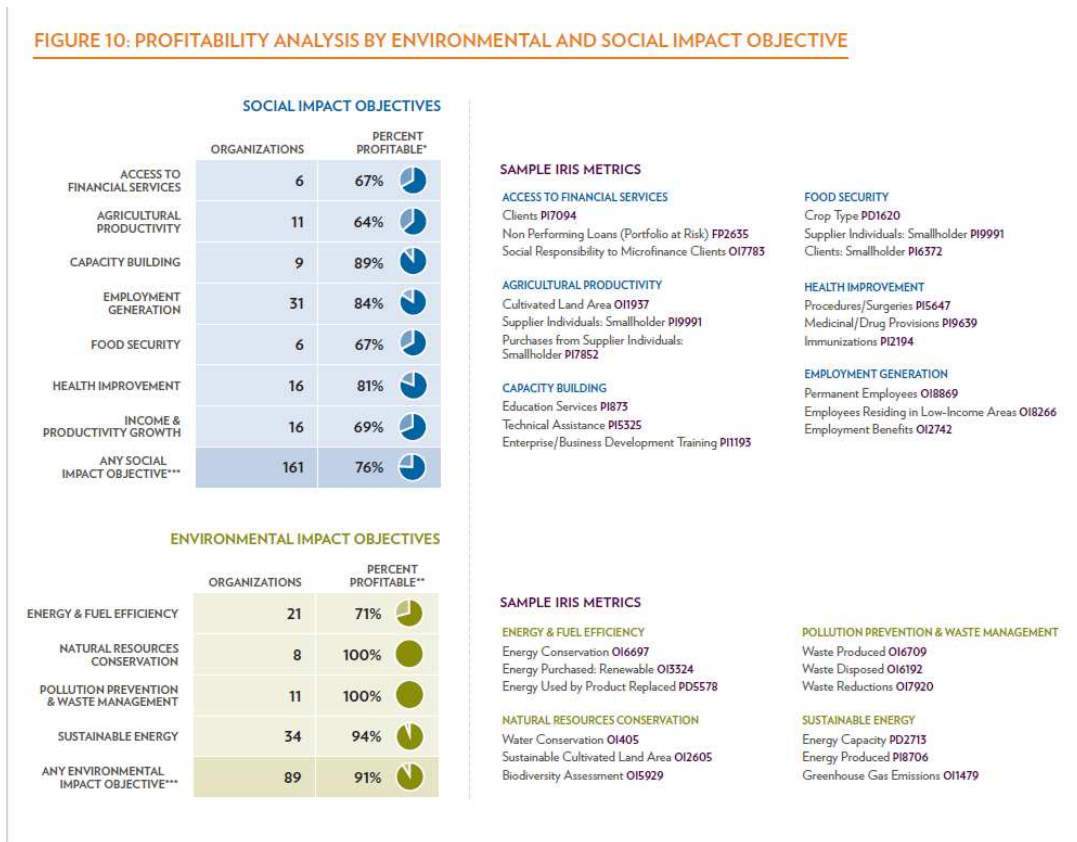
* Acknowledging that the United Nations Framework Convention on Climate Change is the primary international, intergovernmental forum for negotiating the global response to climate change.



Source: SDG, 2015a ; SDG, 2015b.

3. IMPACT REPORTING AND INVESTMENT STANDARDS

FIGURE 10: PROFITABILITY ANALYSIS BY ENVIRONMENTAL AND SOCIAL IMPACT OBJECTIVE



*Companies showing a positive net income in the last year reported

**Based on a positive EBITDA in the last year reported

***Total includes data from organizations with impact objectives that had too few observations to be represented elsewhere in the figure

Note: The codes following the sample IRIS metrics can be referenced on www.iris.thegiin.org.



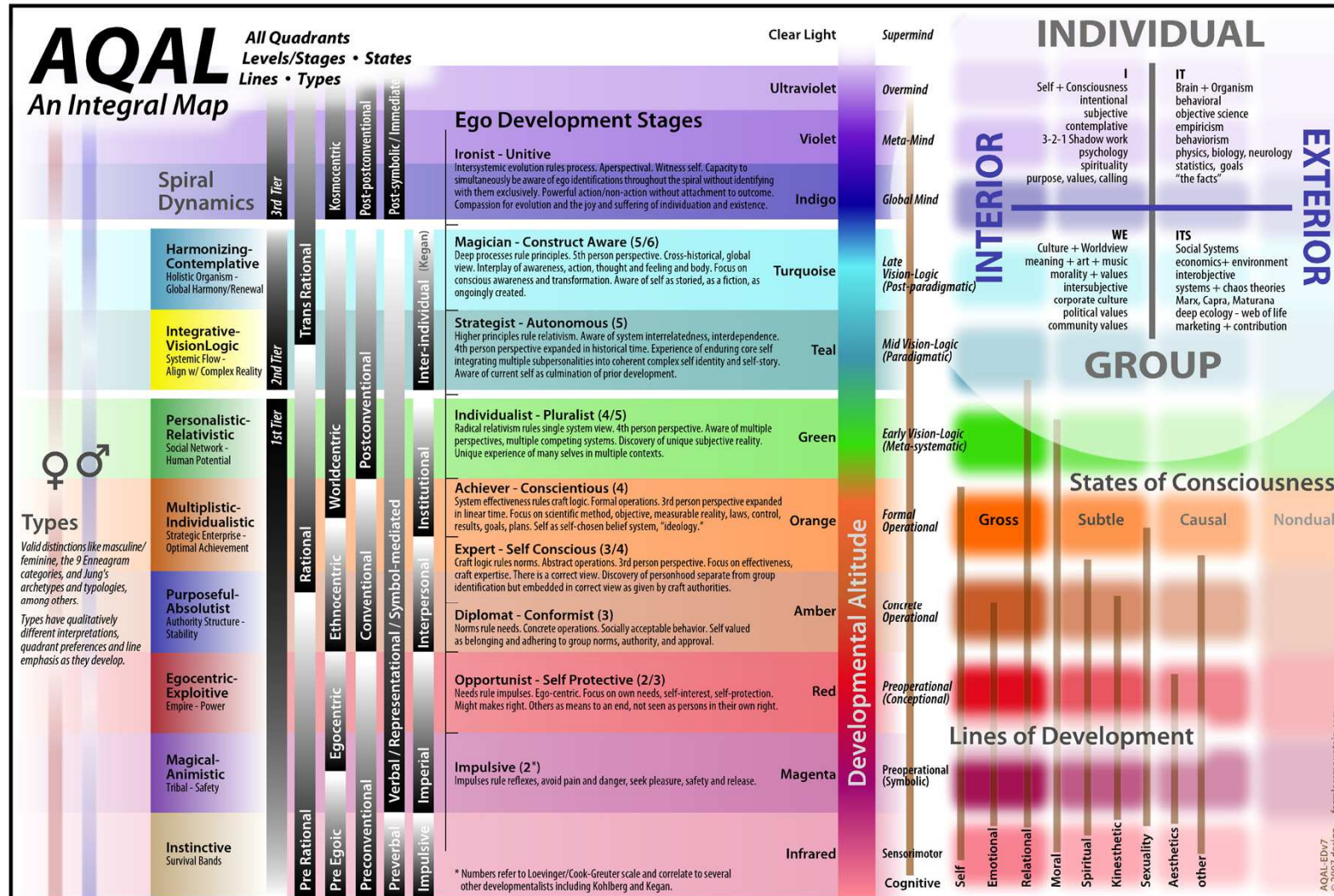
Source: IRIS, 2015 ; IRIS 2011.

4. GLOBAL REPORTING INITIATIVE

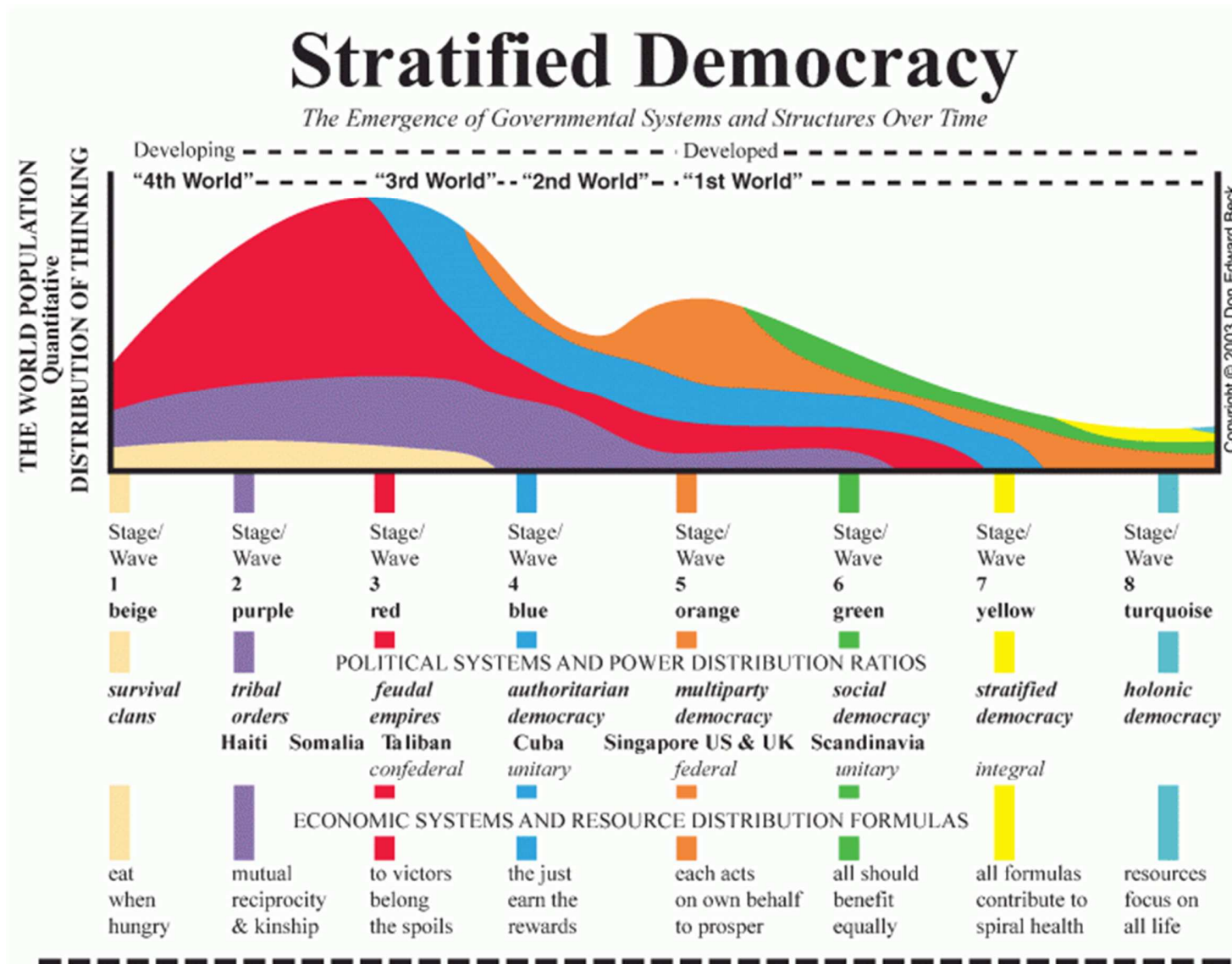
CATEGORIES AND ASPECTS IN THE GUIDELINES				
Category	Economic	Environmental		
Aspects ^{III}	<ul style="list-style-type: none"> • Economic Performance • Market Presence • Indirect Economic Impacts • Procurement Practices 	<ul style="list-style-type: none"> • Materials • Energy • Water • Biodiversity • Emissions • Effluents and Waste • Products and Services • Compliance • Transport • Overall • Supplier Environmental Assessment • Environmental Grievance Mechanisms 		
Category	Social			
Sub-Categories	Labor Practices and Decent Work	Human Rights	Society	Product Responsibility
Aspects ^{III}	<ul style="list-style-type: none"> • Employment • Labor/Management Relations • Occupational Health and Safety • Training and Education • Diversity and Equal Opportunity • Equal Remuneration for Women and Men • Supplier Assessment for Labor Practices • Labor Practices Grievance Mechanisms 	<ul style="list-style-type: none"> • Investment • Non-discrimination • Freedom of Association and Collective Bargaining • Child Labor • Forced or Compulsory Labor • Security Practices • Indigenous Rights • Assessment • Supplier Human Rights Assessment • Human Rights Grievance Mechanisms 	<ul style="list-style-type: none"> • Local Communities • Anti-corruption • Public Policy • Anti-competitive Behavior • Compliance • Supplier Assessment for Impacts on Society • Grievance Mechanisms for Impacts on Society 	<ul style="list-style-type: none"> • Customer Health and Safety • Product and Service Labeling • Marketing Communications • Customer Privacy • Compliance

Source: GRI, 2013.

5. INTEGRAL APPROACH: ALL QUADRANTS ALL LEVELS



Source: INTEGRAL LIFE, 2009.



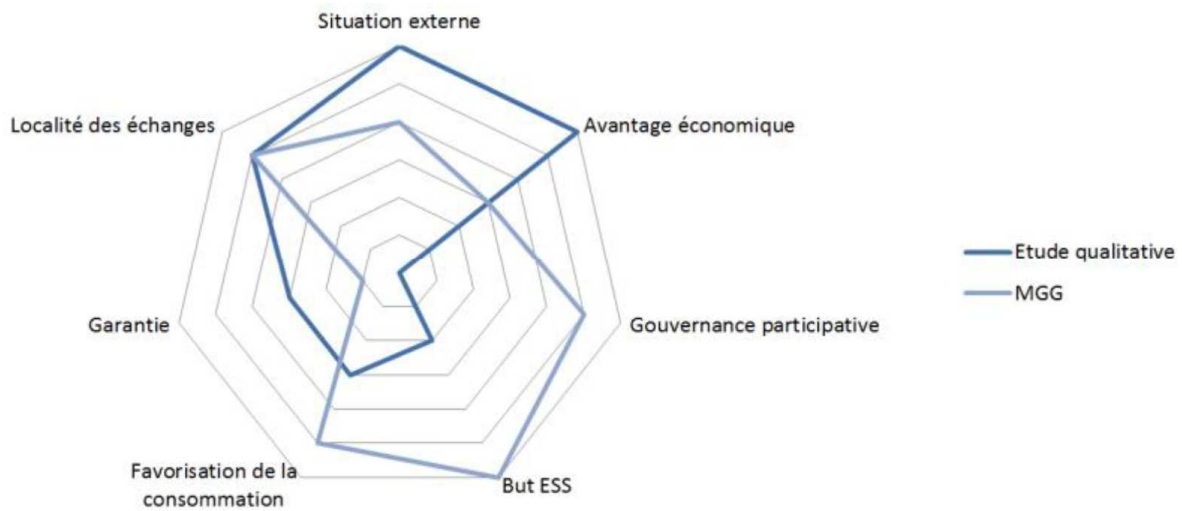
Source: MAALOUF, 2014.

6. KEY SUCCESS FACTORS FOR THE IMPLEMENTATION OF A SOCIAL AND COMPLEMENTARY CURRENCY

Key Success Factors	Operational, Structural and Organizational analysis
Stakeholders access to suitable SCC initiatives information	Clear aims and objectives
Clear concept of SCC value and use within the community	Utility for stakeholders membership
SSE network commitment	Alternative vision for the regional economy dynamic
Complementarity in front of the financial market	Creation of a common identity
Financial crisis	Financial autonomy development
Values awareness among business ethic and sustainable finance	Effective stakeholders and volunteer engagement
Exchange resiliency	Social cohesion in the SSE network
Public power support	Recognition, credibility and legitimacy

Source: NGINAMAU, 2013.

7. MONNAIE GRAND GENÈVE SERVICE PROPOSITION AND USERS' EXPECTATION⁴



Source: CHERVAZ, 2014.

⁴ *Étude qualitative* means qualitative study (users' expectation), *MGG* means Monnaie Grand Genève (service proposition), *situation externe* means external situation, *avantage économique* means economic advantage, *gouvernance participative* means participative governance, *but ESS* means social and solidarity economy objective, *favorisation de la consommation* means consumption incentive, *garantie* means warranty, *localité des échanges* means local exchanges.

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