

TRANSITIONS TOWARDS SUSTAINABILITY

*Seven Principles Inspiring the Green Economy. A Contribution
to the Preparations of Rio + 20 in 2012*

Jan Jonker, Jos Reinhoudt, Harry te Riele

Working Paper, November 2011

Summary

Over the next few decades, the creation of a green economy will draw a line between two eras in industrialised countries. Currently, the realisation of such a green economy is a dominant social, political and organisational challenge. This paper looks at this challenge from a transitional perspective. The main issue is organising society in such a way that encourages everyone involved to contribute towards a green economy. This paper aims to explore how the present era can have a favourable outcome.

Materially speaking, cyclic thinking is central in a green economy. In essence, this is somewhat different than the still common belief that compensating the planet's 'natural' losses through citizens and companies is 'sustainable'. Cyclic thinking is about looking at streams of resources, products and product-service combinations from a cyclic point of view with regard to both producing and consuming, while applying an integral (cost) price level. The green economy is a cyclic economy, which turns the accepted linear system of the economy on its head. Rebuilding our 'scrap' economy to a cyclic one does not happen on its own; on the contrary, it requires a complete revolution. Several basic principles of business economy must be changed and reformulated, which, in turn, will influence many of society's connected mechanisms.

In order to stimulate a smooth and swift transition towards a green economy, this document suggests seven principles, followed by some practical mechanisms to which the green economy is linked. Prior to that, the paper highlights some key concepts and briefly explains the urgency of this transition. This document has been written as a 'working paper' – a discussion piece – to contribute to a transition that the authors feel has tremendous value.

(1) INTRODUCTION

In 2012, the Brundtland Report entitled 'Our Common Future' will celebrate its 25th birthday, and the same year also marks 20 years since the UN World Summit took place in Rio de Janeiro. These are two memorable beacons in a difficult, if not contradictory, process of social, institutional and organisational maintenance that has become known as 'sustainable development'. Have we moved any further in that process during these 25 years? The answer is clearly 'yes'. Through experience, some of it difficult, many social layers have been involved in the process of sustainability.¹ Some sustainability issues (including demographic changes, scarcity and geopolitical shifts) will clearly not go away. Currently, it is mainly citizens and corporations that debate the subject of sustainability. While governments (especially those across Europe) have had a stimulating and perhaps leading role in the past, the issue does not seem to be especially prominent on the current agenda. In retrospect, however, it can be said that *all* parties, including all the troubles that comes with it, have started working² on the issue; these include government, knowledge institutions, consultancies, business, consumer, agents and campaign groups. We have gradually entered a process of (incremental) change, a process that should lead to fundamental changes. Such radical and fundamental changes are referred to here as 'transitions'. The more fluent the transition, the less economic and psychological damage our society will suffer. However, there are some complications.

Complications in transitions

One complication is that not all social themes make the transition at the same pace. Some themes and systems³ are leading in the transition dynamics, while others are following developments. Eventually, all themes must start moving towards sustainability, a process in which they will be hindered by many kinds of non-sustainable impulses. In addition to the fact that systems already differ in terms of their pace, the players within the systems are not exactly synchronised either. Governments, campaign groups and scientists sometimes move far ahead of their troops, while at other times they are far behind. Many entrepreneurs and shareholders do not become active until their yearly results are endangered. A third point causing tension is that every social component in the process of transition has its own dynamics. This makes it unavoidable for one change to require more time than the other, just as a police decree is easier to change than the constitution.

¹ An accepted definition of 'sustainability' is sufficient here, namely: 'Providing for the needs of the current generation without compromising the possibility for future generations to provide for their needs' (Brundtland, 1987). For an overview of definitions as well as the debate on them, see Jonker, Diepstraten and Kieboom (2011).

² The following paragraphs are derived from the essay entitled 'Thinking about System Finance, Program Learning for Sustainable Development', September 1st 2011, with minor changes to the text.

³ When referring to systems, think of functions like energy supply, production and consumption, agriculture and nutrition, care and insurance, finance, construction, care and spatial planning.

Transitions towards Sustainability

This logic legitimises radical interventions in the old economy. Without radical interventions, systems and institutions could come to a stop. The current euro crisis could serve as a worrying illustration of this. In addition, valid research has repeatedly shown that, in the long run, the costs of ignoring the sustainability debate are higher than the costs of the investments contributing to solutions. This shows that it makes good business sense to apply the principles of the green economy as a guide for policy measures as fast as possible.

What is a green economy?

The term 'green economy' was first used by Pearce et al. in 1989. Pearce noted that sustainable development is not possible in the current economy, which is dependent on exhaustive resources like oil and coal, and in which the planet Earth is secondary to economic growth (UNEP, 2011). The green economic model is low on carbon dioxide, efficient in its use of natural resources, and does not exclude groups of people. The UN Environmental Program (UNEP) defines the green economy as: 'an economy that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities.'

The fact that this does not happen has led to numerous understandable accusations being levelled at policy makers, governors and decision makers. The dynamics are stronger in surrounding countries than in the Netherlands, where the rate of innovation lags behind. Holland has barely been able to involve social components of sustainability in the debate and the country was unable to transform its knowledge advantage and moral leadership from the 1980s and 1990s into a leading market position. Many governments are mainly working on reciprocal activities.⁴ While some countries (such as Germany, Finland and Denmark) are well on their way towards a green economy, others are more concerned with the question of whether the dynamics of sustainability achieve a desirable volume and impact with an eye on the long-term position of the economy. This process of hesitation and lack of direction leads to a situation in which countries that once guided the process towards development (such as Holland, Denmark or Norway) are now at the bottom of sustainability benchmarks.

For a long time, the debate has not been about whether sustainability will become a crucial element for the (future) economy. Instead, it has focused on the question of how the realisation of a green economy can be accelerated and what part various stakeholders in a society are going to play in such an economy. This is also where things go wrong. There is no master plan in the making. There is a lack of vision. There are no ambitious goals, nor a well formulated strategy that fits the Netherlands' natural strengths. This lack of control does not favour the positions of any country or stakeholder. This disappointing situation does not fit

⁴ An illustrative document is: Information and Analysis for the 'State of the Economy', Standpoints on the strengths and weaknesses of the Dutch economy, the place of the Netherlands in various (international) rankings, Ministry of E, L & I, The Hague, August 10th 2011.

Transitions towards Sustainability

the Netherlands' 'traditional' organisational talent and capitals, its level of knowledge on sustainability, or its creative talents. It does not at all fit a current situation in which citizens repeatedly show a great willingness to step up when it comes to sustainability and creating the future.

From 'aside' to 'at hand'

In 25 years, the political, institutional and organisational landscape regarding sustainability shows has shifted – albeit sometimes reluctantly – from being a matter aside to becoming a matter at hand. This is a positive situation. From the government's perspective, there have been repeated and differently addressed policy initiatives over the last 25 years to accelerate the process towards sustainability by means of an innovation route. At this moment, provinces, communities and inter-regions, for example, are developing louder and more specific sustainable visions on such issues as energy, mobility, health and employment, in which the choice, although somewhat hesitant, is often to 'localise' those sectors. With a time span of about 25 years, the choice is autarky in those fields. Monitors (PBL, RIVM and others) keep track of the progress made.

A broad range of company activities have shown that sustainability has entered the boardroom. More and more, these companies want to position themselves in this landscape and develop strategies that are at the heart of their business proposition. Although company interventions are still predominantly focused on efficiency measures, practically every class of business has positive extremes that are helping to move further towards developing thinking that shapes the actual transition; either in-house or in value chains. Progress is also being made in the field of finance, partly because sustainability is becoming important in many export countries and partly because the financial sector is overwhelmed with criticism of its practices in the 1990s and 2000s. Therefore, there are currently lines of thought, calculation methods, leaders, alliances, international norms; there are juridical dynamics, there are 'flagship' products, and there are management principles. Eradicating sustainability in many of those circles is no longer possible. Finally, of course, there is the 'common' everyday consumer, who wants to have something to do with sustainability while shopping in the supermarket, at home or on vacation. Such consumers want to be part of a bigger societal quest, to feel useful, to contribute to shaping society. As a result, thousands of initiatives, both small and large, occur in the 'under current' of society. Some initiatives can turn into inspiring triggers, but most adaptations take place locally, against the background of a world in which savings and scarcity are dominant.

Unilever Sustainability Plan

'Two billion times a day, somebody, somewhere, uses a Unilever brand. ... We have to develop new ways of doing business which will increase the social benefits from Unilever's activities while at the same time reducing our

Transitions towards Sustainability

environmental impacts. ... Our plan isn't just the right thing to do for people and the environment. It's also right for Unilever: the business case for integrating sustainability into our brands is clear. Our impact goes beyond our factory gates. The sourcing of raw materials and the use of our products by the consumer at home have a far larger footprint. We recognise this and so our plan is designed to reduce our impacts across the whole lifecycle of our products. This full lifecycle approach is both ambitious and, we believe, unique amongst global FMCG companies. The Plan contains over 50 concrete targets that will: Help more than one billion people improve their health and well-being, halve the environmental impact of our products, source 100% of our agricultural raw materials sustainably.' (source: www.sustainable-living.unilever.co, retrieved 28.10.2011)

Agenda 21 and Rio+20

Two thousand and twelve will be a memorable year. Twenty-five years after Brundtland and 20 years since the first Rio World Summit, the United Nations Conference on Sustainable Development ('Rio + 20') will take place in Rio de Janeiro (Brazil) between June 4th and June 6th. This 'summit' follows a tradition of top meetings, such as Johannesburg, New York, Kyoto, Copenhagen and also Rio de Janeiro itself ('Rio 1992' marked the launch of 'Agenda 21', the UN programme on sustainable development). Agenda 21 included an action plan to be adhered to globally, nationally and locally by organisations of the UN, other governments and the most important organisations in all fields in which people influence the environment. This agenda was the first global programme to focus on sustainability in action. Five years after the Brundtland report, a coherent group of measures of 40 chapters and 179 nations approved the report. The report entailed a group of measures with clear focus and priorities, and realism in the process of implementation. It was unique and guiding. With that, Rio 1992 brought hope for the future.

In the 20 years that have passed since Rio 1992, the Millennium Assessment has been conducted, the Millennium Development Goals (MDGs) have been established and the UN Global Compact Program has been launched. At the same time, partly due to the failed and stale climate summit in Copenhagen, there have been growing doubts about the role and impact of 'world summits'. Indecisiveness, deceitful behaviour, political games, sweet talking, last-minute decisions and other such machinations have not helped the image – the 'brand' – of such summits. It may be that societies are fed up with costly encounters that they feel ultimately lead to nothing but talk.

Nevertheless, there will be a Rio+20 in the summer of 2012. Entitled 'Making it Happen', the meeting's goal is '...to secure renewed political commitment for sustainable development, assess the progress to date and the remaining gaps in the implementation of the outcomes of the major summits on sustainable development, and address new and emerging challenges'. The two central themes are (1) a green economy in the context of sustainable development and poverty eradication; and (2) an institutional framework for sustainable

Transitions towards Sustainability

development. (www.uncsd2012.org/rio20/). The latter theme can be seen as an elaboration of the 'how' question, while the goal is précised in the former theme (1). There is no question that the dream of achieving a green economy, sustainable development and banishing poverty would be wonderful. The two themes of Rio+20 – a green economy and an institutional framework, both of which aim towards sustainable development – can be interpreted as attempts to remove the barriers facing process towards a sustainable society.

However, it is possibly even more important that the agenda of Rio+20 draws attention to daily economic activities. More than 40 years after 'Limits to Growth' and 25 years after 'Our Common Future', our economic and organisational organising will become a central theme, shifting attention in the process of sustainable development away from 'nature and environment' towards 'economy'. Of course, one could say that the idea of the green economy is only just gaining political and international attention now, almost 25 years after its 'invention'. Although the question of why the issue is suddenly being rediscovered is a good one, perhaps the debate should focus for now on the issue itself.

About Rio+20

'The United Nations Conference on Sustainable Development (UNCSD) is being organised in pursuance of General Assembly Resolution 64/236 (A/RES/64/236). The conference will take place in Brazil on 4–6 June 2012 to mark the 20th anniversary of the 1992 United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro, and the 10th anniversary of the 2002 World Summit on Sustainable Development (WSSD) in Johannesburg. It is envisaged as a conference at the highest possible level, including heads of state and government or other representatives.

The conference will result in a focused political document. The objective of the conference is to secure renewed political commitment for sustainable development, assess the progress to date and the remaining gaps in the implementation of the outcomes of the major summits on sustainable development, and address new and emerging challenges.' (source: <http://www.uncsd2012.org/rio20/index.php?menu=17>)

Against this background, this paper develops an economically driven look at the transition 'road' towards a green economy. The main economic vision is simple: individuals, companies and other institutions react to incentives, some of which lead to sustainable behaviour and others to non-sustainable activities like pollution or exhaustion of resources. The main task is then to establish and direct society in such a way that adequate incentives leading to sustainable organising behaviour are encouraged and 'perverse incentives' gradually disappear. An alternative, which we believe would be less effective, would be to somehow legally enforce sustainable behaviour.

Transitions towards Sustainability

Therefore, this paper is used to point out the 'drivers' that can stimulate a green economy. This document was originally written in Dutch and focused on the Dutch government, which is capable of expressing its standpoints internationally. Therefore, it is not about citizens' and companies' own responsibilities, but about what governments can do to create conditions and frameworks that lead to more sustainable behaviour being exercised by all involved parties. The Dutch document was then translated to create a wider audience for the original working paper, which can be found at www.nprio2012.nl.

A government has a limited amount of tools at its disposal to accomplish transition, such as law, taxes, subsidies, letters of intent, setting an example and lobbying with other parties. There is often too little room for developing new tools or adjusting existing ones, but creating a long-term framework that can rise above the daily humdrum and conflicting interests of the current political debate makes actual transitions possible, although difficult. The policies of countries like Germany, England, Denmark, Brazil and, recently, even China, have clearly shown long-lasting ambitions and clear steps towards a green economy.

(2) THE CHALLENGES OF SUSTAINABILITY

There is an overwhelming amount of research on the most important challenges in the field of sustainability (see, for example, the above-mentioned Millennium Assessment *(www.greenfacts.org), the Sustainability Survey of SustainAbility and GlobeScan (2009)). In this context, it is not useful to repeat all this research on the degradation of natural systems and mankind's direct and unmistakable influence on it. If one takes the 1972 'Limits to Growth' research as a starting point, all themes from this report have gradually been mentioned and researched extensively more than others.

'Everyone in the world depends completely on Earth's ecosystems and the services they provide, such as food, water, disease management, climate regulation, spiritual fulfillment, and aesthetic enjoyment. Over the past 50 years, humans have changed these ecosystems more rapidly and extensively than in any comparable period of time in human history, largely to meet rapidly growing demands for food, fresh water, timber, fiber, and fuel. This transformation of the planet has contributed to substantial net gains in human well-being and economic development. But not all regions and groups of people have benefited from this process—in fact, many have been harmed. Moreover, the full costs associated with these gains are only now becoming apparent.'
(source: www.maweb.org)

Society at large is becoming more aware of what is going on and the fact that something must be done about it (NMP, 2007, SCO, 2010). As Hajer (2011:17) put it: 'The essentials of

Transitions towards Sustainability

the sustainability challenge are sufficiently known. The problem is not that the people are unwilling to hear the message; it is much more the lack of a convincing action perspective.

Every list, from over-fishing to the shortage of raw material, from intergenerational pollution to poverty, differs from region to region, from population to population and from country to country. Every analysis leads to its own priorities. Nonetheless, there is no longer a great deal of discussion about what are considered the main issues. Somewhat sadly, an overview of sustainability challenges usually looks something like this:

- Exhaustion of raw materials, including (fossil) fuels, water, rare earth materials, etc.
- Pollution, plastic soup, chemicals, acidification
- Destruction of ecosystems (and, consequently, biodiversity), deforestation, erosion
- Poverty (and consequently: hunger, migration, diseases, conflicts, misery)
- Loss of social capital (the social 'we'); a lack of involvement in the environment

Of course, other classifications are also imaginable. Energy and climate are often combined into one issue. Poverty can easily be 'expanded' by adding other social problems like injustice, violence, education, discrimination and corruption. Moreover, underneath the surface, all of these issues are intertwined through a network of relationships. Or, as Hajer put it (2011:21):

'The important sustainability issues of accelerating climate shift, on-going loss of biodiversity and the fact that the surface of Earth will be put to the test even further due to a growth of the world's population, are well known. Climate change, loss of biodiversity, food supply and use of materials are large and connected challenges. With nine billion people in 2050, fundamental changes are needed if we want to have sufficient resources, food, water and energy and secure access to those resources. Developing countries as well as upcoming and Western economies all need to do their part in that.'

Therefore, it is not useful to want to solve one problem and not focus on the others. Fighting symptoms, although it may sometimes be necessary, is not a long-term solution and can even be counterproductive. It also is not useful to place the responsibility for a possible solution solely on a government, companies or citizens. By definition, 'single' parties could at best achieve suboptimal solutions. Collaboration is and will remain key. Recent history, especially the last 25 years, has shown that sub-optimal solutions do counteract immediate damage. However, it is virtually always too little, too late. Moving towards a green economy requires a different, more fundamental approach that focuses on the long term, provides a framework in which a difference between left and right becomes irrelevant, and gives the

Transitions towards Sustainability

term 'common good' its value back. Such an approach is of a more principled nature and is made specific by means of mechanisms that, successively and in relation to each other, eventually lead to transition. Twenty years after Rio and 25 years after Brundtland, the conclusion is unavoidable: awareness about sustainability is a widely acknowledged phenomenon, but the step to it, the step towards a fundamental change of our principles and mechanisms to create sustainability, is being taken very slowly and is therefore insufficient for addressing urgent issues. Efforts to change this should focus on identifying the underlying principles and mechanisms that can and should be influenced in order to accelerate transition. Those basic mechanisms are perhaps more important than the issues themselves. Accordingly, this paper has set out to name and frame a number of those transition-mechanisms and the principles that we feel are necessary to support them.

(3) RIO +20 PRINCIPLES SUPPORTING TRANSITION

Instead of solving the issues separately, the only possible way towards a green economy seems to be to gradually and integrally change the systems responsible for these developments. More and more, this seems to be possible. Strange as it may sound, recent crises have had a positive effect on the willingness to change, both national as well as international. We are slowly getting ready to agree on principles that will form the basis for introducing institutional mechanisms. Together, these principles are conditions for constituting practical interventions that help shape the actual transition. A number of those principles are presented below; we have named these the 'Rio+20-principles'. They are all about creating and fostering sustainable connections between here and there, today and yesterday, now and later. The aim of these principles is to pull through a collection of emerging viewpoints that enable sustainable viewpoints that are already present.

These principles are guiding without being forceful, which means that they offer room for situational interpretation, both in Western society and elsewhere. This is important in order to avoid succumbing to the 'not invented here' syndrome. Besides, it is important to use principles that transcend party or 'government', irrespective of a temporary mandated colour on left or right.

3.1 Multiple value creation

Multiple value creation should be the leading principle of production. The essence of this principle is the use of a different concept of profit, one in which there is room for more than just a company's financial result. The essence is the simultaneous enhancement of various capitals: social, ecological, institutional and financial. Contributing to solving social issues becomes central, rather than maximising financial results. This multiple value creation approach contributes to the company's robustness and suppresses the urge for sub-optimisation, where everyone attempts to realise what is best for them without considering the negative effects on others. This way of thinking contributes to continuity and emphasises

Transitions towards Sustainability

the fact that companies are not single entities, but an integral part of society. If efficiency actually comes into conflict with this line of thinking then, by definition, the latter wins.

3.2 Laggards finance innovation

Tax systems (taxes, fixed payments, duties) function in such a way that laggards contribute to the efforts and risks of the pioneers. Examples are easy to find: grey energy becomes more expensive in order to pay the preparation and innovation risks of green energy. Or, in the beginning, new protein products will partly be financed by returns from pork. The most difficult phases of 'green' or 'clean-tech' innovation will be simplified by means of cross-finance. This leads to a relatively simple way to encompass invisible social costs, such as pollution and exhaustion of resources, in the process of price setting.

3.3 A renewed balance between local and global

The idea of this principle is to strive for a renewed balance between local and global activities. Alienation could occur if local activities are influenced by global developments, but local or regional organisations have no ways of influencing such activities. An example of this is the 'footloose capital' that flashes around the world through exchange markets. The credit crisis that is partly a result of this affects local communities, which are unable to defend their interests. Therefore, the aim is stimulate localisation where it is possible and useful. Examples can be found in new regional entities that revolve around energy, health or food. In many situations, the 'business case' in the form of cheaper transport, lower CO₂ emissions and labour engagement will be profitable.

3.4 Total costs of ownership are guiding

The total costs of ownership (TCO) are the starting point, not just the purchase or selling price. This means that companies and consumers share responsibility for what happens during the life-cycle of a product. Examples can be found in the use of energy and water as well as embedded resources. Price is based on the total cost of ownership, including use and re-cycling. One could even make 'lease' contracts for the embedded commodities such as steel and rubber. New responsibility systems must then be set up. This will offer a 'creative' new economic activity.

3.5 Cyclic use of resources

Design and production occurs in closed-loop life-cycles: cyclical use of resources to keep distances short. Producers realise that their resources are coming from the 'waste' of a previous link in the chain and that, in turn, their waste becomes 'food' for the next link. Tax systems are designed in this way for all meaningful material streams: cars, food, washing machines, drinking water, houses, energy carriers, etc. 'Waste is Food' or 'Waste is Resources' become popular slogans and people will gladly purchase other people's waste.

3.6 The polluter pays

Transitions towards Sustainability

The longstanding principle ‘the polluter pays’ is applied rigorously. Organisations will take into account the direct liability on actions that are harmful, in both the short term and the long term, even if that harm takes place at a much later date. Products and their related services could be assessed and sold and/or taxed on the basis of their life-cycle pollution in combination with their commodity use. Accordingly, a washing machine becomes cheaper or more expensive depending on how many litres of water it will use during its entire life. If necessary, a direct tax principle can be applied here. In principal, this means renewed ratification of the precaution principle as established at Rio ’92.

3.7 Freedom to act responsibly

We plead to as much freedom as possible for producers and consumers, as long as they act according to these principles and within the boundaries of the law. The government should direct as little as possible by means of prohibitions, prescriptive means, methods or techniques, but should also establish clear and ambitious goals and frameworks. Such action allows citizens and companies the freedom to act responsibly. The goals and frameworks could be based on existing governance frameworks like the Earth Charter (www.earthcharterinaction.org) and Ruggie’s ‘Protect, Respect and Remedy’ Framework (endorsed on 16 June 2011 by the UN Human Rights Council into the ‘Guiding Principles on Business and Human Right’, see: www.business-humanrights.org). Control mechanisms are principle-based, rather than legislative, which inhibits innovation.

Together, these principles could design a guiding framework for long-term contributions to the development of, and transition towards, a green economy. In the process of this transition, existing and new local and national measures could be substantiated against these Rio+20 principles. If they comply with these principles, the proposed measures will contribute to a transition from a realistic perspective. They will also provide the market the stimuli it needs to work on radical greening. If measures do not comply with these principles, they will apparently lead to ‘perverse incentives’, stimuli that do not lead to a sustainable economy. As such, these Rio+20 principles create an evaluation framework for individual measures and are a first step towards shaping economic and social actions that are focused on consciously stimulating a green economy based on a long-term perspective.

(4) MECHANISMS FOR TRANSITION

Principles lose their value if they are not translated and implemented by means of specific measures. For this reason, we propose some complementary means that aim to accelerate the transition towards a green economy. Each of these mechanisms should comply with the principles stated above. The purpose is not to present a complete list with all possible measures, but to inspire policy makers and other decision makers. The aim is to foster a discussion that leads to more mechanisms that comply with the Rio+20 principles so that more and more effective incentives will be introduced, leading to a green economy.

Transitions towards Sustainability

4.1 Greening of taxes

The social costs of pollution could be made visible by adjusting the tax system. An obvious example is road tax that is based on CO₂ emissions rather than on the weight of the vehicle. Another example is linking land value tax to a house's energy label. In this way, tax becomes leverage for change. This measure is an example of implementing principles 2, 6 and 7: the goal (clean air) is stimulated by making clean cars and houses financially attractive, as opposed to more polluting cars and houses. Lagging car manufacturers are stimulated to produce cleaner cars as well, while house owners are stimulated to insulate their houses. In addition to such tax measures, arrangements could be made, for example, with insurance companies that energy-saving cars receive a discount on liability insurance. This fits the principle of multiple value creation: the insurer uses its product to achieve the desired result.

4.2 Expanding the feed-in principle

The feed-in rate is a legally installed compensation structure that is meant for encouraging the long-term acceleration of energy use from sustainable resources (such as solar cells, wind power, biomass and warmth of the Earth). Since the costs of generating energy by means of sustainable resources are higher than those of fossil fuels, the feed-in rate is higher than the market price of grey energy. The idea of the feed-in rate was developed in Germany by Herman Scheer and has also been applied successfully in Spain (solar energy) and Denmark (wind energy). The feed-in principle creates long-term stability, which encourages innovation and investments.

Now that this principle has been successfully applied, it should also be applied to other fields, such as food production, housing, working or recreation. Installing and applying the feed-in principle this way could be seen as a relatively simple transition to carry out. The feed-in principle is an illustration of a mechanism based on principles 2 and 3: non-sustainable techniques such as power from coal power plants are contributing to the further development of green energy, perhaps in local or regional energy cooperations.

4.3 Producers remain the owner of products

The current world economy is based on possession, not on the use of products. Because of this 'embedded principle', responsibility and liability shift continuously from one owner to another. Producers should be responsible for clarifying what has happened to a product in its various phases of use. Obligating a producer to take back a product (and its packaging) at the end of a usage period creates a stimulus to design for re-usage and re-cycling according to, for example, cradle-to-cradle principles. In this way, there will also be a shift from sales to renting and lease and, as such, from ownership to usage. The slogan 'Forget property, performance is what counts' has more recently been referred to as performance-based consumption. It is in the interest of the manufacturer to develop products that have as long a lifespan as possible, or products that can be easily and fully recycled. This not only applies to washing machines and toasters but also to houses and cars. Within current Western

Transitions towards Sustainability

thinking, this concept fits a service or experience economy perfectly. Finally, the concept provides a counter-force against design based on planned or built-in obsolescence; products that become out-of-date or useless within a known time period. This mechanism is an elaboration of principles 4 and 5: the total usage costs are central and producers are being challenged to think about cyclic production systems.

4.4 Accelerate energy-neutral building

By 2020, the Energy Performance Coefficient (EPC) of accommodations needs to be dropped to 0. An EPC of 0.0 means that, on average over the long term, no energy is being used for the basic energy needs for a accommodation: radiator, ventilation and lighting. Technically, it is already possible to build with an EPC of 0; however, doing so requires extra investments that the (future) resident of a house is not (yet) willing to make. Increasing the percentage of grey energy rates could create funds that are exclusively meant for adjusting existing accommodations and investing in the infrastructure of new accommodations. Based on these funds, the yearly adjustments could take place faster. In about 10 years, at least newly build buildings should produce energy, rather than consume it. In glasshouse horticulture, this has been accomplished in the past years. The next areas for application are utility and housing, then offices and, finally, roads. This mechanism is an elaboration of principle 2: a simple tax leads to a shift in investments, thereby creating transitions.

4.5 New finance constructions

Innovations are often hard to push through because the investor has no interest in sustainable products (energy-neutral accommodations are more expensive to build, while the long-term gains are received by the inhabitant, not by the developer). This leads to stalemates: despite something being of value and technically capable of being done, and despite the fact that in the shorter or longer run there is a clearly a business case, it does not happen. To prevent these kinds of stalemates, new financial constructions are needed, such as a 'Robin Hood Tax' or the (not yet invented or proposed) Mortgage for Technological Infrastructure. The essence of the Robin Hood Tax (robinhoodtax.org) is a minimal transaction tax on financial transactions that will raise funds to protect public services, tackle poverty and climate change. These new finance constructions will probably lead to the adoption of new fiscal rules, but it is up to the market to come up with creative solutions. Principles 1 and 7 can clearly be recognised in this mechanism: financiers help to solve a social problem, the government does not prescribe anything, but sees to it that everything is done according to the rules.

(5) EPILOGUE: NAVIGATING BETWEEN DREAMING AND ACTING

The previous paragraphs have outlined multiple principles and transition mechanisms that, together, could create a powerful driver towards a green economy. The urgent need to work towards that aim has briefly been noted, and the above-mentioned list of sustainability issues is hardly a point for debate anymore. New research will surely lead to other details, but the basic idea of the sustainability issue has been mapped, researched, verified and verified again. The belief that something must happen now that leads to the launch of the green economy seems to be widely shared. Despite this, the past 25 years have shown that there is no lack of ambitions or intentions. From a historical perspective, the Rio+20 can be seen as the next in a long series of Earth summits, a top meeting with a long tradition that is destined to fail due to arguing and a lack of action.

Rio+20 can also be seen as a logical next step in the process towards sustainable development. This process started a long time ago and was definitely fuelled by the 'Our Common Future' report in 1987. Bear in mind that planned obsolescence was the leading design principle in the 1950s and that 'Limits to Growth' was only published in the mid-1960s. Recent decades have shown that fostering sustainable development is a difficult, complex and therefore often-treacherous process. The question of how we can actually achieve sustainable development is relatively new; in particular, how we can achieve this through everyday activities and organisations.

Therefore, it is encouraging that the two central issues of Rio+20 show that our daily economic activities are increasingly becoming the essence of the discussion around sustainable development. At the risk of losing sight of 'nature', the question of how we can transform our economy into a green economy is becoming more and more central. In the last 25 years, we made a change from a predominant environmental perspective where the government was mainly in charge of moving towards an economic and organisational perspective in which business (or organisations) and citizens become responsible. This is indeed encouraging, although we have just started. This is not because the environment no longer matters, but because we are gradually realising that sustainability is determined by the way in which we organise our society and our most important institutions. Therefore, sustainability has rightfully (and hopefully not too late) become an organisational issue. In light of the urgency of these issues, the still promising notion of a 'green economy' should quickly be translated into specific short- and long-term measures. These measures should not just be applicable in one country or in Europe, but in every possible location in the world.

The purpose of the above-mentioned principles and mechanisms is to, within a relatively short period of time, ban the 'perverse incentives' that are inherent to our linear economic thinking, which lead to waste, poverty, scarcity and destruction.

Transitions towards Sustainability

The aim should be to move towards a prosperous society that is sustainable in the long term as well. That was the essence of 'Limits to Growth', 'Our Common Future' and 'Rio 1992'. There will be plenty of room for entrepreneurship, innovation and growth, but more than ever it is necessary to pay the real price for externalising costs when shaping the economy. For a long time, our economy was based on the idea that energy, clean air, fresh water and resources would always be freely available. It has since been empirically verified that this is not the case. As Milton Freedman once said, 'There is no such thing as a free lunch'. Therefore, we must start applying the above-mentioned transition mechanisms as fast as possible. We dream of a green economy, but 'between dream and acts stand laws and practical complexities'. Rio+20 allows the possibility to jointly think and work on eliminating those laws and practical complexities. Perhaps what we want can be best phrased (with a nod to a recently deceased mythical CEO) as switching from an I-conomy to the WE-conomy.

SOURCES AND REFERENCES

Brundtland, G.H. (1987). *Our Common Future*. Oxford: Oxford University Press.

Hajer, M. (2011). *De energieke samenleving; Op zoek naar een sturingsfilosofie voor een schone economie*. Den Haag: Planbureau voor de Leefomgeving.

Jonker, J. (red.) (2011). *Duurzaam Denken Doen*. Deventer: Kluwer.

Jonker, J. Diepstraten, F., & Kieboom, J. (2011). *Inleiding in maatschappelijk verantwoord en duurzaam ondernemen; Chronologisch overzicht en Verklarende woordenlijst*. Deventer: Kluwer.

Meadows, D.H., Meadows, D.L., Randers, J., & Behrens III, W.W. (1972). *Limits to growth*. New York: Universe.

MNP (2007), *Nederland en een duurzame wereld. Armoede, klimaat en biodiversiteit. Tweede duurzaamheidsverkenning*. Bilthoven: Milieu en Natuurplanbureau.

NCDO (2011). Kennisdossier 'Groene Economie', <http://www.ncdo.nl/docs/uploads>.

Pearce, D., Markandya, A., & Barbier, E.B. (1989). *Blueprint for a green economy*. London: Earthscan.

Sociaal Cultureel Planbureau (2010). *Sociaal en Cultureel Rapport 2010*. Den Haag: Sociaal en Cultureel Planbureau.

UNEP (2011). *Towards a Green Economy: Setting the stage for a Green Economy Transition*, retrieved August 13th 2011, www.unep.org/greeneconomy.

About the authors

Jan Jonker is professor of corporate sustainability at the Radboud University Nijmegen (Nijmegen School of Management). He has written and/or edited publications such as 'CSR across Europe' (2004), 'Management Models for CSR' (2006), 'Management Models for the Future' (2009), 'Old Concepts and New Horizons' (2011) and *Duurzaam Denken Doen* (2011). Jonker's focus over the next few years is on sustainable entrepreneurship, as well as the accompanying fundamental changes that can and need to be realised in and by organisations.

Jos Reinhoudt is a consultant for Sustainable Development and Corporate Social Responsibility. Reinhoudt has advised numerous large and smaller companies and government on subjects such as transparency, sustainable strategy formation and chain responsibility. He voices his ideas on sustainability in many logs, conversations, articles and guest lectures. Reinhoudt's ambition is to contribute to thinking about a green economy.

Jan Jonker and Jos Reinhoudt have both been involved in the 'Our Common Future 2.0' project in 2010–2011 (www.ourcommonfuture.nl), Jan as initiator and Jos as editor. The ambition of the OCF 2.0 Project was to rewrite the 1987 report 'Our Common Future' with a group of approximately 400 people over a period of nine months. The project ended on May 20th 2011 with a large-scale conference and the introduction of the book '*Duurzaam Denken Doen*' (Kluwer Publishers). The third edition of this book will appear in late 2011.

Harry te Riele loves innovation and complex systems in society. His focus is on forming a vision and intervening for social system changes. Sustainability is an important issue in te Riele's work. Since October 2009, he has worked as an independent consultant under the name Storm CS Consultants for Societal Transitions, Rotterdam. He is an associate with Erasmus University Rotterdam and the Dutch Research Institute For Transitions (DRIFT).