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De Groene Zaak
ondernemers voor een duurzame economie

Governments going circular

A global scan by De Groene Zaak,
Dutch Sustainability Business Association

www.govsgocircular.com

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Table of contents

Preface

A journey into circularity

All over the world, a growing number of companies have started to develop and apply circular business models. These business models replace the traditional linear, "end-of-life" concept. Companies are now employing restoration rather than destruction and are shifting away from fossil fuels towards renewable energy. Manufacturers are stopping the use of toxic chemicals and aiming towards the elimination of waste through superior material, product and system design.

Companies have good reasons to move in this direction as the current economic climate exerts increasing pressure on the availability of vital natural resources. Those who foresee the potential consequences of the predicted resource scarcity have begun to develop business models to help reduce dependencies on fossil fuels and finite natural resources.

Governments have good reasons to act as well: Besides strengthening the economy by saving hundreds of billions of euros per year on finite resources, the shift to a more circular economy not only stimulates innovation, it also offers the promise of new employment opportunities.

While companies are the driving force in the shift towards what is now commonly known as "the circular economy", governments play an equally crucial role. Governments have the ability to strengthen business efforts and upscale small niche activities into powerful circular measures that can impact entire economies. Successfully tackling a systematic reshaping of the traditional production and consumption model that has dominated the past 250 years requires a coherent set of government actions, including incentives to encourage all companies to apply circular business models.

Given the importance of government intervention in establishing sustainable national economies, we set out on a journey to identify best practices by analysing government initiatives worldwide. We examined governments that are: using their powers to shape circular market conditions at a national level; creating the right conditions for change; outlining ambitious plans; choosing to fund and coordinate various initiatives by companies and individuals; or adopting the circular economy via their own large organisations and supply chains.

This publication is meant to inspire governments worldwide by informing them of what works and what is possible.

As far as we know, this is the first survey of government best practices accelerating the circular economy. Together with our partners, Accenture, EY, IMSA, Royal HaskoningDHV and their global networks, we have identified over 30 case studies that are available on the website govsgocircular.com. We invite all governments to find inspiration here, contribute success stories and help promote the transition towards circularity.

We would also like to thank the civil servants of the governments we consulted worldwide who shared their observations and approaches. We hope it gives you valuable insights and inspiration to follow those leaders.

Marga Hoek
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Dutch Sustainability Business Association

Chapter 1

Introduction

A more transformative approach

Governments, scientists and businesses all around the world are starting to acknowledge that our current "take, make, waste" economic growth model is living on borrowed time and that a more transformative approach is required.

It is becoming more apparent that the current global economic system is imposing an increasing strain on the availability of our essential natural resources. Although mineral resources do not currently face complete depletion, the economically available proportion of these reserves will, sooner or later, be exhausted. We will see this begin at a regional level as extraction becomes more expensive and as a number of natural resources face structural price increases due to rising demand and competition from developing economies. These price increases can fluctuate dramatically depending on geopolitical factors, especially in countries where the natural resource market is controlled by the government and political volatility, results in export restrictions.

Increasing political instability in countries rich in natural resources is certainly an important contributing factor to price fluctuations and can lead to surges in demand. As a result of fluctuating supply and demand, and consequent government market interventions, the availability of natural resources can be significantly disrupted and quality severely compromised.

Consequently, resource scarcity is becoming an increasingly pressing reality: regionally, economically, and geopolitically. Resource scarcity is likely to have a substantial economic impact on the EU and the Netherlands, for example, and it is also reasonable to predict that a metals shortage will impede high-tech innovation, as well as the (sustainable) energy and electronic sectors. The extraction of raw materials also demands attention due to issues related to human exploitation and unsuitable working labour conditions.

Thinking circular

In view of this, many companies have started to develop and apply circular business models, rather than the traditional linear, "end-of-life" concept. They are adopting renewable energy, eliminating toxic chemicals, and aiming towards the elimination of waste through superior material, product and system design.

Based on this definition, the circular economy consists of:
(1) Biomass cascades
(2) Closed loops of abiotic materials
(3) Circular products

(1) Biomass consists of biological material derived from living, or recently living organisms. This includes biotic resources from plants and animals, such as food and fertilizer, but also biodegradable materials that are quickly broken down and absorbed by decomposers. Compostable resources that are free of dangerous materials must be collected and composted before they are considered biomass.

(2) Closed loops of abiotic materials involve the reuse of products rather than discarding materials and products as waste and thus putting a burden on nature. Closed loops build on the concept of "Cradle to Cradle" by ensuring that all resources are used to make sustainable products, and are both socially and environmentally beneficial. The materials are clearly defined by origin, composition, characteristics, and suitability for use as nutrients or for reuse.

(3) Examples of circular products are:

- product as service (e.g. the leasing of furnishings or appliances);
- products based on recycled resources (e.g. paper, juice cartons, plastics, building materials, and other cradle to cradle products);
- sharing platforms for companies and individuals (e.g. for vehicles, materials, services, and personnel).

Opportunities in the circular economy

The circular economy offers significant advantages. It boosts innovation and employment opportunities. It introduces new economic divisions and saves money at the same time. Research conducted by McKinsey on behalf of the Ellen MacArthur Foundation determined that the closing of economic loops can lead to a savings of 290 to 485 billion euros in the EU alone. Furthermore, the circular economy also offers indirect benefits to businesses: supply chains are better managed, companies become less sensitive to the price volatility of resources, and they build a longer and better relationship with their customers. In contrast to the current wasteful linear economy, the circular economy has a much smaller impact on the environment.

Bottleneck in the transition to the circular economy

If circular business is such a good idea, what is keeping us from going ahead? There are many hurdles that have developed over the last 150 years due to the traditional linear economy system. Some existing systems will need to diminish allowing new schemes to appear. The main obstacles currently blocking the transition to a circular economy have been identified by the Ellen MacArthur Foundation. They are:

1. Lack of awareness

Many businesses simply do not feel a sense of urgency to change to a circular business model. Or, they may want to make the transition but they come across too much resistance from their international supply chain and trading partners.

2. Availability of substitute materials

Many of the toxic or scarce materials that are used in the linear economy will have to be replaced with alternatives in a circular economy. These alternatives are not always easily available.[1]

[1]This is probably one reason why we found no example of a government prohibiting the use of materials that are hazardous or difficult to recycle or dispose of (substitution), beyond the "safe base" accomplished by regulations such as EU-REACH.

3. Linear lock-ins

In the linear economy, external costs, like environmental damage, are excluded from the business case. Also, the tax regime, in which labour is more heavily taxed than materials, presents a huge challenge for the circular economy. Because of this, there is an uneven playing field for companies that set up their business in a circular model. [i, ii, iii, iv]

There are specific lock-ins of a more financial nature, such as a long-term revenue generation horizons, major upfront investments, limited access to funding and the short-term perspectives of many shareholders.

4. Hampering legislation

Examples of this include: the lack of recyclable (plastic) material standardisation, the low number of end-waste protocols for businesses, and the dearth of infrastructure for companies to ensure transparency on the product-level which is necessary for circular business (i.e. specifying the resources used to manufacture a particular product).

Circular pioneers, such as the partners in De Groene Zaak, emphasise the following obstacles that are often encountered:

- A lack of market advantage differentiation for circular products (especially because public procurement focuses too much on the short-term);
- The high costs of sustainable certification and integral reporting that need to be worked into the product price resulting in competitive disadvantage;
- A mismatch between supply and demand of high-quality reusable resources, products, and parts.

Additionally, the preliminary results of an ongoing literature review issued by the Dutch government as part of the work of the RACE Coalition (Realisation of Acceleration towards a Circular Economy), confirm the following gaps as barriers to the development of a circular economy. Therefore, further consideration of policy action may be beneficial in promoting the circular economy:

- The lack of skills and investment in circular product design and production;
- The lack of enablers to improve cross-cycle and cross-sector performance. This is partly due to a non-alignment of power and incentives for transformations within and across value chains;
- The lack of consumer and business acceptance regarding consumer-as-user, and performance-based payment models;
- The lack of know-how and economic incentives for repair and reuse;
- The lack of consumer information regarding product origins and shelf-life;
- The lack of waste separation at source (especially for food waste and packaging);
- The lack of investment and innovation in recycling and recovery, infrastructure and technology, (related to the lock-in of existing technologies and infrastructure);
- The lack of harmony in transportation flows within and between municipalities, which leads to confusion among shippers and transporters;
- Weaknesses in policy coherence (e.g. bio-energy and waste policies);
- Widespread planned obsolescence within product chains.

This list is non-exhaustive but covers the main barriers to the development of a circular economy.

Governments: key to the shift to a circular economy

While companies can start doing circular business in our current linear economy, only governments can tackle most of the barriers that hamper the transition towards a circular economy. Many business models are held back from mainstreaming under existing regulations and limitations. Governments and local authorities have several instruments that they can use to present a more conducive environment for a circular economy. They can:

- introduce or tighten laws & regulations;
- take financial measures (like offering subsidies and taking fiscal measures);
- utilise procurement power; and
- develop symbiotic partnerships.

In order to encourage the transition to a circular economy, governments need to create the conditions that stimulate and accelerate decisions to move in this direction. In this way, innovations are given the space to achieve circular business aims. An integral package of systemic incentives is required for companies to advance circular models throughout their entire chains, including: design, marketing, maintenance, repair, reuse, sharing, improvements, renewal, and collection.

These incentives should also encourage an increase in the production, extraction, and composting of cascading biomass and recycled resources. The expansion and persistence of existing policies is key to encouraging companies to take an expanded view of their production accountability. Additionally, the incentives can also be in the form of sustainable procurement programs, taxes, levies, premiums, and innovation subsidies.

We have therefore researched governments on a local, regional, and national level who have put forward these incentives and overcome bottlenecks. We have divided the global best practices into four categories:

(1) Regulations focused on recovery of resources and the possibilities of reuse (see Chapter 2);

(2) Regulations to limit waste and the incineration and disposal of waste (see Chapter 3);

(3) Regulations focused on the facilitation of sharing platforms for individuals and companies (vehicles, material, services, personnel) (see Chapter 4);

(4) Regulations to advance circularity within sustainable public procurement (see Chapter 5).

Furthermore, we have included information on a couple of "Big Ideas" that can inspire governments (Chapter 6) and a brief action plan: Getting the circular transition going (Chapter 8). In Chapter 7, you will find conclusions of this global scan.

A grey area exists between categories 1 and 2 since particular regulations may focus on resource efficiency while at the same time reducing waste issues. Therefore, in category 1, we have arranged the cases so that the decrease of resource dependence has priority. In category 2, the priority is for cases that reduce waste.

An overview of the type of regulation that the government can initiate and stimulate is given in the "Circularity Ladder", shown in Figure 1. This is based on the existing Waste Hierarchy of the European Commission and connects it to the strategies that the Ellen MacArthur Foundation uses, such as circular design and refurbishment.

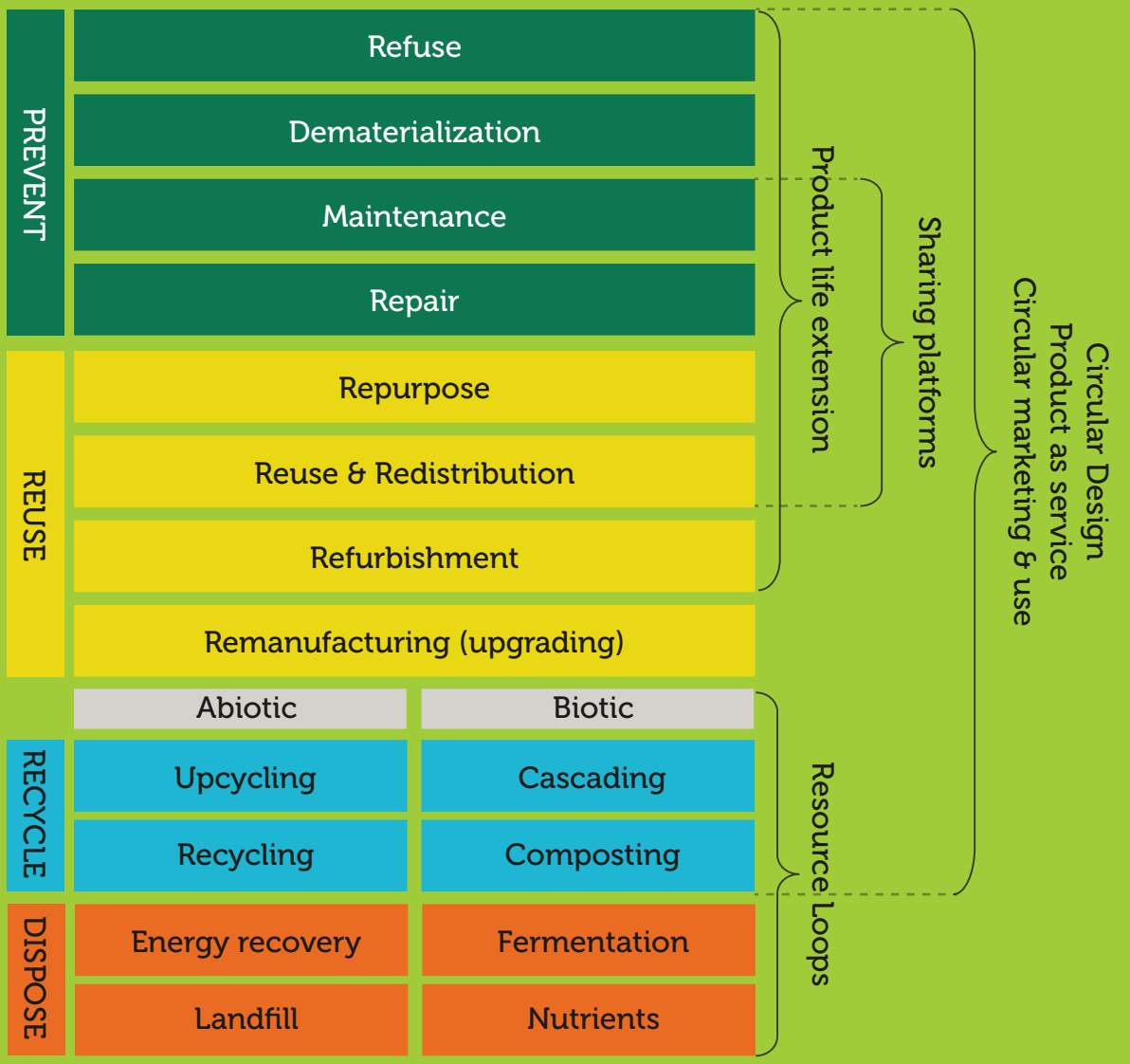


Figure 1.
This "Circularity Ladder" presents economic activities with an increasing "degree of circularity". On the left we see the familiar EU Waste Hierarchy of Prevent, Reuse, Recycle and Dispose. Here, Prevention represents the highest degree of circularity, and Recycling represents the lowest, with Disposal to be avoided. In the middle, each of these stages represent circular activities such as maintenance, repair and refurbishment, and cascading of biomass.

On the right, six circular business models (or strategies) such as Circular Design and Product-as-a-Service are shown that can set these activities in motion.

When looking at the six circular business models we see two important things. First, all business models impact different activities, but some impact a wider range of activities than others. For example, circular design impacts all aspects, whereas a sharing platform does not directly lead to refurbishment or recycling (although it is possible).

Second, some business models are able to achieve higher degrees of circularity than others. For example, using biomass or recyclates as input materials only has a direct impact on recycling – although admittedly they have an indirect impact on prevention of also using virgin material.

ACTIONS OF IMPACT

Frame 1:

Impact on circularity

Not every government regulation or initiative applies to the transition to a circular economy in the same way. We have divided the examples we have found into three categories:

[1] Basic actions, getting the basics right;
[2] Pioneering actions making circular entrepreneurship easier; and
[3] Mainstreaming actions making the circular economy standard practice.

Basic steps are relatively straightforward and aim to increase the share of circular business under existing rules and regulations.

Pioneering actions focus on enabling actors to experiment and stimulate circular economy innovations and redesign of existing products and value chains. Room for experimentation is created to further develop practical implementation of new business models and reverse logistic systems. For example: the WEEE Directive (2012/19/EU) for electrical and electronic equipment (EEE) forced changes throughout the product cycle, including improved product design, to allow easy dismantling, recycling and reuse.

We speak of mainstreaming actions when governments take measures to radically change the business environment. In this stage, most documented best practices are either a basic action or a pioneering action. There are, however, a few examples that have real mainstream qualities, like the German ProgRess program and the Dutch VANG program.

All three types of actions are required to enable the transition to a circular economy. The identification of these actions is important, because each type requires a different focus and effort. Moreover, there are large cultural, geographical, and economical differences between countries, so not every government has the same focus or applies identical actions. Different actions can be started at the same time and run parallel to each other: they do not necessarily follow a logical (linear) order. Yet it is clear that the best place to start is with the basic actions, what are often described as the "low hanging fruit".

Chapter 2

Regulations focused on recovery and reuse of resources

Our current economic structure is based on an inexhaustible amount of cheap resources. These resources are used at the beginning of an industrial system and are developed according to a one-way, linear model. The increasing risks of reliable supply and price fluctuations of natural resources not only affect the business world but also the whole economy. Circularity begins from this perspective and ensures a decreased dependence on primary resources. This approach is referred to as "resource efficiency". Examples are presented in this chapter.

Separation and Collection

Governments have policies at their disposal to deliver more resource efficiency. The first, and most well-known, is incentivising separation and collection systems that minimise the costs of recycling and re-use (e.g. deposit-refund schemes). An example of this kind of measure is the European Waste Electrical and Electronic Equipment (WEEE) Directive. This Directive ensures that all electrical and electronic equipment (EEE) that is put on the market is collected and reused or recycled at its end-of-life state, enabling the recovery of valuable and/or critical materials contained in electronic products.
Initially an environmental measure (most equipment also contains toxic or hazardous materials), it turned out to be the first successful circular model in Europe. The Directive resulted in higher percentages of recycled materials within new products and in resources that are continuously reintroduced to the market (see Frame 1).

Another example is the End-of-Life Vehicle (ELV) Directive that was introduced in 2000 to correctly manage the yearly 7 to 8 million tons of waste generated by discarded cars in the EU. The Directive makes producers responsible for increasing the reuse, recovery and recycling rates of ELVs by setting clear quantified targets. At the same time, it urges producers to manufacture new vehicles without using hazardous substances and to adjust the vehicle design to one that is more circular. The role of the national government is to monitor stakeholders and to enforce the law.
The ELV Directive is highly successful: in 2012, 11 out of the 28 member states achieved recycling and reuse rates of 85% or higher. It also inspired many European carmakers like Renault to play a leading role in circular entrepreneurship.

Although illegal recycling of ELVs still remains a problem, it is clear that acting in line with the Directive creates: real circular value; lower use of heavy metals; improved collection and de-pollution of ELVs; improved information exchange of car parts; higher reuse, recovery and recycling rates.

PIONEERING/MAINSTREAMING ACTION

Frame 1:

A level playing field in Sweden

The EU adopted the Waste Electrical & Electronic Equipment (WEEE) Directive in 2003 and all member states have implemented it. The Directive sets the laws and regulations that oblige all EU-member states to reach a minimum of 4 kg WEEE collected per capita. The Swedes, however, collected a total amount of e-waste in 2013 of nearly 17.5 kg per capita, or 77% of what was put on the market.

What is their secret? The Swedish government recognised that for successful implementation of the Directive, producers and municipalities need to work together in order to create an efficient and competitively neutral collection of logistics solutions. It has therefore set clear rules creating a level playing field for all producers within a competitive market. Swedish regulation also obliges producers to establish or finance an e-waste recovery system and stimulate consumers to bring their e-waste to collection points. Ideally, the policy also acts as an incentive for manufacturers to produce more environmentally friendly products in order to lower costs and reach reuse and recycling targets.

MAINSTREAMING ACTION

Frame 2:

High quality aggregates in Belgium

In Flanders, a region in Belgium, another classic landfill culprit has been tackled: construction and demolition waste. Similar to cases all around the world, the Belgian construction industry produces an enormous amount of debris and demolition rubble. Most of it is dumped, unsorted in landfills, including substantial rocky fractions that are inherently valuable materials.

In 2011, the Flanders provincial government recognized the significant potential of recycling high quality aggregates. It therefore established a legal framework to ensure the proper management of the rocky fraction within construction and demolition waste. Additionally, the government introduced economic incentives, like higher rates for dumping debris at landfills and imposed several restrictions regarding on the dumping of unsorted construction and demolition waste.
These measures are all focused on optimising recycling rates in order to lower the pressure on natural resources, while the management system and regulations ensure high quality recycled materials. Already in the first year (2011) a total of 12.6 million tons of recycled aggregates was certified according to the regulation and the production volume of recycled aggregates is still increasing.

Industrial symbiosis

Another policy is to make it easier to recycle materials by differentiating between waste and recyclables (by-products). In 2011, the Flanders provincial government in Belgium recognised the high potential for the recycling of good quality granulates. It therefore established a legal framework to ensure the proper management of the rocky fraction of the construction and demolition waste (see Frame 2). The Flanders approach was very effective, because it was combined with another governmental action: the creation of a market for recycled materials through product specifications, standards and regulation.

There are several good examples of (local) governments facilitating industrial clusters that exchange materials while there are still resources to prevent them from becoming waste. This is called "industrial symbiosis" where one company's waste is another company's resource. The UK is home to the world's first National Industrial Symbiosis Program (NISP) which has been operating since 2005. NISP provides a platform to inspire businesses to implement resource optimisation and efficiency practices, keeping materials and other resources in productive use for longer through "industrial symbiosis". Other countries, like South-Africa, have developed similar programmes (see Frame 3). In 2005 the UK government funded the roll out of NISP as a national program through its Business Resource Efficiency and Waste Program – again a first in the world.

PIONEERING ACTION

Frame 3:

Industrial symbioses in Western Cape, South Africa

Western Cape Industrial Symbiosis Program (WISP) is a program that aims to stimulate industrial cooperation in the South African province, Western Cape. The program connects companies so that they can identify and realise the business opportunities enabled by using under-utilized or residual resources (materials, expertise, logistics, capacity, energy and water). WISP is one of a number of Green Economy initiatives of the Western Cape Government, supporting the province's intention to become the Green Economic Hub of South Africa and Africa.

WISP is fully funded by the Western Cape Department of Economic Development and Tourism (DEDAT).
Over the course of a year, 108 member companies across a diverse range of industries were recruited to the network. Over 520 under-utilized resources were identified within the network, creating over 1,200 potential new business opportunities or "synergies" that led to substantial waste reduction, financial savings and additional profits.

MAINSTREAMING ACTION

Frame 4:

Japan using recycled resources and reusable parts in the production of new products

Japan is considered a front-runner in supporting the development of a circular economy. Its approach is underpinned by several pieces of legislation including regulations on the circular economy, resource efficiency, waste and several sector-specific pieces of legislation.

The Law for Promotion of Effective Utilization of Resources forms a legal framework covering the entire lifespan of products from the plastic, electronic and electric, paper, packaging, automobile and raw materials processing industries, both upstream and downstream. It sets standards for producers regarding the generation of by-products and used products. Manufacturers are obliged to use recycled resources and reusable parts in the production of new products. The law stimulates a design of products that are easy to recycle and demands a "voluntarily" take back of products at end-of-life. Additionally, the government promotes research and development activities, implements educational and publicity programmes for the buy-in of the public, and uses their procurement power to stimulate the use of recyclable resources and reusable parts. As an extension of the national authority, the local governments are required to promote and implement the same activities in line with the local conditions. Through this and other policies, an astonishing 98% of all metals in Japan is recovered.

Chapter 3

Regulations to limit waste and the disposal or incineration of waste

As indicated in Chapter 1, natural resources such as minerals and oil are extracted in our one-way economy, then transformed, used, and finally burned as "waste" or – in many parts of the world – discarded as landfill. This leads to severe contamination of the environment and to the dumping of valuable materials in places from which they may never be recovered, such as the "plastic soup". The prevention and reduction of waste, including the prevention of landfill and / or incineration, is therefore an important aspect of circularity.

This section covers governmental actions that are focused on waste reduction. Currently, there is a grey area between waste management, recovery, and the possibilities of reuse. In fact "waste" and "raw materials" are the same in the circular economy. Many of the identified best practices do both: they not only lead to waste reduction, but also lead to the reuse of raw materials during production – and thus ensure a reduced dependence on primary resources.

What can governments do?

Governments all over the world are taking various measures to reduce waste and to counter massive dumping and incineration of waste. This often takes the form of taxing certain undesirable waste streams, such as plastic packaging.

In 2002, the Irish government provided a countrywide legal framework that obliged retailers to collect a levy of 0.15 euro cents per plastic bag from customers, while raising the levy to 0.22 euro cents in 2007 to ensure an ongoing declining trend. Twelve years after the implementation, the measure is extremely successful: consumption of plastic bags in Ireland dropped by 90%, from 1.2 billion per year to 230 million, generating nearly 200 million euros in income per year that could be used for environmental purposes. Similar measures are now in place all around the world, from Washington DC to Botswana and Denmark.

In some cases, governments have gone even further by prohibiting the use of certain materials. In November 2013, the New York City Council approved the local law 2013/142, which banned the use of Styrofoam food and drink containers from restaurants and food stores in the city.

Another frequently employed tactic is taxing the landfill or the incineration of waste; however the ever-progressive country Denmark passed a bold new resource strategy last year. They are treating all waste as resources which should be either recycled or reused. Denmark's main aim is to recycle 50% of all household waste by 2022; today, only 23% is recycled and the rest is incinerated. To discourage the incineration of waste by the country's 97 municipalities, a law now bans the construction of new incineration plants.

Increase recycling and reduce litter

Some governments are trying to change the business culture to stimulate more sustainable designs and packaging, increase recycling rates, and reduce litter. The Australian Government, for instance, decided in 2005 to close an agreement with industry and community groups to find and fund solutions to address sustainable packaging issues. They developed the Australian Packaging Covenant (APC) in which a lifecycle approach was adopted. The APC funds initiatives that increase recycling and reduce litter. Through the APC, industries have agreed to take a leading role in managing the impact of its packaging. Between 2005 and 2012, APC projects have accounted for up to 32% of the overall increase in recycling tons, and funded 128 projects leading to the recycling of 695 tons of steel, almost 36,000 tons of paper and cardboard, 142,500 tons of glass and 13,500 tons of plastic. Elsewhere in the world, including South Africa, governments actively support private initiatives aimed at reducing waste and boosting the collection of (reusable) waste (see Frame 1). Some governments also implement return systems. One example is the return system for PET bottles and aluminium cans that the Swedish government has brought to life through legislation (Returpack). Other governments focus on systems for reuse (see Frame 2) or on extending the life of products (see Frame 3).

PIONEERING ACTION

Frame 1:

Recycling in South Africa

South Africa is littered with worn tires, and the pile is growing by ten million tires per year. The discarded tires pollute the environment, cause fire hazards, and attract vermin and mosquitoes. All in all they are a danger to public health.
Recently, the South African government has supported, through regulation, a successful closed loop initiative to combat this problem. REDISA (Recycling and Economic Development Initiative of South Africa) is a nonprofit organisation including about 1,500 manufacturers and importers. They each pay a fee per kilogram of new tire rubber that they produce. That fee allows the tires to be picked up by collectors and recycled. Some 50,000 tons has been collected and nearly 30,000 tons has been recycled. Moreover, the project creates 1,500 jobs. REDISA must eventually grow into an overarching process manager for the South African tire industry that manages the entire value cycle from design to production, distribution, collection, and recycling of waste.

Mainstreaming actions

The National Zero Waste Plan of Scotland is another example of a mainstreaming action by governments. The Zero Waste Plan aims to achieve a waste-free country in which efficient use of resources is achieved by minimising the demand for primary resources, and maximising the reuse, recycling, and recovery of resources instead of treating them as waste.

The government provides financial support, tools, and training, but also shapes a supportive legal framework. This unique program is committed to shifting towards a circular economy.

BASIC ACTION

Frame 2:

Furniture reuse in Great Britain

Local governments can do great things in promoting recycling and reuse – one of the basic philosophies of the circular economy. In England for instance, the Surrey County Council (SCC) established the Surrey Reuse Network (SRN) in 2010, in order to boost the reuse and redistribution of furniture and appliances. The SRN supports a fast growing number of Furniture Reuse Organizations (FROs) across the country, working collaboratively to deliver more coordinated, efficient, and effective reuse services. By combining resources, the FROs now jointly organise collections, run communications campaigns, and win local authority contracts. Through the network, economies of scale are created and expenses are more efficiently used.

Although supporting low-income households remains an important goal of SCC, they also contribute to higher resource efficiency. The need for new items is reduced and the product life is extended, thus preventing excessive waste being sent to a landfill. Currently, SCC is diverting approximately 660 tons of furniture from landfills each year, bringing more sustainable business to its members at the same time.

PIONEERING ACTION

Frame 3:

The Repair Network of Vienna

The "Reparaturnetzwerk Wien" was founded in 1999 to strengthen the repair services sector in the city of Vienna by creating a platform that brings supply and demand together. It is one of the initiatives of the multi-annual Waste Prevention Programme of Vienna that manages and supports a large number of initiatives in the city, casting broad attention to waste solutions. The network is run by the non-profit organisation Eco Counselling Vienna, but owes its existence to the union of repair companies, citizens, and the municipality.

The intention of the Repair Network is not only to support small repair companies, but also to bring the repair idea forward in society. As an umbrella organisation, the network provides marketing activities that are paid for by the memberships fees collected from the affiliated companies. However, the membership fees are not sufficient for full funding of the network, and that is where the municipality of Vienna comes into play. Department 48 of Waste Management, Street Cleaning, and Vehicle Fleet provided start-up funding and offer financial aid for ongoing activities. In addition to financial support, the Repair Network is also supported and promoted by the Waste Prevention Programme and by the Executive City Councillor for the Environment.

Small repair companies, in particular, benefit from the promotion opportunities that the platform facilitates. From the consumer's perspective, the platform offers competitive repair services that prolong the lifespan of products. Not only does this initiative prevent nearly 600 tons of waste per year, but it also supports the search for high-quality repair services and ensures the preservation of jobs and know-how in the repair sector.

Initially serving 23 member companies, the network has now matured into a well-established and popular platform of 65 companies that carry out over 50,000 repairs annually. Consumers can find a specialised repair company that fits their request by using their website (www.reparaturnetzwerk.at) or by calling their hotline.

Chapter 4

Measures aimed at facilitating sharing platforms

In many developed economies, there is an excess of goods and services and an under-utilisation of capacity. A more efficient approach to what already exists, is therefore an essential aspect of a circular economy. This includes sharing concepts rather than models based on ownership.

What can governments do?

Many successful sharing concepts are initiated by commercial enterprises. Nevertheless, governments have good reason to promote the use of these sorts of commercial sharing platforms through supportive policies.

The city of Amsterdam is using incentives to modify consumer behaviour. This is the main philosophy behind implementing an urban sharing program for electric vehicles. The municipality has issued 700 city-wide permits specifically to encourage electric car sharing. Car sharing organizations can apply for those permits and pay an annual fee per permit. In addition to issuing permits, the local government has conducted the necessary research, developed an electric car charging infrastructure, and enforced regulation so that other drivers will not use the designated parking spots.

By increasing the attractiveness of car sharing, ownership of a car becomes less desirable and the utilisation rates of these cars will increase.

The program was initiated in 2011 and is still running successfully. Its 25,000 members rent 300 cars 10,000 times per week. As a consequence of this endeavour, with only a year after the introduction, over 300 members had sold their own cars. The total number of users is growing along with an increasing number of public charging stations in the city. These stations are placed by two major energy companies that are contracted by the municipality. By 2016, the number of charging stations in Amsterdam alone, should have reached a total of 2,000.

By initiating an urban sharing program for electric vehicles, Amsterdam (and several other European cities) took a first basic step in promoting a sharing economy. Other cities developed bike sharing programs (Frame 1). Seoul has taken sharing to a next level (Frame 2).

MAINSTREAMING ACTION

Frame 1:

Bike sharing Bixi in Montreal

Bixi, the public bicycle sharing system in Montreal, was a result of the 2007 "Reinvent Montreal" transportation plan, in which the city committed to setting up bike sharing initiatives and to doubling the size of the 400 km bicycle paths within 7 years. The system has been developed by multiple parties and is operated by the private, non-profit Public Bike System Company that was established by the city. Under different names, it now also operates in cities in the United States, Mexico, Spain, and the United Kingdom. Similar bike sharing initiatives have now been set up all around the world. The Bixi system allows subscribers to make use of unisex bikes by taking and returning them to solar-powered docks located at strategic points throughout the city. Additional funding is organised through corporate sponsors and through the subscription fee paid by users.

MAINSTREAMING ACTION

Frame 2:

Sharing city Seoul

The South-Korean megacity Seoul takes sharing as a circular instrument to the next level, actually aiming to improve distribution and access to goods and services, increase resource productivity, relieve pressure from traffic and public transportation services, and enhance sustainable development. The Seoul Metropolitan Government (SMG) declared the city a "Sharing City" and enrolled a "Share Hub" to help realise this ambition. The following is a selection of projects from the Sharing City Seoul as of April 2014:

Car sharing (Nanumcar)

- Cars shared conveniently as required, anytime and anywhere. Hourly rates apply;
- Implemented by: Green Point Consortium Ltd., So-Car Ltd., etc;
- Sharing record: 282,356 services used by members;
- A total of 1,070 cars held for sharing.

Sharing idle space in public or government-owned facilities

- Opening conference rooms and auditoriums at government buildings for use by citizens;
- Sharing record: 970 idle spaces fully opened and used in 22,931 cases.

Children's Clothes Sharing Program

- Parents can purchase their kids' clothing using the credit points they earn by donating used kids' clothing to sharing businesses;
- Sharing record: 31,246 cases of exchanged kids' clothing through Kiple Ltd., a designated sharing business.

Chapter 5

Measures that promote circularity through public procurement

Implementing large-scale circular procurement by local, regional, and national authorities as a customer is one of the most important measures to boost the transition to the circular economy. It is therefore surprising that hardly any governments in the world are vigorously applying this practice as there is considerable potential for significant effects.

What can governments do?

Sustainable public procurement refers to governmental authorities that make sustainability a leading criterion in their own procurement and / or tender process. The government formulates clear sustainability goals and challenges the market to develop the most sustainable and innovative solutions. How to reach the target remains the domain of the market: the government only controls the process and evaluates the results.

Sustainable purchasing is already employed by several governments, including the Dutch government. Although the right intentions are in place, it does not result in the desired outcomes. Minimum requirements are often not met for particular products, and the standards are below the market average or outdated. More importantly, the lowest price remains the dominant factor for a contract or agreement. Currently, there is a Green Deal programme called Circular Procurement that has been put in place to change this. More than 30 public and private parties have joined together to stimulate each other to incorporate sustainable procurement policies. Each party is tasked with starting two circular procurement initiatives in order to gain experience and share the insights and best practices.

A simpler form of sustainable procurement is the obligation of the government to provide a preferential position to certain sustainable alternatives in the procurement process. We found an example in the United States where public services are not only obliged to purchase bio-based products, but also has an associated programme that also organises the certification of products. (see Frame 1).

With circular tendering, the government makes specific agreements with suppliers regarding the return of products, components, and equipment so that they can re-enter the chain after use. There are different methods for this. For example, by paying only for the services rendered ("pay per use"), or by making specific agreements regarding the return (buy back), they can ensure that resources are optimally reused. By maintaining this new circular business model, the government – as a customer – becomes the core of the circular economy. With the right approach, circular procurement adds value to both the government and the supplier. The latter keeps a grip on the valuable raw materials that are incorporated in the product while the government sees lower total costs, or not require an investment at all. Thus, by issuing an economic incentive, it becomes possible to utilise high-quality, durable products at an attractive price. These economic arrangements can often be much more effective than detailed environmental regulation.

Businesses are experimenting extensively with new business models related to the purchase and use of products in order to achieve better resource management.

Governments, however, are hardly building up experience with these new forms of purchasing, leasing and usage. In public procurement the usage and "end of waste" phases are now new aspects that are appearing. Two known pitfalls for sustainable procurement are 1) the maintenance of sustainability criteria – which is too detailed, and which businesses cannot properly initiate – and 2) steering purchasing managers to focus on purchase price.

PIONEERING ACTION

Frame 1:

USDA BioPreferred Program

In the US, all federal agencies are required to give preference to certain products that are bio-based. The goal of the USDA BioPreferred® programme is to reduce the country's reliance on petroleum, increase the use of renewable agriculture resources, and reduce the adverse environmental and health impact by enforcing the mandatory procurement of bio-based products.

An additional goal is to stimulate consumer purchases of bio-based products by setting the right example. In order to achieve the objectives and guide the agencies, the programme is responsible for certifying bio-based products. Today, over 1,900 products are already certified and may carry the voluntarily "USDA Certified Bio-based Product" label.

Chapter 6

Big ideas for a circular transition

Besides the four categorised measures, we also found a couple of ideas that are needed to realise a fundamental shift toward a circular economy. Although many of these ideas have not yet been initiated, they can serve as an inspiration for governments.

Create a government agency or programme to encourage circular innovations

Governments can start programmes for research, or development, demonstrate the circular economy or outsource this to a (government) institution. Such national programmes are important because the transition towards a circular economy is a system change which calls for an integrated approach of economic incentives and other measures. Examples of such programmes are VANG in the Netherlands and ProGress in Germany. The objective of the German programme is to double Germany's resource productivity by 2020 compared to 1994. The first results will be presented in 2016.

A programme like this is focused on leaders from all sectors, including manufacturers, designers, waste contractors, the repair industry, and thrift shops. With cities, regional clusters / provinces, chains, and cross-sector partnerships as the primary starting points. There is also ample attention to pilots and research on separation techniques. Alternative materials for critical raw materials and the development of scientific research programmes into the circular economy are also explored, as is tax reform, new business models and the removal of linear obstacles. Such programmes control the integration of the circular economy in education and training. For companies, it is important that students are trained in all areas of the circular economy as soon as possible.

Another good example in this direction is the UK Government's innovation agency Innovate UK. This agency helps companies that see a future in a circular economy to innovate more quickly and support technologies and business models that enable the transition. From the Resource Efficiency program, projects across the entire economy are supported by funding, networking events, and professional advice. While the agency has programmes devoted to innovation aimed at other objectives (e.g. safety in cyber space), it also focuses on projects that are rooted in circular economy principles, namely business models that reuse, repair, remanufacture or recycle resources critical to business.

What is special about Innovate UK, is the ability to connect the expertise from different sectors and gain collaboration across supply chains. No single sector "owns" resource efficiency or the circular economy as a problem, so stakeholders need to collaborate to develop new business models where materials stay within the system. The agency connects and organizes national funding competitions to share risks in developing new technologies and business models. This way innovation happens faster and on a bigger scale.

Although it is not a governmental agency, the Circular Economy Institute in France is also an example of an institution whose aim it is to bring together all circular economy stakeholders in order to promote and accelerate the transition to the circular economy. The online platform, Plan C, the Flemish network for sustainable management of materials, also presents a multitude of approaches and 100 real-life business cases. And finally, in the Netherlands, the government has entered into a coalition with knowledge institutions and industry to set up a programme that explicitly focuses on monetizing the benefits of circular action (RACE). Within RACE, not only technical aspects (such as circular design and energy neutral recycling) are addressed, but also the necessary social and systemic innovation is explicitly appointed. It also focuses on to the development of educational programmes and joint communication and knowledge building.

Create economic incentives for companies to promote circular business

Economic incentives such as a sustainable procurement policy or charges related to the use of raw materials are required for mainstreaming the circular economy. Policies for this, however, are still in their infancy. The sustainable business community is therefore calling for feasibility studies and pilot projects for the introduction of concrete incentives for circular business and green economic growth at EU level and in Member States. Examples include measures to extend producer responsibility such as a "pre-cycling premium" (see Frame 1) and consumer-oriented price incentives, such as a removal charge and deposit. These are "mechanism designs" according to the principle of "the polluter pays".

Create tax incentives for circular business

This can be facilitated by the following:

- A tax shift from labour to raw materials in the Netherlands and other EU Member States, as advocated by Ex'tax (see Frame 2).
- Increase taxes on primary minerals and reduce taxes on recycled raw materials in a neutral exercise;
- Tax benefits for circular products;
- A permanently reduced VAT rate for all maintenance, repair, renovation, recycling of products and components, sharing platforms, and waste division.

PIONEERING ACTION

Frame 1:

Extending producer responsibility by introducing "pre-cycling premiums"

Every single product is at risk of becoming waste in our ecosystems and causing numerous societal problems. In order to tackle these problems and mainstream the circular economy, the UK-based Blindspot Think Tank proposes extending producer responsibility to cover the risk of products becoming waste. A small mandatory insurance premium paid by producers, according to the waste-risk of their products, would then be spent on "pre-cycling" actions that cut waste-risk throughout society.

The proposition is based on the principle that producers should be held accountable for their product throughout its whole lifespan. Government legislation would regulate the premium paid by producers for all products. As a result, everyday decisions by all market participants would then work to eliminate waste and create a circular economy. The government would legislate and oversee the collection and spending of the premiums by insurers. Producers would design and manufacture less waste-intensive products since the pre-cycling premium rate is based on the waste-risk. This systemic change allows economic, business, employment, ecological, and climate opportunities to be rapidly and fully captured.

MAINSTREAMING ACTION

Frame 2:

Ex'tax: increasing tax on resources and decreasing tax on labour

The Ex'tax Project proposes a fundamental tax shift from labour to natural resources to realize a circular inclusive economy. This shift will make circular business models more successful, boost employment and provide incentives to use natural resources more efficiently. By increasing the tax on resources, the price will go up and demand will go down. At the same time, lowering the tax on labour will make labour-intensive business models more viable, which increases employment.

The proposed tax shift can only be realized if international or regional institutions, such as the EU, develop a long-term, fundamental reform. It is then up to national governments to make the specific tax-rules according to the Ex'tax principles. The Ex'tax project has developed a toolkit in order to assess how exactly the shift could take place. In a case study of the Netherlands, the project showed that 33.7 billion euros in tax revenues can be deducted from labour and replaced by VAT and taxes on fossil fuels, water, air pollution, energy and waste. This is expected to boost employment rates and lower carbon emissions and pollution. This tax shift will also enable circular business models because the cost of labour intensive practices like R&D, reuse, repair, refurbishment, maintenance and recycling will be substantially reduced.

At the moment Ex'tax is merely a proposition presented to the European and national governments. In November 2014, Ex'tax published a major study together with Deloitte, EY, KPMG Meijburg, and PwC. This report builds on other research from over 20 years of arguing for a similar tax shift. Although the shift has not yet been implemented, the support growing fast globally. Ex'tax contributes by building knowledge on the effects and possibilities of the tax shift. The research team recognises the need to not only focus on the opportunities for governments, but also the impact on industries, the labour market and NGOs, as a tax shift will affert all stakeholders in society.

Chapter 7

General conclusions

This exploration of the Circular Economy has identified the limits of its implementation. All in all, it can be concluded that to date there is no government in the world which has developed a comprehensive approach to putting the transition to circularity into motion – though Japan has made clear steps with respect to their own industries.

It is encouraging that China, the world's largest economy, already identified the potential of the circular economy several years ago. A Circular Economy Development Strategy and Action Plan (2010-2015) has been adopted and a system of "Circular Economy Evaluation Indicators" was set up to assess progress at provincial, municipalities and at the business level on energy consumption, recycling and reuse of resources, pollution and social development. Circular Economy Offices have been created at the local level to provide advice to businesses and citizens. Several fiscal measures have been introduced to foster the use of recycled products and to develop industrial relationships.

Based on what we now know, however, the following conclusions are warranted:

1. The vast majority of the governments still lack a clear sense of urgency.

The majority of governments are not yet convinced of the necessity of a circular economy. The (Northern) European and Asian governments are clearly ahead when it comes to forward steps in understanding and realisation: elsewhere in the world, there is, at most, only talk of interest in circularity. The sense of urgency appears to be connected in the first instance to the level of import-dependence on raw materials (Japan, Europe) and environmental pollution (e.g., China).

2. The circular approach is not only relevant for established economies.

Emerging economies are still struggling to get the basics of waste management organised. In these countries, circular initiatives do exist but they are set up and managed by the private sector.

3. Governments are particularly active in waste reduction and resource optimisations programmes.

This is logical, since activities in this field directly connect to the classic waste management system that have long been the responsibilities of governments.

4. The implementation of large-scale circular and / or sustainable procurement by local, regional and national authorities as launching customer, have yet to be applied by virtually all governments in the world.

Here is a huge opportunity for the circular economy. It seems that governments give too little attention to instruments aimed at the development and production of circular products or the dissemination of knowledge about it.

5. Governments use a very different set of instruments to achieve goals.

There is remarkably little evidence of standardisation in the approach to circular economy and there are many creative customisations in place.

6. Many initiatives are put forward by local governments.

These are often more appealing and concrete than large national programmes. The latter, however, have a much greater potential impact. In many cases it is a combination of national policy that is developed locally, that succeeds.

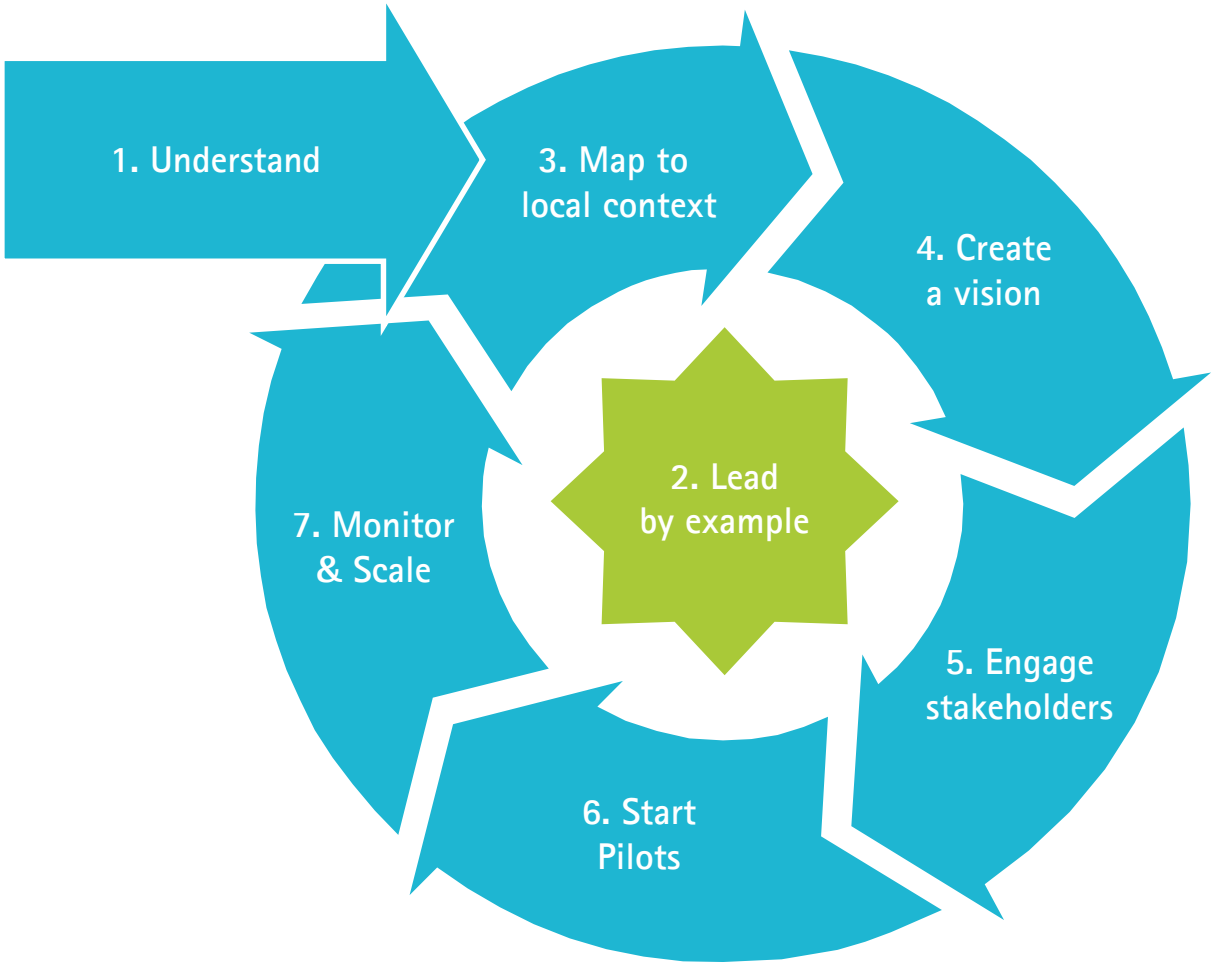
7. There is no universal solution to boost the transition to a circular economy.

Yet there is a general approach that every government can use to implement circularity.

Chapter 8

How to become a circular government

As we've seen throughout this report, several national and local governments are using their power to initiate and develop circular economic business models. By using laws and regulations, offering financial support or penalties and using their own purchasing power, governments are crucial to opening a path towards circularity. With many inspirational examples in the earlier chapters, we conclude with a practical approach that you can use to implement circularity in your country, province, or city. Please be aware that the (rather general) actions described below do not form a step-by-step plan, but run parallel.



Action 1. Understand the circular necessity

The first step is to truly understand the necessity of the circular economy. Get to know the basics: why our current model can't be sustained, and the fundamental changes that need to take place to abandon the linear economy. But more importantly, comprehend the opportunities that a circular approach will deliver.

Action 2: Lead by example

The most powerful way to show the need for circularity is to start acting. Therefore, it is strongly advised to become the leading circular organisation, yourself. By transforming your own processes and using governmental procurement power to stimulate suppliers, the government can learn how to implement and become aware of the practical challenges. A government will also learn which regulations it should be adjusting in order to take the circular path. It gives a strong signal to the market that the government takes the transformation seriously.

Action 3: Map circular economy principles to your local context

Circular economy principles should be placed in your local context. Define which sectors and policy areas are most affected. This may be within Waste, Resources, or Spatial Planning. Think in terms of overcrowded landfills that are bursting at capacity; materials that are susceptible to price and supply fluctuation; or overpopulation in urban areas causing traffic and high residential pressure. Based on this first local context assessment, certain "hotspots" can be identified.

Action 4. Create a comprehensive vision or strategy

Although not all implications and changes will be clear at this stage, it's important to draw a long-term vision on circularity. Define long-term goals and a clear roadmap for the next couple of years.

Action 5: Engage stakeholders: Start the dialogue

To facilitate the transition, engage all stakeholders and involve them in an early stage. Challenge them to bring ideas and solutions themselves, and provide input for the overall vision, strategy and policy instruments. This will create involvement, buy in, and produce the most promising solutions.

Action 6. Choose instruments & Start initiatives.

After the identification of the hotspots and stakeholder engagement, one should find the most effective policy instrument. To change and promote a circular economy, a government has multiple instruments at its disposal: laws and regulations, fiscal measures, grants, partnerships and public procurement. The government can decide which instrument is most effective in its own context. Remember, inspiration and details from experts worldwide can be found via the website.

Once it has been decided where and with what instrument, the circular economy will be implemented, and it is time to put effective initiatives in place. At the beginning, these can be standalone projects. This is not the final goal but the first step towards a circular economy, in which the "Start Small, Scale Fast" approach can be used. Of course the results should be measured and evaluated over time.

Action 7. Monitor, adjust and scale

The transition towards the circular economy will take several years, during which the progress should be measured and the roadmap adjusted. Initiatives that prove to be successful, will be implemented on large scale. Step by step the circular economy will be put in practice.

Closing Remarks

This publication is meant to inspire governments worldwide by informing them what works and what is possible. As far as we know, this is the first survey of government best practices to accelerate the circular economy. Together with our partners Accenture, EY, IMSA, and Royal HaskoningDHV, and their global networks, De Groene Zaak has identified over 30 cases that are presented on the website govsgocircular.com. We invite governments to find inspiration here and add their success stories to help accelerate the transition towards circularity.

We would like to thank the civil servants of governments worldwide, who helped in sharing their insights and approaches, and we hope it gives you valuable insights to follow those leaders.

This report is not a scientific study, and does not pretend to be complete. The examples are drawn from desk research, some international contacts, and from our colleagues in offices around the world, as well as scientists connected to Het Groene Brein (The Sustainable Science Association). In many cases, the input was provided by a contact involved in a particular example. When selecting examples, we endeavoured to reflect an appealing variety; in many cases there were more examples available, especially in the field of waste management. It is possible that there are also more types of examples.

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About De Groene Zaak
De Groene Zaak is the leading Sustainable Business Association in The Netherlands, uniting over 200 front-runner companies. They all share one clear overall business objective: Making our current economic order fully sustainable as fast as possible. They do so by continuous lobbying for a level playing field for sustainable business, by putting sustainability issues on the public agenda and by including various stakeholders in future business opportunities. The partners also develop new, innovative sustainable business models themselves, building the bridge for others to follow. Last, but not least, De Groene Zaak is closely cooperating with the sustainable scientists network Het Groene Brein, achieving strong synergetic effects. For more information, please visit www.degroenezaak.com.

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