World Business Academy
Taking responsibility for the whole

"War is too important to be left to generals," as the old adage goes. Likewise, monetary policy is too important to be left to monetary theorists. The brilliance of this Report is that it captures and maps – with crystal clarity – the fundamental connection between climate change, the cyclical boom and bust of our current monetary system, the fragility of the global economy, the political instability of most of the Western democracies, and the unsustainable overhang over it all of vast pools of international capital in the form of gambling receipts which we euphemistically call "derivatives".

The capacity to report succinctly and in an informative way on the interrelationship of these dynamic pieces is itself a credit to Bernard Lietaer and his associates. Even more important, the Report is so lucid and readable that the average executive can understand the extraordinary issues it presents in a way seldom possible with monetary theorists' articles.

The Report has illuminated essential questions usually left in the dusty corners of academia's ivory towers and brought them into full focus in the hurly burly of the market place. The Report conveys what we must do individually and collectively if we choose to have business enterprises grow in healthy and sustainable ways.

From the business viewpoint, monetary policy isn't an academic exercise:

- In normal times, the pro-cyclical amplification of the money creation process is extremely expensive for the business world; businesses tend to be always under- or over-staffed, under- or over-invested, at both ends of this amplified cycle.
- In times of crisis, when banks misstep they are in fact holding hostage the entire business world and increasing the risk for all businesses, big or small, from Main Street to Wall Street.
- The solutions presented in chapter VII show what businesses can and should do themselves to systematically avoid these problems.
- The full Report is an invaluable tool that enables C-Suite executives and their Boards to understand what they need to know and to do to lead their enterprises and maximize stakeholder value.

The World Business Academy has long been committed to advancing cutting-edge business information among business executives charged with navigating their businesses through the challenging times we live in. The Academy thanks Bernard Lietaer and his associates for presenting this Report to us, and encourages all levels of government and private enterprises to use the Report to begin a serious conversation on the critical issues the Report illuminates – while there is still time.

Rinaldo S. BRUTOCO
President

Triarchy Press

Money and Sustainability

The Missing Link

A REPORT FROM

THE CLUB OF ROME - EU CHAPTER

to

Finance Watch and the *World Business Academy*

Bernard Lietaer

Christian Arnsperger ~ Sally Goerner ~ Stefan Brunnhuber

THE CLUB OF ROME

THE CLUB OF ROME: EU CHAPTER - CoR-EU
Honorary President HRH Prince Philip of Belgium

Telling the Truth about Money

Introductory remarks to the Report to *Finance Watch* and the *World Business Academy*

We are not telling the truth about money. Yet money is at the core of the economy. And economy is ruling the world. It dominates human welfare from cradle to grave. It rules the use of the planet's natural resources and the quality of the environment. Today it is generally admitted that many limits of the Earth's ecosystem have been overshot. There is evidence that the present course is not sustainable.

Governments, media and most leaders make every possible effort to convince public opinion to stick to mainstream thinking. If society wishes to be or to become successful, they say, we have to keep faith in the current paradigm. The gospel still is that everything has to be expressed in monetary terms. And that there is no salvation outside the dominant financial systems and banking practices, a monopoly and a major power instrument. Closed systems are preferred to open ones. Complexity is avoided. Indeed a shortsighted vision on sustainable solutions…

There is, though, a lot of thinking and doing 'out-of-the-box' around the world. At conferences, in publications and increasingly through the Web, many authoritative voices are denouncing the blind spots of the present paradigm, inviting us to act without waiting any longer. Yet, their messages are not relayed by the mass media. They are ignored by most political leaders. They don't reach the public at large. At the same time, people are crying out for a radical change, not the least in the European Union.

The Club of Rome EU Chapter (CoR-EU), located in Brussels, aims to build bridges between the institutions of the European Union, their constituencies and the international Club of Rome, which has been a leading think-tank at world level for more than 40 years. The CoR-EU is acting as a catalyst of reflection on sustainable development in Europe. Its strategic aims for the next few years focus on the issues of money and governance. This includes initiating and facilitating cutting-edge research on ground-breaking concepts in these domains.

We asked our fellow Board member Bernard Lietaer to prepare a Report on money and sustainability that could contribute to a societal discourse on the implementation of EU policies for development in a wider global context, involving key public authorities and private sector decision-makers, the media as well as the public at large. With co-authors Christian Arnsperger, Stefan Brunnhuber and Sally Goerner he produced the present Report, which is fully endorsed by the EU Chapter of the Club of Rome.

While the issue is by definition global, the CoR-EU felt the Report should primarily be addressed on its behalf to a recognised, authoritative and independent European body. The most appropriate choice seemed to be *Finance Watch,* a public interest association, recently created on the initiative of members of the European Parliament. It is dedicated to making finance work for the good of society, strengthening the voice of society in financial regulation reforms by conducting citizen advocacy and presenting public interest arguments to lawmakers as a counterweight to private interest lobbying by the financial industry.

It made sense also to address the business community at large. We are delighted that the *World Business Academy*, a non-profit think-tank and network of business leaders, agreed to be a second recipient of our Report. Its mission is to inspire and help business assume responsibility for the whole of society, exploring its role in relation to critical moral, environmental and social dilemmas. Its objectives are to change business leaders' consciousness from self-service to servant leadership as well as to change the behaviour of the public at large, so it spends its money where its values are.

These objectives are close to the Club of Rome's heart.

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At the time of writing these remarks we witness the dismantling of the state as guarantor of public good. Almost everything is for sale in most EU countries. Austerity is imposed at all levels. Public unrest will continue to grow unless new governance structures replace the obsolete ones.

There is a great challenge here for the European Union. We dare hope that the publication of *Money and Sustainability: The Missing Link* will inspire many a decision maker and opinion leader to change course now, choosing new, creative approaches in monetary issues. We urgently need an increased moral consciousness at all levels.

The CoR-EU is indebted to the World Academy of Art and Science, represented by Ivo Šlaus, President, and Garry Jacobs, Chair of the Board and CEO, as well as to Felix Unger, President of the European Academy of Sciences and Arts for supporting this Report by co-signing these brief preliminary remarks.

Mark DUBRULLE
Member of the Club of Rome
President of the CoR-EU Chapter

Felix UNGER
President of the European Academy
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Ivo ŠLAUS
President of the World Academy
of Art and Science

Executive Summary

People concerned with sustainability in general – with issues like climate change, environmental degradation, food and water shortages, population growth and energy use – tend not to worry about the money system. Nor do they tend to look for solutions that involve monetary innovations. Even those economists who are also concerned about sustainability in principle are seldom aware that our money system systematically encourages unsustainable behaviour patterns that may end up threatening human survival on this planet. In fact, this Report shows that the current money system is both a crucial part of the overall sustainability 'problem' and a vital part of any solution. It makes clear that awareness of this 'Missing Link' is an absolute imperative for economists, environmentalists and anyone else trying to address sustainability at a , national, regional or global level. Aiming for sustainability without restructuring our money system is a naïve approach, doomed to failure.

So the money system is bad for social and environmental sustainability. But this Report also proves – perhaps more surprisingly – that the money system is bad for the money system itself. Unless we fundamentally restructure it, we cannot achieve monetary stability. Indeed, this Report also demonstrates that monetary stability itself is possible if, and only if, we apply systemic biomimicry – that is to say, if we complement the prevailing monetary monopoly with what we call a 'monetary ecosystem'.

Finally, the good news is that the information and communication revolution which we are living today is already pushing us in precisely the right direction.

Let's look at this idea of the money system as the 'Missing Link' in more detail. Our world is facing the immense challenges of a two-fold sustainability crisis. On one hand, climate change, rising greenhouse gas emissions and spikes in food and energy prices signal that our ways of producing and consuming goods and services have become unsustainable. On the other, repeated financial and monetary crises remind us that our money system has its own problems. The efforts to prop up and 'save' this money system during the 2007-2008 banking crash, followed by unsuccessful attempts to contain the toxic economic fallout with a 'Keynesian stimulus', have given rise to stark increases in government indebtedness. In the wake of the sovereign-debt and euro crisis, both the United States and the EU governments are currently being driven to financial extremes. Pensions, unemployment benefits and other social safety nets as well as investment in a post-carbon economy are all in jeopardy at precisely the time when they are most needed. In parallel, many public assets are in the process of being privatised.

Environmentalists often try to address the ecological crisis by thinking up new monetary incentives, creating 'green' taxes or encouraging banks to finance sustainable investment. Economists, in turn, tend to believe the financial crisis can be 'fixed' and kept from recurring with better regulation and a strict, prolonged reduction in public spending. But, whether they are advocating greener taxes, leaner government budgets, greener euros or dollars or pounds, could both camps be barking up the wrong tree?

It is our contention that the 'Missing Link' between finance and the environment, between money and sustainability, lies elsewhere. What this Report demonstrates beyond doubt is a structural monetary flaw – a flaw in the very manner in which we create money – that is generating our disconcerting problems. The inescapable conclusion? That, in order to face the challenges of the 21st century, we need to rethink and overhaul our entire monetary system.

CHAPTER I — Why this Report, Now?

This Report has three objectives:

- To provide evidence that the financial and monetary instabilities plaguing Europe and the rest of the world have a *structural cause* that has been largely overlooked. Addressing this structural cause is a necessary (but not a sufficient) condition for dealing with today's challenges.
- To place the monetary problem, and solutions to it, in the context of two global issues: climate change and population ageing. Indeed it makes clear that, in order to avoid the worst scenarios of climate change, massive investment is needed *now*: investment that will require governmental leadership and funding. Concurrently, the retirement of baby boomers reduces government revenues while adding pressure to already severely strained social programmes. Both issues will reach their peak during this decade, and neither is compatible with austerity measures. Continuing to follow the current monetary paradigm will render governments powerless to address these social and environmental challenges.
- To propose pragmatic solutions that can be implemented cost-effectively by citizens, non-profits, businesses or governments: solutions which would resolve *at a structural level* several critical sustainability issues currently facing many countries.

History will probably see the period 2007-2020 as one of financial turmoil and gradual monetary breakdown. History has also shown that systemic changes in the monetary domain happen only after a crash. Therefore, the time to wake up to monetary issues is now.

CHAPTER II — Making Economic Paradigms Explicit

Debates about economic issues rarely reveal the paradigm from which an economist is speaking. We start by making explicit the conceptual framework that underlies our approach, and compare it with other paradigms currently in use. Rather than defining environmental and social issues as 'externalities', our approach sees economic activities as a subset of the social realm, which, in turn, is a subset of the biosphere. This view provides the basis for the emergence of a new set of pragmatic tools, flexible enough to address many of our economic, social and environmental challenges.

We suffer from a three-layered collective 'blind spot' with regard to our money system. The first blind spot relates to the hegemony of the idea of a single, central currency. It is widely believed that societies have always, and must always, impose, as a monopoly, a single, centrally-issued currency, on which interest is charged. In fact, several interesting societies, such as Dynastic Egypt and Europe during the Central Middle Ages (from the 10th to the 13th century), have encouraged multiple parallel currencies. This latter approach has resulted in greater economic stability, equitable prosperity and an economy in which people naturally tend to consider the longer term more than we do.

The second layer of our collective 'blind spot' is a result of the ideological warfare between capitalism and communism in the 20th century. Although minute differences between these two systems have been studied *ad nauseam*, what they have in common has remained less scrutinised: particularly the fact that both impose a single national currency monopoly that is created through bank debt. The only significant difference between the two is that, in the Soviet system, the state owned the banks, whereas, in the capitalist system, this occurs only periodically (usually after banks 'too big to fail' experience serious difficulties).

From the 18th century onwards, the systemic *status quo* was institutionalised through the creation of central banks as enforcers of the monetary monopoly. This institutional framework spins the final layer of the 'blind spot'.

These three layers explain why there is such powerful and enduring resistance to reconsidering the paradigm of a single, monopolistically produced currency.

CHAPTER III — Monetary and Banking Instability

Today's foreign exchange and financial derivatives markets dwarf anything else on our planet. In 2010, the volume of foreign exchange transactions reached \$4 trillion *per day*. One day's exports or imports of *all* goods and services in the world amount to about 2% of that figure. Which means that 98% of transactions on these markets are purely speculative. This foreign exchange figure does not include derivatives, whose notional volume was $600 trillion – or eight times the entire world's *annual* GDP in 2010.

It was in this colossal market that the 2007 banking crisis broke out. As with every previous banking crash, governments felt they had no choice but to rescue the banking system, at whatever cost to the taxpayer. While this is clearly the biggest crisis we have experienced since the 1930s, it is not the first one. According to IMF data, 145 countries experienced banking crises. In addition, there were 208 monetary crashes and 72 sovereign debt crises between 1970 and 2010. That brings the grand total of 425 systemic crises, i.e. an average of more than ten countries in crisis every year!

The consequences in terms of unemployment, lost economic output, societal disruption and widespread human suffering are dramatic. The full financial costs of the 2007-2008 crisis are unprecedented. In the United States for instance, the $700 billion Troubled Asset Relief Program (TARP) is often talked about, although it is only the first slice of the rescue operation. Mention of this programme is usually followed by the comment: "most of that money has by now been reimbursed". The US case is of interest because it is the only country where both the government and the central bank have been forced by the courts to reveal the total costs of the rescue programmes related to the 2007-8 crisis. In addition to TARP, forty-nine other programmes have been involved in the US rescue at a total cost of $14.4 trillion. In comparison, the total US GDP in 2007 was $16 trillion.

The bailouts, followed by a large-scale Keynesian stimulus plan to avoid a deflationary depression, have resulted in enormous budget deficits and additional public debt. In the twenty-three countries most directly affected by the banking crash, government debt jumped by an average of 24% of GDP. Some European countries such as Iceland, Ireland, Latvia, Denmark and Spain fared worse, with increases in national debt between 30% and 80% of GDP.

The timing could not possibly have been worse. The tidal wave of baby boomers retiring over the next decade will make for huge additional pressures on public debt. A 2010 study by the Bank for International Settlements (BIS) estimated that, by 2020, age-related deficits will increase government debt to more than 200% of GDP in the UK and to 150% in France, Ireland, Italy, Greece, Belgium and the United States. This forecast is still optimistic because it rests on the assumption of low interest rates. By 2040, projected age-related expenses will propel the debt/GDP ratios for all these countries to somewhere in the range of 300% to 600%.

The solutions recommended by the financial sector are a package of immediate, coercive austerity measures and a call for governments to privatise *everything*. In countries where the list of targeted government assets is known, this includes all public roads, tunnels, bridges, parking meters, airports, all government-owned office buildings, as well as water and sewerage systems. For the US, where data are available, this amounts to $9.3 trillion of federal, state and city assets. One assessment of the US situation by the financial sector is as follows: “As soon as the political pain from cutting public services becomes greater than the cost in terms of votes lost due to selling assets, this market will take off. At the grass-roots level, this critical political pain threshold has now been reached.”[1]

Similarly in Europe, the UK has announced a £16 billion privatisation programme; in Italy, 9,000 publicly owned properties were put up for sale by the Berlusconi government; France’s Sarkozy government sold all the country’s toll roads for €5 billion; the conditions attached to the Greek rescue package included a €50 billion privatisation; and the list goes on. These pressures will remain pervasive for a long time. But what happens afterwards? Why would governments become more credit-worthy once they have to pay rent for their offices, and have to pay tolls for their employees to drive to work on roads that were once publicly owned?

Before proceeding blindly on this course, would it not be useful to determine whether, far from the current crisis being merely another case of gross financial mismanagement, there is an underlying systemic cause common to all financial and monetary instabilities?

CHAPTER IV — Instabilities Explained: The Physics of Complex Flow Networks

Since the 19th century, mainstream economics has classified the economic system as a closed one. Closed systems have relatively little interaction with other systems or with the outside environment, while open systems do. An intellectually convenient feature of closed systems is that they reach static equilibrium when left undisturbed.

This report proposes that we view the economy as an open system consisting of complex flow networks in which money circulates between and among various economic agents. It has recently become possible to measure with a single metric the sustainability of any complex flow network on the basis of its structural diversity and its interconnectivity. A key finding is that any complex flow system is sustainable if, and only if, it maintains a crucial balance between two equally essential but complementary properties: its efficiency and its resilience. When too much emphasis is put on efficiency at the cost of resilience, diversity is sacrificed. This will automatically result in sudden systemic collapses.

We have a worldwide monetary monoculture in which the same type of exchange medium is put into circulation in every country: a single national currency created through bank debt. Such a monoculture tends to spawn a brittle and unsustainable system. The structural solution needed to give sustainability a chance, albeit totally

1 *Euromoney*, April 2010, p.85.

unorthodox, is to diversify the available exchange media and the agents that create them. In short, in place of a monetary monoculture, we need a *monetary ecosystem.*

CHAPTER V — The Effects of Today's Money System on Sustainability

Monetary or financial crises can be highly destructive and are obviously not compatible with sustainability. What can be more difficult to perceive is how some mechanisms built into our current money system shape individual and collective behaviours, even when it is not in crisis. On the positive side, modern money should be credited with triggering an explosion of entrepreneurial and scientific innovation without historical precedent. However, there are also five other mechanisms that turn out to be directly incompatible with sustainability. They are:

- *Amplification of boom and bust cycles:* Banks provide or withhold funding to the same sectors or countries at the same time, thus amplifying the business cycle towards boom or bust. Such amplification is detrimental for everyone, including the banking sector itself. In the worst-case scenario, we end up where we are now: when banks stop trusting each other.
- *Short-term thinking:* 'Discounted cash flow' is standard practice in any investment evaluation. Because bank-debt money carries interest, the discounting of all future costs or incomes inevitably tends to lead to short-term thinking.
- *Compulsory growth:* The process of compound interest or interest on interest imposes exponential growth on the economy. Yet exponential growth is, by definition, unsustainable in a finite world.
- *Concentration of wealth:* The middle class is disappearing worldwide, with most of the wealth flowing to the top and increasing rates of poverty at the bottom. Such inequalities generate a broad range of social problems and are also detrimental to economic growth. Beyond the economic issue, the very survival of democracy may be at stake.
- *Devaluation of social capital:* Social capital which is built on mutual trust and results in collaborative action has always been difficult to measure. Nevertheless, whenever measurements have been made, they reveal a tendency for social capital to be eroded, particularly in industrialised countries. Recent scientific studies show that money tends to promote selfish and non-collaborative behaviours. These behaviours are not compatible with long-term sustainability.

Far from being a behaviourally neutral and passive medium of exchange, as generally assumed, conventional money deeply shapes a range of behaviour patterns, of which the five listed above are incompatible with sustainability. The continual imposition of a monopoly of this type of currency thus directly affects the future of humanity on our planet.

CHAPTER VI — The Institutional Framework of Power

The history of money is intimately entwined with power. Historian Niall Ferguson shows how the modern monetary framework evolved to finance wars through the emergence of four key institutions: parliaments, a professional tax bureaucracy, national debt and central banks. This 'Square of Power' was first optimised in 18th century Britain to give birth to industrialisation and to an global empire. These same monetary arrangements spread around the world to become the fundamental structure in place practically everywhere today.

It is often assumed that the relationship between the banking system and governments has remained unchanged for centuries. A case study of France shows that this is not necessarily the case. Indeed, since 1973, the French government has been forced to borrow exclusively from the private sector and therefore pay interest on new debt. Without this change, French government debt would now be at 8.6% of GDP instead of the current 78%. Furthermore, the Maastricht and Lisbon Treaties have generalised this same process to all signatory countries.

One radical solution would be for government itself to issue a currency that it later collects in the form of tax payments. This solution was known in the 1930s as the 'Chicago Plan'. Nationalising the monetary creation process confines banks to the role of mere money brokers. Although the Chicago Plan dramatically reduces the possibility of future banking crashes and instantly resolves all sovereign debt crises, it merely replaces a private monopoly with a public one. This does not get us any closer to the monetary ecosystem which is called for.

The 'official story' is that governments, just like any household, must raise the money needed to pay for their activities. This is done either through income (by taxation) or through debt (by issuing bonds). In this story, banks simply act as intermediaries collecting deposits and lending parts of that money to creditworthy individuals and institutions, including governments. However, since 1971, when fiat currency – that is, money created out of nothing – became universal, this story has been a complete fiction.

The Fiat Currency Paradigm provides an alternative interpretation of this story. With fiat currency, the primary purpose of taxation is to create demand for a currency that has otherwise no intrinsic value. The obligation of paying taxes only in the chosen currency is what gives the currency its value. A sovereign government can therefore choose what it wants to attribute value to by requiring it in the form of tax payments. Governments can thus determine the kind of efforts its citizens must make to obtain this chosen currency. Although this interpretation has impressive academic backing, it is being ignored in favour of the 'official story'.

In the 'official story', governments are completely powerless in the face of an anonymous and all-powerful 'financial market'. In the Fiat Currency Paradigm, given the nature of fiat currency, governments could conceivably choose to give value to other currencies in parallel to bank-debt money. We propose that meeting the challenges of the 21st century will require them to do so.

CHAPTER VII — Examples of Private Initiative Solutions

Nine examples of innovative motivation systems are presented in this and the next chapter. They can all work in parallel with conventional bank-debt money, use cost-effective electronic media, and should be as transparent as possible to their users. By making these systems more self-policing, such transparency could go a long way towards reducing potential fraud. The systems are presented in order, starting with the easiest and least controversial and ending with the most complex and revolutionary. The first five can be started privately, either by NGOs or businesses. They are:

- *Doraland*: a system proposed for Lithuania, with the purpose of creating a 'Learning Country'. In such a system everybody can volunteer to learn and/or teach, and be rewarded in Doras, a currency whose purpose is to help people realise their dreams. This would best be implemented by an NGO.
- *Wellness Tokens*: an NGO initiative working in cooperation with preventive health care providers to deal with issues even before they arise. Wellness Tokens reward and encourage healthy behaviours and thereby reduce long-term medical expenses for society.
- *Natural Savings*: a financial savings product that is fully backed by living trees. It would be a savings currency with inflation protection superior to that of any national currency, while simultaneously providing an incentive to reforest areas and thereby creating long-term carbon sinks. Another of its qualities: it works well for micro-savings.
- *C3*: a Business-to-Business (B2B) system that reduces unemployment by providing working capital to small and medium-sized businesses. The network's clearing currency would be fully backed by high-quality invoices and convertible into conventional money on demand. The insurance industry and banks both play critical and profitable roles in this system. C3s are working today in Brazil and Uruguay, and the latter country accepts C3s in payment of all taxes.
- *TRC*: the Trade Reference Currency is a global B2B currency proposal that would make it profitable for multinational companies to think long-term, thereby resolving the conflict between short-term financial corporate priorities

and long-term social and environmental needs. It would be an inflation-proof and crash-proof global currency fully backed by a basket of commodities and services relevant to the global economy. The TRC would be a global currency distinct from any existing national currency, thus reducing the risk of geopolitical tensions around monetary zones of influence.

CHAPTER VIII — Examples of Governmental Initiatives

The next four examples of innovative motivation systems are governmental initiatives started at a city, regional or country level. They are:

- *Torekes*: a city-based initiative to encourage volunteering while promoting green behaviour and social cohesion in a poor neighbourhood. It has been running since 2010 in the city of Ghent, Belgium.
- *Biwa Kippu*: a proposal for the Biwa Prefecture in Japan to fund the labour components of the ecological restoration and maintenance of Lake Biwa, the oldest and largest lake in Japan. It could be either voluntary or obligatory for households in the area.
- *Civics*: a proposal empowering a city or region to fund civic activities without burdening their budgets. These activities could provide the labour component for social, educational and/or ecological projects. Such a system could also take the form of a compulsory contribution.
- *ECOs*: a national or Europe-wide system making it possible to fund critical components of large-scale ecological projects, such as climate change prevention and adaptation projects. It would be an interest-free currency issued by governments. Governments would require businesses to make a contribution proportional to their total sales, payable only in ECOs. This is the most controversial of the nine proposals, because it would be seen as a new type of corporate tax on the largest corporations. Such an initiative may require governments to 'declare war' on run-away climate change.

Not all nine systems – five private and four public – have to be implemented before the benefits of different monetary ecosystems start to become visible. Each community, city, region or country can pick and choose which kinds of system it implements. Together with a dozen other designs already in operation around the world, each combination of new exchange media would give an appropriate monetary ecosystem a chance to emerge. Some of these systems will fail. However, just like in a forest, the most successful types will spontaneously tend to spread. We still have much to learn, particularly about which governance structures are most appropriate for each type of system.

CHAPTER IX — Beyond the Limits to Growth?

H.G. Wells claimed: "History is a race between education and catastrophe". The stakes in this particular race have never been as high as they are today. Learning will be needed on everyone's part:

For today's elites, particularly the financial elites, perusing the classic works of economic historian Arnold Toynbee or more recently of Jared Diamond[2], might be relevant. Toynbee attributed the collapse of twenty-one different civilisations to just two causes: too much concentration of wealth, and an elite unwilling until too late to shift priorities in response to changing circumstances. Diamond focuses on environmental degradation as a proximate cause for civilisation collapses. Currently, we are simultaneously pushing the limits on all three of these causes. History teaches that even elites are not spared in a collapsing civilisation.

For those trained in economics, the necessary mental switch required is to look at the paradigm implicit in the teachings they received, and compare it to the approach used in this report.

For the population at large, perhaps the most important learning needed is to understand non-linearity, specifically the difference between linear and exponential growth. We are now dealing with an increasingly non-linear world. Grasping these different dynamics will be useful in understanding what is happening to us, and what to do about it.

In closing, it would be naïve to think of complementary currencies as a magic bullet to solve all our current and future problems. However, rethinking our money is a necessary ingredient in any effective solution. We can no longer afford to overlook complementary currencies as the 'Missing Link' that can deliver a money system which promotes sustainability rather than undermining it at every turn.

2 Jared Diamond, *Collapse: How Societies Choose to Fail or Succeed* (2005).