



GREEN WIN

Green-win
Narratives

Green-win Narratives

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Content

Preface	7
Acknowledgements	9
Introduction	10
1 Finance and Entrepreneurship Narratives	22
Stable policies, long-term finance, low cost of capital: The win-win combination to deliver decarbonisation with high economic performance over coming decades	23
Securing the 2 °C pathway: A deep dive on how policy-makers can take it forward	27
Successful green entrepreneurs consider the connection of their business model with further win-win strategies	34
2 Urban Narratives	38
Harnessing disruptive change: How cities can transform towards sustainable futures through innovative social partnerships	39
MOBIKE: Dock-less and App-based flexible bike-sharing system	43
Invest in coastal adaptation projects that include land reclamation to leverage public budgets	50
3 Rural Narratives	53
Not one-fits-all solutions! But multiple and diverse solutions to fit the needs of all	54
Tanzania Dome: Post-harvest storage and community mobility service for rural Tanzania	59
ILLOVO Sugar: Developing climate resilience of smallholder sugar cane farms	62
SU-RE.CO: Use of biogas to roast coffee in Indonesia	65
Aral Sea Biogas: Energy from and for farms in the Aral Sea Region	68
4 Energy Narratives	71
Simon – energy: Plug and play photovoltaic modules for everyone!	72
Solar – route: The world's first free solar-charging route for electric vehicles in Austria	75
5 Global Dialogue Process Narratives	78
Building a win-win alliance	79
The world and economy that we want	82
Final remarks	87



Preface

The GREEN-WIN project (September 2015 – December 2018) is a major international transdisciplinary research collaboration supported by the EU (Grant Agreement 642018) applying a solution-oriented approach targeted at increasing the understanding of links between climate action, economic development and sustainability and overcoming implementation barriers through win-win strategies. The project critically assesses where and under which conditions win-win and green growth strategies that meet climate, economic and sustainability goals work in practice and where fundamental trade-offs must be faced. The project team is focusing on four particular themes that have been identified by practitioners and policy makers:

- Develop transformative narratives highlighting opportunities in climate and sustainability action in order to contribute to overcoming cognitive barriers and empower people;
- Examine climate and sustainability finance policies and governance arrangements in order to contribute to overcoming financial barriers to mitigation and adaptation;
- Substantiate the economics of green growth in order to contribute to overcoming economic and collective action barriers to de-carbonisation;
- Contribute to overcoming economic and institutional barriers through identifying win-win strategies, sustainable business models and enabling environments in three action fields of coastal zone flood risk management, urban transformations and energy poverty eradication and resilience.

All these activities are embedded within a sustained international dialogue involving stakeholders from policy, research, civil society and the private sector, and an open knowledge management and capacity building strategy to promote knowledge transfer and learning beyond the project lifespan.

Image: A solar terminal installation, © Photo: Richard Waters



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Image: Building permeable dams, Indonesia, © Photo: Nanang Sujana

Introduction

This booklet presents a set of narratives developed through the course of the GREEN-WIN project within the Global Dialogue and the detailed studies carried out by the project partners. This first section explains why narratives are important and discusses green growth, win-win and some of the recent narratives of relevance to addressing the challenge of climate change that have been explored in the GREEN-WIN project.

What are narratives and why are they important?

Narratives are probably as old as modern humans. One of the oldest narratives known is the Gilgamesh Epic¹ (dating back to the middle of the 3rd millennium BC): in his travels a hero encounters many dangers and obstacles that he has to overcome. This structure is essentially the same as other prominent narratives throughout history. For example, in the case of Ancient Greek culture, this structure is found in narratives describing the exploits of Jason and the Golden Fleece and the narrative about Odysseus/Ulysses, while it is also found in the narratives describing the acts of Christ and those referring to Mohamed.

As such, narratives are sense-making devices that help explain the complexities of life and give direction to human action. Narratives anchor humans within their given culture, giving meaning to actions and events. Moreover, narratives often emerge to 'explain' an unknown phenomenon in terms of the culture that experiences it. One could say that the narrative acculturates a phenomenon into the wider culture of the society involved. As such, narratives, in both (re-)asserting identities and making sense of new or unknown phenomena, serve to organise human behaviour.

It is important to note that narratives can become self-fulfilling prophecies, by telling something that changes human behaviour in the direction of the narrative. Furthermore, negative narratives (self-destroying prophecies) may hinder human action. A typical example is found in economics: if people believe that a recession is on its way, they behave as if it is already here. They do not invest anymore and reduce consumption, they are very risk averse and hardly any start-ups or new companies emerge, innovations are blocked, and so on. All of these lead to the recession.

¹ See for example: www.jasoncolavito.com/epic-of-gilgamesh.html

INTRODUCTION



But narratives can of course also be empowering and play a crucial role in engendering change. Indeed, emerging research has pointed to several aspects of narratives that make them effective in enabling transformations. Transformative narratives are effective in crystallising action, when they: 1) support and resonate with aspirations, ideals and desires; 2) are engaging and empowering, so that individuals feel that their participation is voluntary and constructive; 3) resonate with moral authority e.g., fairness, responsibility, or inclusiveness (Pahl-Wostl et al. 2007). A transformative narrative tells a positive and engaging story, by articulating a vision of "where we want to go" and provides solutions for attaining this vision, rather than articulating problems to be avoided (Tàbara et al. 2018).

Yet, at any given time, various narratives exist in any society or domain. These different narratives may be complementary, resonating and reinforcing one another. One narrative can become dominant in contemporary discourse reinforcing other narratives that are complementary to, or resonate with, the dominant one. For example, a neoliberal narrative regarding market-based solutions to societal challenges in a range of policy areas can enable the emergence of a similar narrative regarding solutions to climate change. Narratives may also compete through presenting contrasting visions of the world, fragmenting the discourse in a given society or domain, but also giving space for the emergence of new narratives for organising human and societal action. In fact the existence of tensions between multiple narratives may trigger innovation and learning among agents operating in a given complex social-ecological system.

The burden-sharing narrative

For over two decades, the interaction between science and policy on the issue of climate change has assumed the following pattern. Climate research provides information on the impacts of greenhouse gas (GHG) concentrations, showing that today's emissions will place a heavy burden on future generations, including increased occurrence of extreme weather events, rising sea-levels and growing pressure on food production. Furthermore, while the developed countries are the largest emitters, developing countries are generally those that experience the severest impacts.

This narrative provides strong ethical arguments for reducing greenhouse gas emissions and for assisting developing countries in meeting the costs of adaptation. And indeed these arguments have been successful in bringing the climate issue onto political agendas and supporting the United Nations Framework Convention on Climate Change (UNFCCC) process, providing the impetus for countries to agree on ambitious climate mitigation targets and set up financial transfers from developed to developing countries. The recent Paris Agreement, in which the 195 UNFCCC member states agreed on the goal to limit global warming to “well below 2°C” demonstrates a success in this pattern of science-policy interaction.

However, this narrative has been less successful in helping to deliver a globally binding agreement on how much each country should contribute in order to reach the “well below 2°C” climate goal. If countries can agree on a goal, why can’t they agree on how to reach this goal? The generally accepted answer is that reducing emissions is a) costly and slows down national economic development, and b) a global public good, where individual countries have the incentive to free-ride on the actions of others. In other words, individual countries may opt not to reduce their emissions, relying on other countries to take on this burden. Two decades of climate negotiation have shown that it is indeed very unlikely that countries are willing to sacrifice economic growth for emission reduction. A recent manifestation of this can also be found in the Paris Agreement, according to which global emission reduction remains to be based on voluntary national contributions.

The green growth/green economy narrative

Another narrative that has become prominent in recent years is the green growth or green economy narrative. And indeed, green growth seems to be a very attractive answer to the climate dilemma, because if this is possible, the global public good dilemma would disappear, as it would then be in the interest of single countries to reduce emissions and the global public good of a safe climate would be provided as a side effect of these individual actions.

It is thus not surprising that this concept has gained wide popularity in the policy world. The concept of green growth and the related one of green economy have, in fact, emerged in the policy domain as win-win strategies that reconcile economic and environmental goals. Green growth is thereby understood as “growth that allows



natural resources to continue to provide the resources and environmental services on which well-being relies” (OECD 2011). The vision of a green economy that “results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities” (UNEP 2011) has been adopted as a development strategy by leading international organisations such as the International Labour Organization, United Nations Environmental Programme (UNEP), the United Nations Industrial Development Organisation (UNIDO), the World Bank and the Organisation for Economic Co-operation and Development (OECD). In 2005 52 Asian and Pacific governments signed a green growth declaration that recognizes the need to shift the development orientation from a “grow first, clean up later” approach to one of green growth. It is worth noting that these definitions of green growth and a green economy underline the point that in fact human well-being is the societal goal and not economic growth in itself.

But is green growth really possible? Can this concept help to overcome barriers to climate action or is it just an oxymoron that disguises business-as-usual development? These are open questions. The concept of green growth has emerged in the policy domain with, so far, only limited research underpinning it (Zysman and Huberty 2012). To date there is little empirical evidence that economic growth has been substantially decoupled from carbon emissions (Hepburn and Bowen 2013) and little effort has been made to substantiate the concept through economic theory and applied economic modelling (Scricciu et al. 2013). Furthermore, some core arguments found in the green growth debate are neither new nor substantial in the sense of referring to long-term intrinsic growth-generating dynamics of the economy. An example of an old argument transformed into a green growth argument is the one of growth and green jobs creation through Keynesian demand stimulus prominently made in American and European policy debates during the aftermath of the financial crisis (Zysman and Huberty 2012).

Even if it proves possible to decouple growth from emissions, a remaining challenge is to decouple growth from material use (see, for example, Giljum et al. 2017), given the strain on ecosystems that continued increased material use could bring. Such considerations may give rise to difficult trade-offs, if decoupling material use from growth is not achieved.

The call for new narratives

Both within the context of climate change as well as beyond, there is a call for new narratives. Indeed, several prominent global actors have recently emphasised the need for new narratives in order to catalyse individual and collective action for economic, social and environmental goals. For example, the United Nations Sustainable Development Goals (SDG) Action Campaign, tasked with supporting advocacy and public engagement in the SDG implementation globally, has emphasised the need for a new narrative of global development. Similarly, the G20 have pointed to the need to develop a new narrative of economic development describing an open, dynamic, and entrepreneurial economy, while also being fair, locally rooted and one in which everybody feels valued (G20 Insights, 2017).

In the climate domain, the narrative of bottom-up transformation has gained popularity, which emphasises the need for fundamental institutional and system changes in order to align development to sustainability (Tàbara et al. 2018). Historically the dominant narrative regarding climate action has emphasised “top-down” solutions of globally binding agreements on emission reductions. The 2009 Copenhagen Conference of Parties, which failed to achieve such a global agreement, illustrated the serious challenges associated with this narrative. Indeed, achieving global collective action for, e.g., a global carbon price, is exceedingly difficult, particularly when such measures are perceived by countries to be against their individual short-term interest. The recent 2015 Paris Agreement witnessed the emergence of a different narrative emphasising voluntary contributions to climate action. The Paris Agreement, based on so-called Intended Nationally Determined Contributions (INDC) from each country, acknowledges the difficult trade-offs countries may face between economic growth and climate action, and puts a greater emphasis on “bottom-up” solutions that resonate with country interests and goals.

Given the failure of the “Copenhagen narrative” and the emergence of the Paris Agreement, it appears that we now need multiple narratives to move from the “top-down” single story, to a recognition of the complex and diverse world that we live in. We need a set of narratives that are engaging because they have been validated in local contexts. To make such narratives engaging we need to establish clear links between solutions related to climatic change and a broader set of solutions embodied in the Sustainable Development Goals



The GREEN-WIN project has developed an approach to identify such narratives based on the recognition of the limited effectiveness of top-down global narratives that do not have an empirical validation. These GREEN-WIN narratives are presented in this publication.

Win-win narratives

The GREEN-WIN project has taken up the need for diverse, bottom-up narratives by putting forward more modest versions of the green growth narrative. We believe that win-win strategies that reconcile climate, economic and sustainability goals exist on different levels of societal organisation, ranging from individual entrepreneurs to whole economies. For example, an investment-oriented climate policy may switch the European economic system to a pathway with higher growth, lower unemployment and lower emissions (Tàbara et al. 2013). On the level of individual entrepreneurs, numerous initiatives around the world exist to find ways by which small and medium-sized enterprises can contribute to climate and sustainability goals.

However, win-win and green growth strategies cannot be found everywhere and it is also generally not directly evident when and where win-win works or not. Rather, win-win strategies need to be discovered and validated. So far, there has been little dedicated research targeted at uncovering these win-win opportunities. The has contributed to filling this gap by assembling a global transdisciplinary team of research institutes, think tanks, international and civil society organisations, finance institutions, networks, and private businesses to assess critically under which conditions win-win and green growth strategies may be realized, transferred and up-scaled and where fundamental trade-offs must be faced.

We thereby aimed at finding multiple narratives at an intermediate level between the “big” global narratives and the uniqueness of specific cases. Furthermore, acknowledging that there is no simple fix to the climate problem that works everywhere and for all times, we see an opportunity to find win-win strategies that are economically attractive today for individual countries, regions or firms, but, at the same time, contribute to climate and sustainability goals.

Specifically, GREEN-WIN looked for win-win strategies at two levels. At the level of national economies we looked for theoretical evidence on green growth by advancing state-of-the-art macro-economic models in order to identify green growth pathways. At local levels, the project looked for empirical evidence, identifying win-win strategies and enabling environments for green businesses in the areas of coastal flood risk management, urban systems, energy poverty and climate-resilient livelihoods. At both levels, GREEN-WIN investigated financial products and policies, as well as financial system reforms that redirect financial flows towards sustainability and climate action.

We note that by conducting research aiming at identifying short-term economic opportunities in emission reduction and climate change adaptation there is no intention to say that we should stop doing research that supports the ethical arguments as outlined above. On the contrary, the climate problem is so serious and complex that no one can honestly claim that any one strand of research can lead to success. However, it is time to shift substantial effort from the provision of long-term ethical arguments, which have received the most attention up to now, to the provision of short-term economic arguments, which have received little attention so far in climate research despite being at least equally important for solving the climate problem.

The same can be said about other strands of environmental research. For example, while research on alternative growth concepts and de-growth is certainly important, narrowly focusing research efforts on just this would also be a mistake. Indeed, as the results of the GREEN-WIN project emphasise, the key is to find transformative narratives that change the relationships between economics and governance. Nevertheless, it is hard to imagine we could make any significant progress towards solving the climate problem without providing economic arguments for reducing emissions that work today for individual countries, regions and entrepreneurs. Research supporting this offers new and fascinating avenues.

The content of this booklet

This booklet presents five sets of win-win narratives that have emerged from the transdisciplinary research conducted in GREEN-WIN, including a Global Dialogue process that consisted of two meetings and a major international conference with

INTRODUCTION



participants from around the world and from the policy, business, industry, research and civil society domains. Some narratives have been developed by the GREEN-WIN project team. Others have emerged in regional case studies conducted by GREEN-WIN and other members of the Dialogue process from around the world.

Further, the regional case studies have been analysed by the GREEN-WIN team in terms of their potential to be scaled out, up and deep (Omann et al. 2018). Scaling out means affecting more people and covering a larger geographical area through replication and diffusion. Scaling up means changing institutions or policy at higher levels of governance or geography, amplifying the impact of solutions through changing the context that supports the innovation by developing enabling platforms (policies, resources, partnerships). Scaling deep implies the transformation of people's hearts and minds, values and cultural practices and the quality of their relationships. A short discussion of the scaling potential of some of the regional solutions is presented in these narratives.

A first set of narratives focuses on the results of research on climate finance and green entrepreneurship.

- Stable policies, long-term finance, low cost of capital: The win-win combination to deliver decarbonisation with high economic performance over coming decades shows how the investment challenges for a transition to a low-carbon economy could be met.
- Securing the 2°C pathway: A deep dive on how policy-makers can take it forward discusses possible policy interventions to align financial flows with climate goals.
- Climate clubs reconcile economic and climate objectives discusses how international collaboration in climate clubs could incentivize countries to implement ambitious emissions reduction targets.
- Successful green entrepreneurs consider the connection of their business model with further win-win strategies highlights the connection of win-win strategies along a common value-consumption chain.

These narratives show that there is a range of policies available at different scales that can achieve climate win-wins. Internationally, appropriate trade or financing agreements can achieve such win-wins. For national policy makers, a number of policies exist that operate within different decision-making processes, e.g. from green standards to supporting long term low-carbon investment, and research can enable a better understanding of the relative attractiveness of these various policies. At the individual green business level, policies that support capacity building for green entrepreneurs are desirable.

The second set of narratives highlight research results, including regional case studies, on urban transformations in cities, also in coastal areas.

- Harnessing disruptive change: How cities can transform towards sustainable futures through innovative social partnerships analyses disruptive innovations in a variety of urban systems and their potential for transformations to sustainability.
- MOBIKE in China: Dock-less and App-based flexible bike-sharing system addresses a range of transportation-based issues in urban areas.
- Sustainable fly-ash brick production in India: Low-carbon, low-energy, low environmental impact bricks to support local economies highlights a low-tech solution with multiple benefits.
- Invest in coastal adaptation projects that include land reclamation to leverage public budgets shows how public financing constraints can be overcome by investing in projects integrating coastal adaptation and land reclamation or urban land redevelopment.

These narratives show that active partnerships between not only government and companies, but also citizens, as consumers, are needed for urban transformations involving green businesses. These partnerships can be enabled through various emerging technologies. Further, experimentation with policy mixes and, for example, public procurement versus regulation can enable scaling up and accessibility of sustainable technologies.

A third set of narratives highlight research results, including regional case studies, on reducing energy poverty and improving rural livelihoods.



- Not one-fits-all solutions! But diverse solutions to fit the needs of all examines an array of discrete and locally-situated solutions to eradicate energy poverty and ensure climate resilience at community and household levels.
- Tanzania Dome: Post-harvest storage and community mobility service for rural Tanzania shows how food security and resilience of local communities can be improved.
- ILLOVO Sugar: Developing climate resilience of smallholder sugar cane farms in Africa demonstrates how risk assessment tools can strengthen regional resilience.
- SU-RE.CO: Use of biogas to roast coffee in Indonesia demonstrates a solution that improves environmental protection and local prosperity.
- Aral Sea Biogas: Energy from and for farms in the Aral Sea Region supports the move to a low-carbon economy while reducing poverty and social inequality.

The rural narratives show that viability of win-win solutions in these settings depends on the crucial and often essential role of knowledge spill-overs through experience exchange and capacity building that occur through the networks that support the deployment and access to sustainable technologies.

A fourth set of narratives focuses on regional case studies of energy win-wins.

- Simon-energy: Plug and play photovoltaic modules for everyone! demonstrates a very simple, easily accessible and affordable solution to provide renewable energy.
- Solar-route: The world's first free solar-charging route for electric vehicles in Austria highlights a green business concept implemented by a passionate entrepreneur to contribute to a low-carbon economy.

These narratives show the key role that, on the one hand, green entrepreneurship, and the other hand, short-term economic benefits for consumers, can play in influencing the institutional and policy settings in which they emerge, thus creating the institutional changes needed to enable further scaling up.

The fifth set of narratives focuses on the Global Dialogue process itself.

- Building a win-win alliance highlights the value of a process to build a community of researchers, decision-makers and practitioners to discuss win-win solutions.
- The world and economy that we want demonstrates the need for a vision to guide win-win solutions.

These narratives highlight the importance of careful design of a participatory process to engage stakeholders in a meaningful exchange of knowledge. Furthermore, they show that a dialogue motivates broad thinking about how sustainable future could be achieved.

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1

FINANCE AND ENTREPRENEURSHIP NARRATIVES

Stable policies, long-term finance, low cost of capital: The win-win combination to deliver decarbonisation with high economic performance over coming decades

Key message

- The scale and cost of low-carbon investment depends on the policy framework, market conditions and the capacities and governance structures of the investors themselves
- The cost of capital is a very important factor determining the relative attractiveness of low- versus high-carbon sources and is mainly driven by the country risk and policy stability; a low cost of capital can yield investments that are economically attractive and bring several co-benefits
- Effective policy actions, including low carbon incentives with clearly defined degression mechanisms, and a market structure suited to long term investment under a clear legal framework, are key to low cost and long-term finance, attracting low-carbon investment

The Challenge

The transition to a low-carbon economy is a capital-intensive process requiring large-scale finance of suitable low-carbon investment programmes. The challenge of long-term investing is linked to the expansion of efficient (e.g. low cost) private finance for capital-intensive, low-carbon assets, addressing barriers linked to behavioural practices, pricing frameworks and market design and structural barriers of investment decisions.

Speeding up the low-carbon transition

Much low-carbon investment is capital-intensive but cheap to operate; it also tends to bring environmental and other co-benefits. The relative attractiveness of different energy investments may be substantially affected by their cost of capital, depending upon the relative capital intensity, construction times, perceived risks and expected

operating lifetimes of the asset. The higher the cost of capital, the more up-front investment costs will weigh.

Factors affecting the scale of investments operate at both general and sector levels, and arise from the policy framework, market conditions, and the capacities and governance structures of investors. They include perceived country risk, the policy framework, investors' experience and performance track record in the sector, and analytical approaches to assess climate risks and opportunities.

Moreover, different policies in place and country risk profiles determine the wide variation of investments' rate of returns across markets and sectors. A rate of return of around 8% as, for example, found in Greece and emerging economies is more than double that of Germany (about 3.4%). The higher return is demanded in order to compensate for the higher perceived risks.

Effective government policies are crucial to improve the attractiveness of low-carbon investments, reduce the cost of capital, and speed up the low-carbon transition.

Recommendations

Boosting low-carbon investment will require a range of actions addressing behavioural practices, pricing frameworks and market design and structural barriers. Policies focusing on the development of standards and engagement, such as data collection and reporting standards, may enable investors to overcome incentives for short-term decision-making. Moreover, the scale up of liquid financial instruments targeting large low-carbon projects will further increase investors' involvement in the low-carbon economy. Policies based on markets and pricing instruments would influence the profitability of low-carbon investments, and increase their attractiveness to investors. Policies promoting technical and institutional innovation, along with cultural changes, can create the conditions for strategic long-term investment. In particular, strategic deployment of public long-term capital in key phases of the investment channel, such as development finance institutions deploying de-risking instruments and pooling projects together, with long-term policy signals might allow investors to invest at scale. Finally, less expensive investment channels and reforms of the anti-monopoly regulation in the EU (e.g. unbundling requirement of the EU's Third Energy Package) will also help to increase low-carbon investments.



BARRIERS

Pricing frameworks and market design

- ✎ Lack of transparency, stability, credibility of the policy framework
- ✎ Regulatory structure incentivising liquidity and short-term horizons

Behavioral practices

- ✎ Investors' investment preferences
- ✎ Investors' lack of experience and capacity
- ✎ Governance structure incentivising short-term performances
- ✎ Lack of clear and reliable data to inform decision-process

Structural factors

- ✎ Lack of long-term stability of the political system
- ✎ Anti-monopoly regulation and trade-off with climate finance support
- ✎ Lack of channels to scale-up institutional finance



DRIVERS

Pricing frameworks and market design

- ✎ Policies incentivising low-carbon investment
- ✎ Changes in the financial regulatory system (e.g. Solvency II)

Behavioral practices

- ✎ Regulation and standards (e.g. clear and reliable data)
- ✎ Liquid financial instruments targeting large projects

Structural factors

- ✎ Long-term public capital and policies
- ✎ New and less expensive investment channels
- ✎ Reform anti-monopoly regulation

Figure 1: Barriers and drivers to low-carbon investments

Sources of further information

GREEN-WIN website: www.green-win-project.eu

2 Degree investing initiative website: www.2degrees-investing.org

UNEP Inquiry website: www.unepinquiry.org

High Level Expert Group on Sustainable Finance: www.goo.gl/FpxufM

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Securing the 2° pathway: A deep dive on how policy-makers can take it forward

Key messages

- Three components for securing a 2°C pathway: Assessment, Disclosure & Incentive - the building blocks of financial policies
- Deepen the policy debate through evidence-based arguments and comparative assessments of existing public incentives, monetary instruments & financial regulations
- Incentives impacts on financial flows: the Green Supporting Factor impact estimation is relatively small compared to the SME Supporting Factor or the Brown Penalty

The Challenge

Securing finance for 2°C pathways includes the alignment of the financial flows with climate goals. This faces two major barriers: market mispricing (tragedy of the commons) and short-term financial decisions (tragedy of the horizon). The challenge is to analyse potential policy interventions which could help overcome these barriers at all levels and estimate their potential impact.

Aligning financial flows with climate goals

At the 21st Conference of Parties to the UN Convention on Climate Change, it was universally agreed that securing finance for the 2°C pathway includes the alignment of the finance sector's activities with climate goals. However, two major stumbling blocks are hindering a better integration of climate-related issues into financial decisions: the "Tragedy of the Commons" or how externalities of climate change are not internalized by economic actors making the investment decisions leading to market mispricing, and the "Tragedy of the Horizon" or how short-term investment decisions are misaligned with the long-term horizon required by climate and sustainable development considerations. In other words, the decision-making process and how well it is informed will be key in aligning financial flows with the 2°C

pathway. The financial information chain relies on three major blocks: Assessment, disclosure and incentives, which are ruled by policymakers, and they should now take the opportunity to push them forward. But how?



Assessment based on the European supervisory scenario analysis (monitoring consistency with sustainability objectives, monitoring the resilience of financial markets and providing guidance) would be the first step to provide the necessary information for the decision-making process. But what about retail investors? Are they willing to have an impact on the real economy? A recent study shows that 70% of retail investors find it important to take social and environmental objectives into account in investment decisions, while in the majority of cases they are not discussed during meetings. Implementing disclosure processes could be the solution by integrating non-financial preferences in suitability requirements. On the regulatory side, policymakers (The European Securities and Markets Authority - ESMA) should extend their guidance towards standardised suitability assessment processes, while the rise of automated advisory approaches (robo-advice) opens a window of opportunity to address this issue. Last, but not least, Incentives. Indeed, they are key to drive financial flows and investments towards the 2°C pathway, but



have we measured their impact? We measured the impact of two incentives: The Green Supporting Factor (GSF) vs. the Brown Penalty. The former lowers capital requirements for certain climate-friendly investments, such as energy-efficient mortgages or electric cars (with reference to the SME Supporting Factor incentive, which provides preferential treatment for loans to SMEs), whereas the latter penalizes high-carbon assets with a higher risk-weight. When comparing the impact of these two incentives on capital reserves of European banks and on the cost and availability of capital to “green” and “brown” investments, results show that the GSF impact is not as high as the SME Supporting Factor and underestimated compared to the impact of a Brown Penalty on high-carbon assets. The larger universe of high carbon assets compared to green assets on which a penalty would be applied could explain this difference.

Policy discussion on aligning financial flows with climate goals is now extending beyond its initial focus on assessments and information to the idea of setting the right financial incentives. While this is a positive dynamic, the choice of the right instruments and the concrete policy design needs to be well understood, which will be made possible through the clarification of different policy options, their underlying justifications and their expected impacts.

Recommendations

A clear policy intervention at the three levels of the financial information chain is key to secure finance for a 2°C pathway. We recommend that policymakers focus first on the components of assessment and disclosure, which can be implemented within a relatively short time-span. Revision of the Market in Financial Instruments Directive (MIFID II) and Packaged Retail and Insurance-based Investment Products (PRIIPs) regulations has already started within the framework of the sustainable finance action plan of the EC, and thus gives, together with the evolution of automated advice, the opportunity to act on this issue. The second step would be to perform a comparative assessment of different policy instruments (from the realms of direct public incentives, monetary instruments and financial regulation) to identify the right policy mix to implement the right financial incentive.

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Climate Clubs reconcile economic and climate objectives

Key messages

- Climate clubs offer opportunities for countries that share common climate objectives to form partnerships in the fields of trade, finance, R&D and technological diffusion
- These climate clubs would provide both economic and climate benefits. Hence, membership will be driven by the benefits that the club provides in terms of economic growth and jobs rather than by the penalty or the cost of not joining
- The core of the club could be formed by EU and China. The challenge will then be to extend membership to other large greenhouse gas emitters

The Challenge

Existing action against climate change is partial and fragmented, which is ineffective both from an environmental and an economic perspective. Which macro-economic strategies can be pursued to improve both the environmental and economic effectiveness of climate policy? A number of contributions to the policy debate have adopted a “green growth” perspective, notably in view of generating an economic stimulus in a context of sluggish growth. However, their credibility in important economic and policy arenas is undermined by the absence of a concrete implementation plan. That is exactly what climate clubs offer.

Climate Clubs Gain Momentum

The idea of partial forms of international collaboration through the creation of “climate clubs” is gaining momentum both in the policy-making and the scientific communities. Such clubs would incentivize countries to implement ambitious emissions reduction targets by providing, conditionally on these reductions, access to a range of public goods such as low-cost financing, free trade areas or technology patent sharing.

In particular, a key public good that could structure the club is the provision of low-cost climate finance, which reduces investment costs and also enables developing countries to take full advantage of technological diffusion. Indeed, a large share of the financing needs for a 2°C scenario lie with the largest developing countries, China and India, where credit conditions for low-carbon investments would be much improved if they would be aligned with credit conditions currently available in European countries. Lowering barriers (i.e. patent restrictions) to promote sharing knowledge and technology diffusion provides benefits both to the members of the club but also to non-members through trade of intermediate goods. Establishing a free trade area benefits the club but at a small scale as currently world economy is quite integrated (i.e. few tariffs exist in major trading countries).

The core of the climate club could be formed by EU and China. The challenge will then be to extend membership to other large GHG emitters. Figure 2 shows the benefits in terms of GDP for different club formations: 1) Finance: Members of the club enjoy access to low-cost financing, 2) Finance and Technology: Members of the club enjoy access to low-cost financing and barriers to share knowledge are lowered, 3) Green Club: In addition to the finance and technology club benefits, a free trade area is established.

GDP (cumulative 2015–2050) Green Coalition

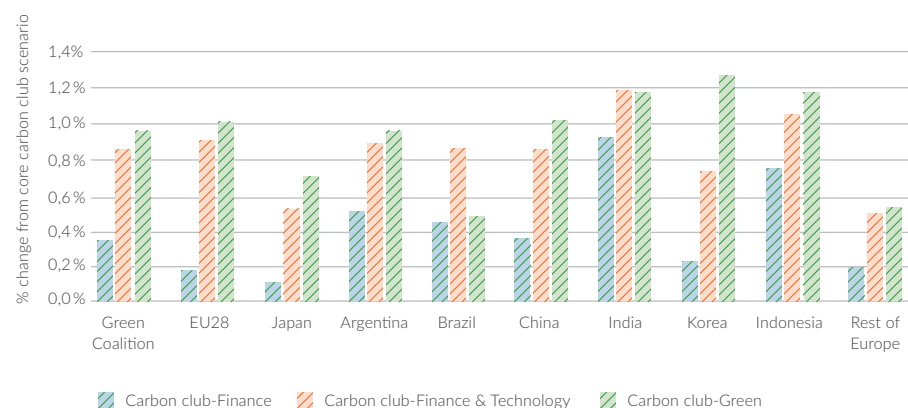


Figure 2: GDP impacts for different climate clubs



Recommendations

Estimates on financing requirements and associated costs should be further developed at both regional and sectoral level so as to facilitate the process of developing institutional schemes (i.e. Green financing institutions/instruments) for the supply of low-cost climate finance. The drivers of technology dynamics and the channels of knowledge spill-overs needs to be further investigated so as to allow the formulation of instruments that will accelerate technology cost reductions. The implementation of large-scale technological cooperation projects in specific sectors could be such an instrument. Strengthening the European - China collaboration on all aspects of climate policy could create the critical mass for developing sustainable climate clubs.

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Successful green entrepreneurs consider the connection of their business model with further win-win strategies

Key messages

- Just like any other successful business model, green business models are connected along a value-consumption chain with further upstream and downstream socio-economic activities. Upstream activities feed into the business model, while the ultimate end point downstream is consumption of goods or services.
- Comprehending the value-consumption chain in its entirety is key for the successful implementation of a green business model.
- In particular, a green entrepreneur needs to understand how economic value is created along the chain and where the environmental win takes place.

The Motivation

Win-Win strategies generate a double win: They combine economic and environmental improvements. Green business models are a special type of WWSs. A successful entrepreneur, whether operating a green business or not, realises an economic win by implementing a business model.

A green business model – a specific type of win-win strategy – is characterised by an environmental win that emerges in addition to an economic win. While the economic win of a green-business model goes to the entrepreneur, the environmental win can take effect at the position of the entrepreneur, or at a position upstream or downstream in the value-consumption chain.

Green business models often are connected to other WWSs along a common value-consumption chain. As a prediction for success, a green entrepreneur needs a comprehensive understanding of the embedded value-consumption chain. In particular, a detailed understanding of the kind, size and location of the potential environmental win along the value-consumption chain.



This comprehensive understanding of the value-consumption chain is useful for setting up the business in the first place, and for sustaining it in the face of market changes, technological developments or changes in customer requirements.

An example

The following example presents the connection of WWSs along one common value-consumption chain. It highlights that each WWS depends on being connected to all other WWSs.

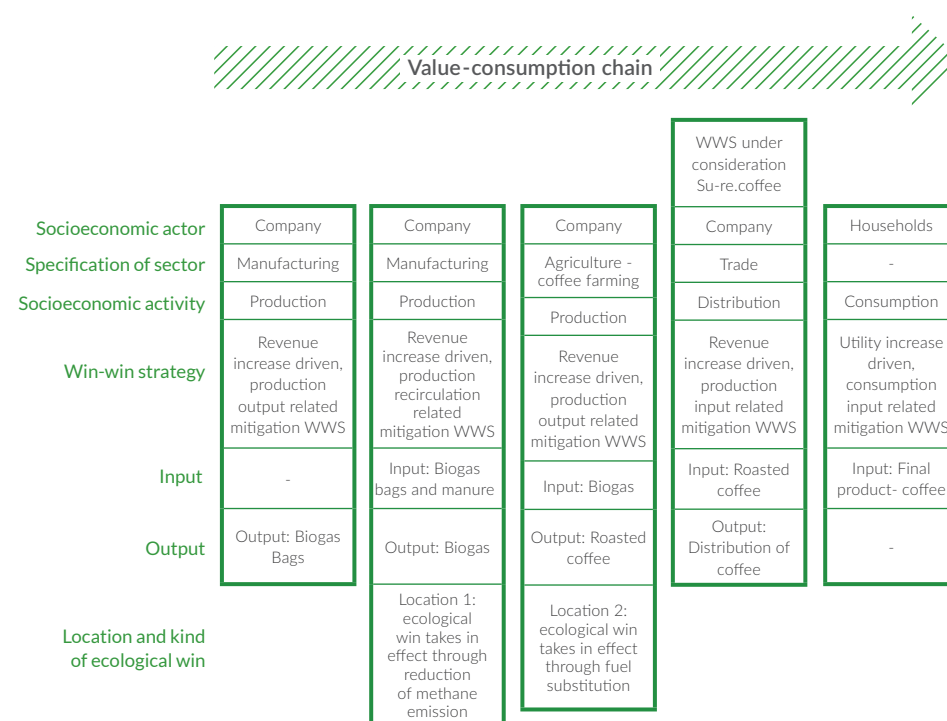


Figure 3: The connection of WWSs along one common value-consumption chain.

In this example, the value-consumption chain includes five actors, of which four are companies and one, the final consumer, is a household (Figure 3). The final product of this value-consumption chain is roasted coffee. The WWS under consideration in the GREEN-WIN project was su-re.coffee – a distributor of roasted coffee (see also a more detailed description of this case in this publication). A key feature of the coffee is that it is roasted with biogas instead of fossil energy. The demand and thus the value generation along the whole value-consumption chain is induced by a consumer preference for coffee roasted in an environmentally friendly way.

The economic win for su-re.coffee results from selling coffee. The win-win strategy of su-re.coffee is connected to three further WWSs upstream in the value-consumption chain: Su-re.coffee purchases roasted coffee from local coffee farmers. Coffee farmers use biogas for the roasting process, which is produced by stock farmers. Stock farmers use manure for the biogas production and biogas bags. This creates demand for the biogas bag manufacturer. Downstream, consumers prefer sustainably roasted coffee. The value-consumption chain thus consists of five WWS: a biogas bag manufacturer, stock farmers, coffee farmers, a coffee distributor and households.

Two environmental wins take effect: The first one in the stock farming where biogas is generated by manure, which reduces methane emissions; the second one in the coffee roasting process, where biogas substitutes fossil fuels.

Su-re.coffee has a detailed understanding of the processes upstream in the value-consumption chain and of customers' behaviour downstream. The first is needed for assessing the environmental win that drives their own business model, while the latter is required for understanding consumer preferences.

This value-consumption chain is just a part of a much broader network of interacting socio-economic actors, who contribute to the consumption of the sustainably produced coffee. For instance, infrastructural networks, such as roads or water systems, that are needed for the production processes are not considered here. But obviously they might be of relevance if the whole environmental footprint of the coffee were to be evaluated.



Recommendations

For green entrepreneurs: Equip yourself with a broad understanding of the economic and technological processes within the value-consumption chain of which your green business model is a part. Running a green business model just with idealism is not sufficient.

For governmental organisations: Support the development of business skills, management, sustainability measurement and reporting and financial literacy of entrepreneurs.

For NGOs and civil society: Keep in mind that a green business model needs to have two properties, "it has to be green" and "it has to be a business".

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2

URBAN NARRATIVES

Harnessing disruptive change: How cities can transform towards sustainable futures through innovative social partnerships

Key messages

- Disruption brings opportunities for GREEN-WIN sustainable development, conditioned by innovative social partnerships and enabling environments for transformation
- Three “Co” relationships are critical for successful transitions to lower carbon futures: 1) Co-Creation of sustainability value, 2) Co-Evolution of goods and services within social-ecological limits, and 3) Co-Governance of emerging sustainability systems
- Disruptive innovations may be technological, natural, or social but they require coordinated systemic responses to enable transformations to sustainability (T2S)

Pressures on urban landscapes and infrastructure

Cities are experiencing rapid changes due to technological, political and socio-economic disruptions. These multiple drivers of change put pressures on existing urban landscapes and infrastructure, potentially leading to massive reconfigurations at multiple levels. Infrastructural reconfiguration involves radical changes of physical urban fabrics, such as urban renewal projects in Istanbul and sharing mobility transformation in Shanghai. Such large-scale and rapid transformations present ‘opportunity spaces’ for transformations to sustainability.

Reconfiguring urban systems

During disruptive change, the role of key actors – consumers, producers and governments – are blurring, blending, shifting, and converging – leading to a continuous yet rapid reconfiguration. For example, in contrast to the conventional model, where government regulates cleaner production activities while encouraging consumers to purchase sustainably-produced goods in the market place, in Shanghai’s

sharing mobility schemes, both producers and consumers are sharing the regulatory responsibilities during the value co-creation process to promote sustainability. At the same time, the government increasingly plays the role of co-producer and co-consumer of sustainable products and services. Recognising and taking advantage of such changing social forces is crucial for urban transformation towards sustainability. But how cities recognize and take advantage of such “green-win” opportunities is also important.

Disruptive changes are often brought about by global capital, technological, or political forces, yet local values, resilience, and adaptive capacities are key for safeguarding sustainability during the transition process. For example, in Venice, international mass tourism and big food supply chain industries have disrupted local agricultural practices and livelihoods by undercutting local markets and driving up the cost of local production. In response, local actors are self-organising in innovative social enterprises to find alternative business models and livelihood strategies (some involving agro- and eco-tourism) as a consequence of such changes. In Shanghai, online groups of sharing mobility enthusiasts are also self-organizing to safeguard a positive environment and ethos for bike-sharing and electrical vehicle sharing schemes, actively collaborating with digital platforms and governments to ensure that users engage in constructive sharing protocols. Policy makers need to mobilise co-governance mechanisms to empower the social capital and “green-win” values fostered by co-creation to co-evolve urban systems toward sustainability.

This “3-Co” helix (Figure 4) is relational, dynamic and contingent. To succeed in reconfiguring urban systems towards green transitions it must continuously (re) align physical systems (e.g., infrastructure) with knowledge systems and sustainable social-economic relationships. In addition to the 3 “Co” structure, a strong enabling environment is needed to propel the transformation to sustainability, including a green vision, cultural-cognitive motivations, policy and regulatory tools, and linked social-ecological and organizational and economic frameworks. The Shanghai sharing mobility case illustrates how significant T2S progress can be made when these structural and enabling environmental elements are aligned, and also how short-lived the progress can be when the enabling environment is distorted and the Co-relationships compromised by short-term interests (e.g., market dominance).

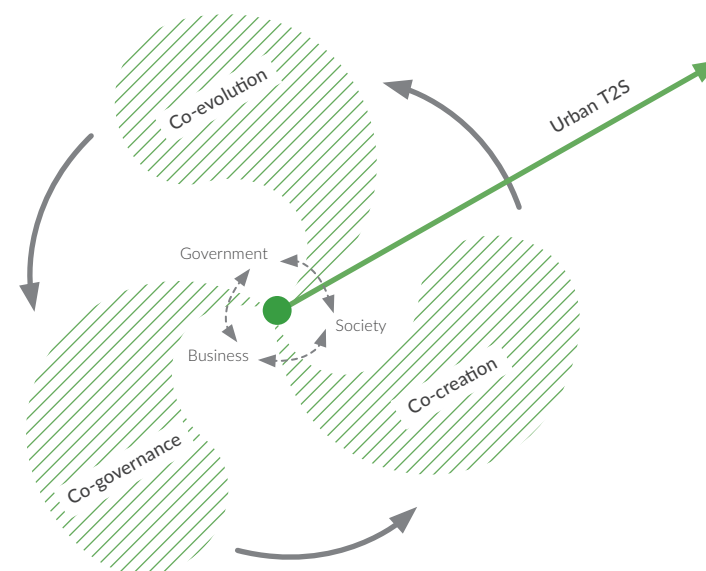


Figure 4: Co-creation, co-evolution and co-governance triple helix

Recommendations

Urban environments are unique, often tightly linked social-ecological systems. Their rapid growth has led to ‘pathologies of progress,’ such as traffic, pollution, and the loss of green space. Transformations of critical urban systems, including energy systems, buildings, mobility and food systems, can make cities sustainable despite growing populations. GREEN-WIN research on disruptive innovations in a variety of urban systems shows the potential for transformations to sustainability, if ‘3 Cos’ partnerships are enabled and develop equitably and responsively in relation to critical social-ecological parameters and feedbacks. Both the successes and the

failures have lessons to teach about how best to identify the right policy mix and enabling environment to support co-creation, co-evolution, and co-governance in the transitions of growing cities toward sustainability.

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MOBIKE: Dock-less and App-based flexible bike-sharing system

Key messages

- Mobike the world-convenient and simple use of dock-less sharing schemes.
- Pro-environmental, healthy and socially inclusive last mile solution.
- Sharing and cycling for the environment and quality of life.

Transportation-based environmental pollution and low quality of life in urban areas

As world's second largest economy China faces multiple challenges. One of the most urgent and striking societal issue is China's passenger transportation, and its related air pollution as well as carbon intensity. In addressing these issues, Mobike was able to establish a bike-sharing scheme very successfully – it was the world's first station-less bike-share service (picking up and returning at any public bicycle parking space), and the company used to produce and maintain all the bikes itself. In this regard Mobike addresses transportation-based issues such as congestion, the last-mile problem and a lack of parking spaces, as well as the experience of cycling.

User-friendly and dock-less bike-sharing service

Mobike is a user-friendly, dock-less, bike-sharing service started in Shanghai and today covering more than 200 cities in 19 countries worldwide (with over 9 million bikes in circulation), which reduces pollution and congestion. It triggers a healthier mode of travel and solves the "last-mile problem". Through using an app, available bikes nearby are identified, unlocked and the payment for the service are processed. The concept is viewed by the users as very responsive and flexible and it helps to reduce fossil-based, short-distance travelling in cities. Mobike as a company used to produce all the bikes themselves in addition to maintaining them (broken bikes are fixed or recycled) and providing the app service. In April 2018 Mobike was acquired by Meituan-Dianping (China's largest provider of on-demand web services). This deal is also intended to strengthen their market position in the rivalry with the Alibaba group (and their bike sharing service Ofo).

An interesting aspect of this initiative is that problems of theft, damage or reckless use of the bikes have been addressed by customers in a self-organized manner based on the traceability of the bikes: A social movement called “Mobike-hunters” has emerged, who find damaged or wrongly parked bikes and park them properly in hunter shields and report them to the company. There are several steps of the process: scouting locations using the Mobike app, exploring the area to find the bikes, collecting photographic evidence, and reporting the infractions. As a result, the company implemented a reward system to encourage these activities. This kind of support is motivated by an appreciation of the concept and provides them with a small financial credit or service-related goodies (e.g. a high-tech protection mask to prevent inhaling polluted air when they ride the bikes). This shows that gamification can be used to increase social capital and sustainable lifestyles.

However, Mobike as a large-scale business shows how such solutions can also cause negative impacts on markets and the environment. While the strong and large-scale market entry of Mobike demonstrates a successful implementation of a bike-sharing scheme, the cooperation with governments was understood as a misleading market signal for great business opportunities. This in turn led to over-investments, -competition and -supply in on-demand bike sharing schemes in a very short period of time. Further effects of this situation have been rather negative relationships with local Chinese governments who either tried to mitigate the flooding of shared bikes by removing them (on a district level) or facing limitations of action in other regions such as in Europe because of the threat of a strong displacement of other market actors (particularly of small-scale bike sharing schemes). On the other hand, the very aggressive first implementation phase (especially in Europe) of Asian companies like Mobike, by flooding cities with sharing bikes, fosters irresponsible user behaviour (bikes being dumped, damaged, stolen or used recklessly) and thus a waste of resources. Nevertheless, Mobike contributes to GREEN-WIN's vision as a business that creates social and environmental value by fostering a decentralised service provision and a low-carbon economy.



Dock-less bike, © Photo: Alvan Nee on Unsplash

Recommendations

Mobike already provides an example of successful out-scaling, as it was spread to 200 cities worldwide within 4 years. Cooperation with local governments and policy makers at an early stage was crucial for the scaling out and up of Mobike in China, but lead also to trade offs. On the other hand such collaboration was missing in other countries where Asian dock-less, bike-sharing schemes do not have a good reputation. Enabling factors were technological innovations (ICTs, Apps and social media), demand for a cheap mobility/travel mode, flexibility, private-public-partnership, appreciation of sharing products & services, and air pollution due to fossil-based mobility.

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Sustainable fly-ash brick production in India: Low-carbon, low-energy, low environmental impact bricks to support local economies

Key messages

- Energy conversion by-products can be profitably transformed into sources of green wealth
- Sustainability innovations in the construction sector create regional green value chains and green job opportunities for poor communities
- Green prosperity for all with a low-carbon economy products is possible

Conventional brick production emits greenhouse gases and harms the environment.

The construction of buildings is responsible for approximately 1/3 of the global greenhouse gas (GHG) emissions. In India, the construction sector contributes 22% of the national GHG emissions, with bricks and cement being the worst culprits. Brick production in India relies on removing topsoil from fertile land at the end of every growing season, thus releasing large amounts of carbon as well as degrading soil quality. Additionally, the country is dealing with a great housing shortage of almost 60 million units for close to 25% of the population that do not have dwellings of their own.



Brick production in India
© Photos: David Tabara

A low-tech solution with multiple benefits

These challenging issues are being addressed in India by an inspiring green business initiative, spearheaded by the social enterprise Development Alternatives. This new approach for brick production uses fly ash, which is a by-product from thermal power plants, instead of top soil. Power plant operators face significant costs for disposal of fly ash (300 million tonnes of fly ash are produced a year in India) and it is also known to cause respiratory problems. Through establishing alternative brick production and sale of bricks with low carbon content, a mutual win-win-situation for both the power plant operators (e.g. saving money usually spent on disposal of their business waste) and the local communities (e.g. less environmental damage) is created. The fly-ash brick requires only simple technologies for production (around 230 million bricks have already been produced by hand), is cheap and overall more resilient than traditional bricks.

Communities are the investors and/or entrepreneurs but they are supported by schemes and subsidies. The technology has been developed by Tara Machines (a social enterprise that is part of a wider NGO group – Development Alternatives). Thus, NGOs are playing an active role in promoting the approach (i.e. lobbying legislators to mandate the use of fly-ash bricks for the construction of government buildings). In general, production creates jobs and thus this makes it an interesting option for increasing job availability in local communities (instead of seasonal work employment by the conventional brick manufacturers) and reducing environmental impacts. This has already been demonstrated in the areas where the technology has been introduced: Each unit creates 2.4 million bricks a year, consuming 3,600 tonnes of fly ash, saving 7,200 tonnes of soil, 1,656 tonnes of CO₂ emissions and 528 tonnes of coal annually. As a result the fly-ash bricks are contributing to achieving the GREEN-WIN vision by establishing a low carbon economy that enables a reduction of poverty and social inequality and aiming towards prosperity for all.

Recommendations

The fly ash brick solution has already been able to scale both out and deep on a regional level and scaling up is beginning. Due to the amount of fly ash available in India's urban areas, the practice of fly-ash brick production has already spread far. Public buildings now have to be built with a prescribed share of fly-ash bricks, which



is the first step into a scaling up of this WWS. The Development Alternatives head office was constructed with fly-ash bricks, serving as a role model for others in the construction of new buildings.

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Invest in coastal adaptation projects that include land reclamation to leverage public budgets

Key messages

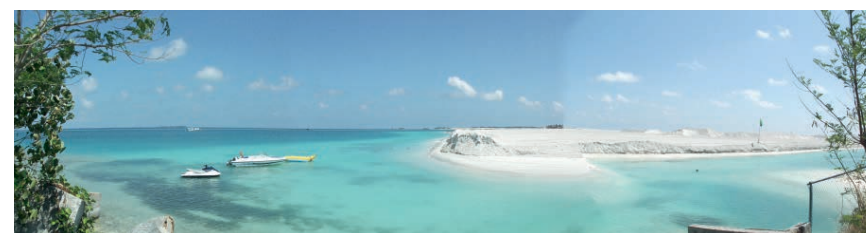
- Land reclamation offers great potential for revenue generation that can be used for coastal adaptation
- The incremental costs of including adaptation in land reclamation projects are only a small share of overall projects costs
- Good governance and transparency of project planning and implementation procedure is required to ensure revenues streams and safeguard that distributional effects do not negatively impact vulnerable people

The Challenge

Coastal adaptation investment presents clear opportunities for social welfare improvements by reducing flood risk under certain conditions, like densely populated areas with high economic activity. Yet these opportunities are often not realised due to the high upfront costs and scarce public resources. Public financing constraints can be overcome by investing in projects integrating coastal adaptation and land reclamation or urban land redevelopment because the public actor can generate revenues through selling or leasing the newly available land.

An example – The Maldives

In the Maldives, land is scarce, and the population is both growing and rapidly urbanising, increasing exposure to flood risk due to sea-level rise in the capital of Male. Building the new island Hulhumale, raised 2m above sea-level is a win-win, creating new land for the urban population at lower flood risk exposure and combined with high value real estate development, which can generate revenues to help pay for the initial required investments. Moreover, the incremental adaptation costs of the project, i.e. raising the land, are a very small share of the overall project costs. This is generally the case with land reclamation, as the costs of protecting the land in this way to account for increasing flood risk from sea-level rise are low, compared to the costs of infrastructure needed for real estate development.



Island raising in the Maldives, © Photos: Daniel Lincke

Watch out for some essential aspects to make sure the project is a success and socially and environmentally sustainable!

First, special attention should be given to the environmental impact of these projects. For instance, dredging sites and techniques must be carefully designed and implemented in order to minimise impacts on coastal ecosystems. Moreover, impacts of sediment flow, and thus coastal risks, on areas adjacent to the project should also be considered.

Second, special attention should be paid to distributional issues. For instance, social housing should be a significant part of the project in order to ensure inclusiveness.

Third, special attention should be paid to good governance in such complex projects, because failed individual developments, like bankruptcy by individual contractors, can negatively influence the entire project. A good and transparent tendering process can ensure risk management in individual projects to make sure that the overall project realises the projected outcomes and revenues.

If implemented properly, land reclamation can generate enormous revenues, and make massive progress towards achieving coastal adaptation goals of reducing flood risk.

Recommendations

Land reclamation is occurring in many places around the world, and the incremental costs of building adaptation into such projects are often small. Therefore, including revenue generation works best in the case where a demand for land is present or can be generated. An open and transparent allocation process for the land will facilitate fair pricing to future owners or developers in order to grant access to the reclaimed land to all stakeholders. Leveraging of public budgets works best when stakeholders gaining high profits are also charged high fees, in order to have the public budget to gain the highest revenue. This is applied more easily in a high value urban setting, or areas with high demand for commercial properties with inadequate land available to realise these.

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3

RURAL NARRATIVES

Not one-fits-all solutions! But multiple and diverse solutions to fit the needs of all

Key messages

- There is no single, one-fits-all solution to eradicate energy poverty and ensure climate resilience at community and household levels. A whole array of discrete and locally-situated solutions that meet different needs, combined and inspired by diverse principles and experiences are required
- Win-win solutions to eradicate energy poverty and ensure climate resilience derive from collaborative capacities which emerge out of collaborative multi-level networks of local, national and transnational agents
- Many of the current trade-offs and barriers to fast decarbonisation, and between mitigation and adaptation, could be overcome by aligning climate policies and incentives towards the achievement of sustainable development goals

The Challenge

Ensuring universal access to affordable, reliable and modern energy services for all by 2030 - (UN SDG 7.1) - would require bringing energy to 1.1 billion people currently without electricity and nearly 2.8 billion people without access to clean cooking facilities. This could compromise the attainment of the Paris climate agreement unless sustainable strategies and green technologies are rapidly implemented. The fast growth of renewable energies and green innovations both in poor urban and rural contexts also provides a new suite of opportunities for transnational cooperation in the form of 'win-win alliances' for sustainable climate action. SMEs, especially those with hybrid organisational arrangements (both for-profit and not-for-profit), are likely to be crucial in triggering community-tailored transformations for energy poverty eradication and climate resilience, connecting with transnational networks and maintaining such win-win cooperation in the long term.



Examples from India, Indonesia and South Africa

The GREEN-WIN project examined the social dynamics, processes and conditions required for the implementation of solutions and strategies to eradicate energy poverty and enhance local climate resilience capacities in various cases in India, Indonesia and South Africa. In India, a selection of processes in capacity building for the implementation of solutions supported by the social enterprise the Society for Development Alternatives - Society for Technology and Action for Rural Advancement (DA-TARA) and its affiliates was carried out. DA-TARA promotes Public-Private-People collaborations to grow local capacities and create the conditions for greater economic inclusion. Their engagement with local communities and local entrepreneurs aims for development solutions, which adhere to the triple bottom line principles of "people-planet-profit", have shown positive impacts of innovations derived, among others, from decentralised renewable energy solutions and green building materials.

In South Africa, first we examined the implementation of renewable energy micro-grids by the social enterprise Zonke Energy in the City of Cape Town as a case of private provision of clean affordable energy for informal urban settlements, where



Solar panels in Bihar, India, © Photo: David Tabara

traditional bulk electrical infrastructure is not available, practical or financially feasible. Second, we looked at the social-purpose start-up, the Sun Exchange, which connects individuals to local investment opportunities for small-scale (all under 1 megawatt) renewable energy infrastructure. The Sun Exchange uses the Blockchain to securely enable transactions in fiat or crypto-currency, and store and manage asset information in a public, transparent and distributed ledger. Third, the 'Genius of Space' was examined as a 'green' infrastructure solution focused on climate-resilient and development-oriented water and solid waste management in informal settlements. The Genius of Space is a government-supported project which had already been developed at community level using an Appreciative Inquiry approach. It also applies participatory approaches to create context-specific, incremental solutions inspired by biomimicry principles to meet local needs in an adaptive way, as defined by community beneficiaries. A fourth examined case, the Kruismentenvlei organic farm applies circular economy principles to develop a suite of multiple integrated solutions which contribute to both climate change mitigation and adaptation while delivering various benefits in terms of sustainable development and local wellbeing, including poverty reduction by enhancing local young employability.

In Indonesia, a research-action case study approach was used to explore the potential of linking the production of sustainable coffee production and biogas by creating an ad-hoc research-action company (su-re.co; Sustainability and Resilience. co) jointly with Udayana University. This initiative aimed at creating a market for green products and involves several local farming communities which directly benefit from the creation of green job opportunities and from the project results.

These solutions and strategies address the vision elements of contributing to several Sustainable Development Goals and most importantly, the SDG1 ('End poverty in all its forms everywhere by 2030'). They also support the vision components of enhancing universal political participation, shared responsibility, cooperation, collaboration and strong local communities.

Recommendations

- Focus on empowering agents and enable them 'to be the solution' with particular focus on women and marginalised groups.



- Do not expect 'perfect solutions' but rather focus on building local capacities for the emergence of situated solutions.
- Support innovative financial schemes and incentives at community and household levels.
- Promote hybrid forms of business models which take more responsible forms of ownership, risk- and profit-sharing.
- Support co-designed solutions and spaces for experimentation at the local level while considering fast-changing global market and technological conditions.
- Identify the most conducive regulatory and governance environments at local level that allow the distributed penetration of green energies and innovations.
- Support applied research on solutions which promote Restorative Economy strategies aimed at restoring the economic, social and ecological capitals upon which sustainability depends and not only solutions that aim at doing 'less harm'.
- Align energy poverty alleviation and climate resilience strategies to the achievement of Sustainable Development Goals.

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Tanzania Dome: Post-harvest storage and community mobility service for rural Tanzania

Key messages

- Connecting people by a more efficient crop storage and improved access to infrastructure and markets
- The focus on side issues (treatment, availability and access) can improve the entire concept
- Often small changes can make a big difference

Reducing crop losses and improving market access

This WWS addresses the challenge of both crop losses (especially of produce that perishes quickly) and a lack of access to an adequate infrastructure and thus to communal markets in Tanzania. Many products in developing countries are very perishable and thus innovation towards storage techniques and practices are very important. On the other hand, improved access to infrastructure and thus to markets can also trigger higher sale-rates of crops and in turn reduce the rate of post-harvest losses. Often these issues can be dealt with by small interventions.

Storage dome and off-road vehicles

In Tanzania, a storage dome that reduces the quantity and quality losses of crops due to weather and pests etc. is being introduced together with community-owned and solar-powered electric vehicles that can be driven off-road and without a driver's license. The quality of some crops deteriorates very quickly and this constrains market power and impairs livelihoods in rural Tanzania. The concept challenges the lack of a food-processing and provision infrastructure. This can improve not only post-harvest storage and access to markets, but also food supply and local income. The vehicles are quads for communal usage. Their use does not require a driver's license, which most of the people cannot afford and thus do not have. Furthermore, since the road conditions are very poor, vehicles that can be driven off-road are advantageous. The dome addresses the problem of a lack of infrastructure in Tanzania, which limits both

post-harvest storage and the ability to use the full potential of the harvest volume (i.e. using almost the entire harvest of crops). With this combined solution of dome and vehicles, crops can be transported from farm to storage dome and from the dome to the market.

This improves not only post-harvest storage and access to markets, but could lead to a long-term shift from subsistence to commercial farming (agricultural marketing cooperatives). Through introducing storage domes together with community-owned and solar-powered electric vehicles that are adapted to the particular regional topography and geographic realities as well as social peculiarities (i.e. driver's license - accessibility), the solution strengthens the wealth and resilience of local communities and increases the autonomy of the people. In terms of the GREEN-WIN vision, this WWS contributes to achieving an improved decentralised production of goods and services that reduces poverty and social inequality, and thus to the prosperity of all in Tanzania.

Food losses and waste

The need for sustainable solutions

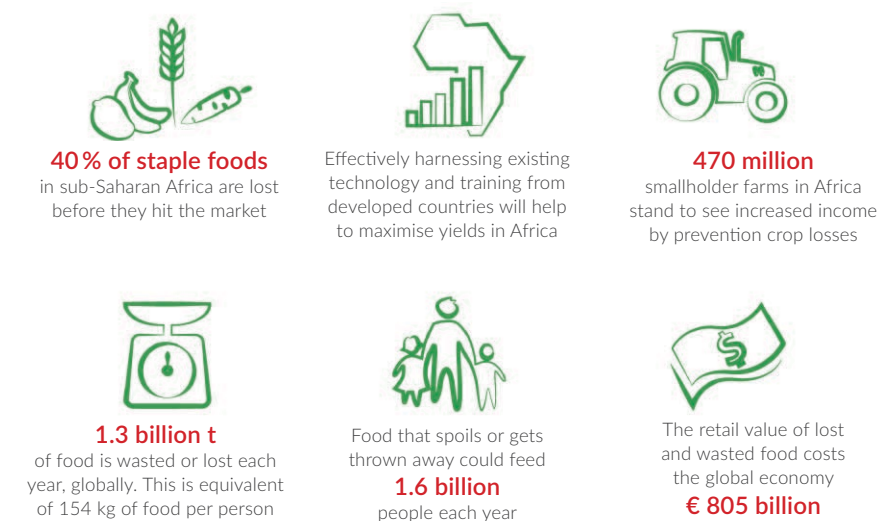


Figure 5: Food losses and waste. Source: Rockefeller Foundation, 2016 & PYXERA Global, 2017



Recommendations

The Tanzania storage dome is a concept (i.e. not applied yet) that has a high potential for scaling deep, in particular because collaboration with other communities can foster social learning and capital. Communal sharing of a storage dome can improve resilience towards crop failures, and a set of new practices might change infrastructure and landscape very easily. This solution might even involve a holistic learning cycle, as it can easily be taken up by other communities (scaling out) and lead to the emergence of new structures and cultural practices (scaling deep), where the existing regime might support those ideas and install them region/countrywide (scaling up).

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ILLOVO Sugar: Developing climate resilience of smallholder sugar cane farms

Key messages

- Public-private partnerships can be used to improve the climate resilience of sugar cane outgrowers including a holistic risk management
- Cross-border climate assessment tools can reduce vulnerability and strengthen regional resilience
- Shared risks can be translated to shared benefits

Physical climate change risks (flooding)

African small sugar cane outgrowers are facing manifold challenges such as physical climate risks (flooding, drought, pests & diseases), but struggle also with social and business issues such as poor governance and management capacity or high inputs of costs due to fluctuating sugar prices (currency fluctuations, inflation etc). In general, sugar estates address climate risks at estate level, rather than along the supply chain. Considering climate risks all along the supply chain enables climate resilience to be built along the supply chain, benefiting outgrowers and smallholder farmers and in some case, the broader communities surrounding the estates.

A trans-boundary tool to assess climate change vulnerability of local communities

In southern Africa a partnership between the Climate Resilience Infrastructure Development Facility (CRIDF) and Illovo Sugar (African's largest sugar producer) is improving the climate resilience of sugar cane growers. Illovo has a major influence on smallholder farming and works in many communities vulnerable to climate change, where there are high levels of poverty with inadequate access to services such as water or electricity. With the principle of "shared risks are shared benefits" a trans-boundary tool to assess climate vulnerability and responses was developed. The aim is to identify potential risks (e.g. droughts, floods, financial, human capacities, or cultural challenges) and support identification of appropriate response strategies.



In applying this approach, poor communities can identify ways in which they could become more resilient, benefiting from the supply chain approach to addressing climate resilience. The tool has been used with several smallholder associations to evaluate outgrowers' risks according to the external climate-related risks and their internal adaptive capacity. Then risks are categorised to temperature, rainfall, water supply, flooding and other factors. Through sharing the tool with outgrowers and Illovo officers, the tool has gone through a number of iterations. In doing so the tool already spread to six African countries (Malawi, Mozambique, Swaziland, South Africa, Tanzania, Zambia), and collaboration with projects and initiatives in further regions is being pursued. This WWS contributes to the GREEN-WIN vision as a business that creates social and environmental value by supporting developments that reduce poverty and social inequality.



Sugar cane plant field, © Photo: mark yang

Recommendations

In the short-term this WWS has a greater potential to scale out (e.g. greater use of the tool across various Illovo sites and by others in the sugar industry) and up (e.g. the use of the tool could be adopted by policy to foster regional and communal resilience). Lessons learnt from the Illovo sugar cane initiative could be transformed to the entire sugar industry through understanding the risks and vulnerabilities faced by outgrowers in the sugar industry. Similarly, the understanding gained could be used to see how to apply and adapt these models and tools to the private sector, in order to identify similar risks and opportunities in other agro-industry supply chains. This approach could be applied to the public sector as well by identifying systems through which private sector interest can be harnessed for public good and thereafter inform the policy and regulatory environment. The crucial issue will be, however, scaling deep – only when the solution is embedded in the regional cultures and harmonised within the local social relationships can this be achieved.

Sources of further information

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SU-RE.CO: Use of biogas to roast coffee in Indonesia

Key messages

- Growing coffee, generating and using biogas for roasting it contributes to environmental protection and local prosperity
- Energy poverty and poor livelihoods are reduced by an increased agricultural diversity enabling local incomes
- Creating a demand for renewable energy by building a sustainable business model

Vulnerability to climate change in Bali

The challenge addressed by this WWS is the risk of a greater vulnerability to climate change impacts in the Balinese region of Jembrana (an area of Western Bali) as a result of the focus on rice production. This province produces about 30% of the nation's rice and almost 63% of the regional farmers are working in the rice paddies. Recently, this area has become more vulnerable to climate change, particularly because of the reliance on rice farming. In addition, the region suffers from energy poverty, which could be reduced by processing natural-based renewable sources (e.g. biogas).

Introducing coffee roasted using biogas

In order to address these challenges and to increase the local diversity of valuable commodities, an additional agricultural product – coffee – was introduced, which is more resilient to climate change impacts (e.g. drought) and considerably more valuable in the market. Furthermore, through the combination of coffee growing and biogas generation (using the waste of the coffee production), the su-re.co coffee case is an excellent example of a WWS. Biogas is used to roast coffee and simultaneously it increases the farm productivity through producing fertilizer. It also provides a sustainable income for locals, while also contributing to avoiding deforestation and indoor pollution. In a country where the demand for coffee is increasing and the

climate is good for producing biogas, this low-tech solution can increase the value-added on the farm. Indonesia experienced 7% annual growth of coffee consumption in 2016 and Indonesian coffee sales rose in the global market by 12% from 2012 to 2017. Coffee roasted using biogas provides a sustainable income for farmers in an environmentally friendly manner, and it could stimulate more use of biogas for other agricultural value chains – within the last 2 years, roughly 500 kg of coffee from farmers who adopt the climate smart agriculture practices has been sold.

This particular WWS operates within a local safe-operating space (i.e. within the environmental boundaries and meeting social norms) allowing for only small but high-quality crops. This may help to ensure local employment, economic and environmental prosperity as well as improve resilience to external influences. Su-re.co is developing and committed to install a number of bio-digesters to stimulate a universal shift towards climate-smart agriculture (CSA), while creating the circulation of locally produced and eco-friendly products. It considerably reduces local pollution from use of firewood and LPG. Furthermore, it presents the opportunity to put waste products (manure, coffee cherries, and coffee husks) to beneficial use, which could increase the demand for developing bioenergy from a local to international level. As a business that creates social and environmental value, su-re.co contributes well to achieving the GREEN-WIN vision.



Recommendations

Scaling out or up at this stage could be very risky as, for example, su-re.co might not be resilient enough to deal with uncertainties at this early stage of development. Growing too fast as a business could result in a business breakdown, or cause environmental harm due to increased agricultural production. They have a small but very well embedded social network of producers, consumers and retailers, which might not work that well on a larger scale. Factors enabling scaling deep are the well-balanced embedding of these agricultural practices in the local culture and social settings. Due to the collaboration among different agents within the production and value chain in this WWS, social learning is the key not only to improve local relationships but also to learn from mutual (good and bad) experiences.

Sources of further information

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Image: Coffee beans from Indonesia, © Photo: su-re.co

Aral Sea Biogas: Energy from and for farms in the Aral Sea Region

Key messages

- Combining smart thinking and technological feasibilities
- Transforming organic waste into biogas fosters regional prosperity
- Reviving weak and harmed regions by applying biogas practices

Human-caused dying region and environment

The Aral Sea is a striking example of a human-caused natural catastrophe that has had very strong impacts on the entire area. As a result the region suffers from energy poverty, climate change vulnerability and inefficiency in resource use. While untreated organic waste leads to carbon emissions, dozens of former biogas reactors are standing still. The energy provision is very one-sided, but the dependence on energy at the household-level is very high, while at the same time natural gas resources are dwindling. In general, there is an acute need for diversification of energy generation but the public awareness about the potential of technical solutions or the importance of organic fertiliser is very low.

Biogas facilities to revive the Aral Sea Basin

In the Aral Sea basin, agriculture is the major economic activity and there is a need for household access to energy in rural areas and for energy diversification. In general, biogas concepts can be applied globally and are thus very appropriate for the Aral Sea Basin as well. Biogas facilities can use otherwise untreated organic wastes and thus contribute to reducing carbon emissions by replacing the use of natural gas. The by-product of bio-fertilizer can be used in agriculture and serve as a supplement to or replacement for artificial fertilisers.

Based on evaluations of the local situation and local technology providers (e.g. data-mining, and field-trips to livestock farmers), technically feasible and financially attractive biogas systems are being developed and installed. These systems need to



be practical (as the manure is mixed with stones and sand), flexible (heterogeneity of organic waste), well insulated (given the extreme continental climate zone) but also to be simple and cheap (limited knowledge and finances). However, there are still many challenging issues to be solved or bottlenecks to be tackled: sedimentation & clogging, temperature fluctuations (poor insulation), very short retention periods and air-compressed loading of the biomass, as well as the poor circulation (mixing) in the digester.

When these difficulties are overcome, this WWS could increase farm productivity and value-creation of farms in the Aral Sea region and could be implemented widely in agricultural areas of Uzbekistan. Furthermore, there are manifold benefits for the government (e.g., saving energy resources, decreasing unemployment rate), the society (e.g., food security, improving livelihoods and the health of the society, recycling of organic wastes, improved life expectancy) and the environment (e.g., decreasing carbon emissions, improving soil fertility, reducing water consumption).



Biogas tank in Aral Sea Region, © Photo: Olimjon Saidmamatov

Accordingly, this WWS contributes to GREEN-WIN's vision by establishing a low-carbon economy that reduces poverty and social inequality, and thus strengthen prosperity for all in the region.

Recommendations

While scaling out for this case is limited to the particular regional setting, cultural practices and topography, scaling up could be achieved by governmental actions to establish this practice as the 'normal' way of agriculture in the Aral Sea Basin. However, this would require information provision, awareness-raising on the multi-level benefits, capacity building within local communities in adopting and using biogas technologies, as well as subsidies for the installation of the essential elements. If this happens, scaling deep might be achieved as well, as this practice could serve as a regionally unique speciality and thus contribute to the local identity of the communities.

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4

ENERGY NARRATIVES

Simon – energy: Plug and play photovoltaic modules for everyone!

Key messages

- Using plug and play solar modules to become a prosumer
- Easy solution for renters in urban areas to access small-scale renewables
- Clean, affordable and accessible sustainable energy on a household level

The need for easy solar solutions

Driven by high or volatile prices for fossil fuels, the main motivation behind Simon-energy was to provide a very simple, easily accessible and affordable solution to provide renewable energy especially for households in rented flats (ideally with balcony or terraces) in urban areas and cities. In general, people want access to solar power, but there are limited opportunities for such access. Through utilising an affordable and easily installable solar solution, people can experience first-hand how they would benefit from solar power generation.

“Plug and Play” photovoltaic modules

Simon-energy was started in Austria by two passionate entrepreneurs and energy experts in order to enable a fair and affordable opportunity to install renewable energy generation, using “plug and play” photovoltaic modules, installed, for example, on balconies and simply plugged in to power the home or appliances. Usually, it is difficult to access solar power as a property renter in urban areas. However, this solution has the advantage that it is easy to install; no special skills are required for its use and the installation is not fixed permanently and can be moved elsewhere. Moreover, the costs are low, so this solution does not generally rely on financial support (although it is possible to obtain subsidies). Over time, the use of the modules generates economic benefits .



However, the main achievement of Simon-energy was that they managed to legalise this form of household energy generation in Austria and also started a related discussion in Germany. In the beginning, this type of self-generated solar power was forbidden by the main national energy network providers, but since July 1st 2016 such systems and products became legal. Based on this experience, the founders of Simon-energy also engaged in another start-up – SolCube – dealing with solar power grids and cubes as a supplement to diesel-powered generators for houses without any access to electricity.

Through their application, Simon-energy modules address issues such as: awareness about the opportunities of renewable energy in general; the access to free and clean energy; better livelihoods; economic benefits; more energy independence; and mitigation of climate change by a reduced demand for fossil-fuel-based energy. In terms of the GREEN-WIN vision, Simon-energy is a business that creates social and



Plug-and-play solar energy units © Photo: Oekostrom AG

environmental value and contributes to the achievement of a low carbon economy based on a decentralised production of goods and services.

Recommendations

Plug and Play photovoltaic modules are very appropriate for all types of scaling. Since the modules are affordable, easy to use and can be installed almost anywhere, the solution can be applied easily in any urban area (scaling out). In Austria (but probably also soon in Germany) this new practice of household-based urban energy generation already led to a change of regulations, now allowing the application of these modules for rented flats (scaling up). Finally, as soon as a critical mass of people adopts this form of energy use and becomes more aware of the economic benefits, common misconceptions about renewables, for example that solar power is very expensive and less efficient for households, might change and lead to new practices of energy generation and provision (scaling deep).

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Solar – route: The world's first free solar-charging route for electric vehicles in Austria

Key messages

- All people can drive for free with the power of the sun
- Salzburg became the world's market leader in free solar mobility
- Think “environment” and strengthen regional resilience

Responding to climate change and oil prices in a regional context

This WWS was stimulated by three factors: the impacts of climate change became visible in parts of the region (e.g., rapid melting of glaciers around Zell am See); economic pressure on households and local businesses increased as a result of fluctuating and rising oil prices leading to a loss of local/regional wealth; and the frustration of waiting for global interventions (international climate regulations and measures). Hence, a very passionate consultant realised a concept of solar power installations that provides profits for local business (cheaper and clean energy supply) and benefits for communities (free solar charging route and regional prosperity).

The solar-charging route

In Austria a consultant company – GFB Consultancy – developed the world's first free solar-charging route. What started in 2012 with a vision of developing and implementing a free solar-charging route in Salzburg (Federal district of Austria), is now reality. The principle of the WWS is that a concept for implementing and operating a solar power installation is sold to SMEs and larger businesses in the region. Through adopting this 'green business concept' the clients also agree to install a solar-charging station for e-mobility vehicles and, thus, to build a network of energy-charging station providers. Since 2012 the network grew to a route distance of 630 km, with 34 solar-charging stations and 100 plugs. The network covers an area from southern Germany to northern Italy, and already includes 31 institutions, organisations and businesses in Austria alone. Because of this success, the initiative has been honoured, for example, with a nomination for the Energy Globe Award 2016 and the Austrian Climate Protection Prize in 2016.

In addition to this 'green business solution' the entrepreneur also triggers research and progress in energy storage technologies (battery hubs for households and SMEs) to become more efficient in solar energy usage. Furthermore, the consultant company also developed a series of e-mobility vehicles (scooters and cars) starting with the conversion of fossil-fuel-based Smart vehicles into electric vehicles. However, the latest development has been the production of e-scooters and their own e-mobility car, which are manufactured by the consultancy in cooperation with local businesses and using about 80% domestic resources. Indirectly, this very passionate engagement leads to a very significant local and regional value-chain and employment, but also an impressive innovation and technological research potential.



Electric vehicle charging station in Austria, © Photo: gfb-greensolutions



With respect to the GREEN-WIN vision the solar-route business creates social and environmental value by establishing a low carbon economy based on decentralised production and consumption of goods and services.

Recommendations

This WWS was initiated by a very passionate entrepreneur and has been successfully scaled out through the expansion of the solar route. Enabling factors were the economic success of the concept and the capacity building achieved by the network. However, this case is also in the transition to be scaled up and deep simultaneously. Scaling up is supported by national and international awards for the solution. Scaling deep might happen through the intensification of relationships between regional collaborators in manufacturing and providing self-produced, e-mobility vehicles. Through all of these activities the participants contribute to a regional identity and they even start to change the local landscape accordingly.

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5

GLOBAL DIALOGUE PROCESS NARRATIVES

Building a win-win alliance

Key Messages

- Building a community of experts to inspire each other and many others requires careful process design
- The GREEN-WIN project successfully designed and implemented a Global Dialogue that has created powerful narratives on win-win solutions, as well as a vision for the world and economy that we want and innovative ideas on how to achieve it

The Challenge

To meet the goal of keeping the global rise of temperature to less than 2°C above pre-industrial values, to initiate adaptation to climate changes already taking place and currently accelerating, and to achieve the Sustainable Development Goals by the agreed date of 2030, urgent and far-reaching action is required. However, responses have often been slow and shallow, because of a fear that fast and deep responses will be costly in the short term. How can we find the “win-win solutions” that reconcile climate and sustainable development goals while also satisfying economic goals in the near future? How do these win-win solutions work? What constrains their wider implementation and what would it take to spread them further?

A Global Dialogue on Win-Win Solutions

To answer the above questions, the GREEN-WIN project organized a Global Dialogue. This consisted of two workshops and a conference that were carefully designed to allow a constructive and appreciative discussion.

The first step was to decide who to invite to the Global Dialogue. We needed participants from other regions, not just Europe. Our invitees thus included people from China, Japan, Indonesia, Brazil, Mexico, Canada, South Africa and Uzbekistan. We wanted to learn about win-win solutions in developed and developing countries, in rural and urban areas, and in different sectors (e.g. energy, water, agriculture, mobility). Since finance is a major concern when discussing implementation of

solutions to global challenges, we also wanted participants from financial institutions. Furthermore, we recognized the need to invite entrepreneurs, decision-makers, academics and “on the ground” actors from civil society. On the basis of a long list of invitees, we managed to get a good balance over all of these categories. Many of the participants attended all three events.



Green-Win dialogue workshop in Vienna
© Photos: Jill Jaeger

The second step was to design the dialogue process. This involved not only deciding what topics would be covered at the meetings but how the discussions would be organized so that the participants all had a good chance to contribute and also learn from each other. While we had some more formal lectures to provide input, in particular at the final conference, our preference was for working in smaller groups in a variety of participatory formats. For example, in the first workshop the process of developing a vision of the “world and economy that we want” started with 8 small groups. Then 4 pairs of groups shared their visions and consolidated them. This was then repeated with 2 groups and finally a plenary session consolidated and discussed the results. In the final conference we used the format of a “Market Place” to allow the participants to present and discuss win-win solutions. All of these participatory approaches have to be planned carefully in advance. Who hosts the session? What methods will be used? What questions will be tackled? How will the results of discussions be captured? What materials (e.g. flip-charts, post-its, audio-recorders, laptops and screens) will be needed? Do we need to provide a template to participants for their presentations?

In the first meeting in 2016, we discussed the challenges of reconciling climate, sustainable development and economic goals. We developed a vision of the



economy that we want for the world that we want. We then harvested a set of win-win solutions that could contribute to achieving the vision. The second meeting in 2017 focused on a detailed discussion of win-win solutions: how they work and what enables them. The final conference in March 2018 introduced narratives about win-win solutions and discussed the issue of finance in particular. At the end we all recognized that a well-designed dialogue process using participatory approaches had created an international alliance that brought diverse perspectives together in a spirit of constructive and respectful dialogue to find solutions to an urgent challenge that the world is facing.

Reflections

The vision that was co-created in the GREEN-WIN Global Dialogue reflects a conviction held by many researchers that a radical transformation of the economy is required, if solutions to global challenges like climate change are to be found. Through the Global Dialogue we have found concrete examples of building blocks for that transformation. At the same time, an alliance of scholars, experts and practitioners has grown. They have learned from each other and discussed the potential of different solutions and the challenges ahead. The Dialogue itself becomes part of our vision of a good life for all in the future – a world based on the principles of cooperation and co-creation instead of competition, quality instead of quantity, appreciation in the way we treat humans and other living beings, fairness and equity.

Sources of further information

More information is available in Deliverables from the GREEN-WIN Project and reports of the meetings on the GREEN-Win website: www.green-win-project.eu

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The world and economy that we want

Key Messages

- A vision of the future that we want serves as an overall goal and is of fundamental importance if we want to overcome critical challenges such as climate change, global inequality and conflicts
- Shared visions can empower decisions and open our minds to unexpected opportunities, but also clearly demonstrate the need for big changes in society, the economy and the institutions of the world today
- Our vision is based on the principles of cooperation and co-creation instead of competition, quality instead of quantity, appreciation in the way we treat humans and other living beings, fairness and equity to support a good life for all

The Challenge

The first Global Dialogue of the GREEN-WIN project in April 2016 developed a vision of 'which kind of economy we want for the kind of world we want'. The goal of that vision was to establish the basis for transformative thinking within the project and to help map out concrete examples of win-win solutions to achieve the world that we want. While this vision may seem utopic, it provided a concrete end-point for further discussions in the Dialogue process. Developing the vision was designed as a social learning process, in which participants shared knowledge and perspectives.

The Vision

Everybody has access to free, good education and healthcare systems. Education systems teach respect for and understanding of "otherness" and support a world in which all people understand social and environmental interdependencies. The Sustainable Development Goals have been achieved, social inequality has been reduced and the gap between rich and poor has been narrowed. With a fair distribution of wealth and opportunity (health, education, work, access to green technologies), there is prosperity for all. "Less is more" and sustainability principles



guide lifestyle choices. With a culture of empathy, collaboration and cooperation, people have embraced diversity. Everyone is aware of the environmental implications of human actions and the value of diversity for local and global resilience. There is an abundance of creativity, services, arts and crafts. With strong climate and environmental implementation capacities and resolutions, people now enjoy a biologically diverse, beautiful and clean landscape and climate change is no longer a serious threat. Technological innovation has contributed to sustainable development, for example by eliminating waste and establishing a circular economy.

With an emphasis on universal political participation, shared responsibility, cooperation and collaboration, strong local communities are empowered to deal with global challenges. Economic, social and environmental goals have been harmonised and integrated into all levels of policy-making. All political and business decision making considers the long term. There is strong civic accountability of elites and corporations and no corruption. The role of military systems has switched towards civil service, environmental protection and natural catastrophe management. In an inclusive and connected world, there is a focus on the community, not only on individuals. Dialogue is essential in the sharing, collaborative and needs-focussed economy. Knowledge is exchanged to support networks focussing on solutions to problems. Transparency is an essential characteristic in this open knowledge society.

The well-being of all drives economic activity. The sharing, service-based and carbon-free economy is inclusive and respects all citizens. The economy is based on a sustainable use of resources with no perverse subsidies for food and energy systems. Businesses create social and environmental value and capital. Corporate Social Responsibility is the core of business strategies. Alternative business models (e.g. cooperative & new finance systems) are supported by responsible banking, finance and investment. The number of local enterprises has increased, leading to distributed /decentralised production of goods and services and a regionalisation of the economy. With transparency and accountability for all parts of the value chain, the links between consumption and production are clear. Prices for products now reflect their true social, environmental and financial costs. Consumers are thus taking responsibility for the impacts of what they consume.

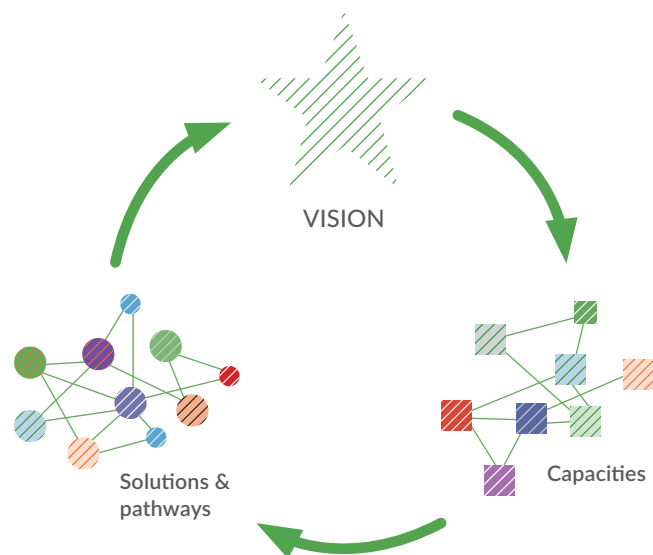


Figure 6: A vision is a main driver of transformations. It supports the identification and coordination of the capacities needed to implement systems of transformative solutions and thus move towards the vision. Source: Tàbara et al. (2018)

Recommendations

The vision developed during the Global Dialogue of the GREEN-WIN demonstrates that issues such as global/local cooperation, responsibility and equity are at the core of the green economy that we want to have. These issues need to be addressed in the clusters of win-win solutions that bring us closer to our vision.

Today the economy is based on completely untested assumptions about human behaviour. The vision emphasizes that these must be replaced by a sound understanding of collective behaviours, needs and sustainability ideals. A new framework is needed for a green, inclusive economy.

Achieving the vision will require building capacities (Figure 5). In particular, there is a need for building human and social capital to provide the knowledge, skills and collaborative networks that can find and implement a wide range of win-win solutions.

Sources of further information

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Final remarks

The narratives presented in this booklet show the heterogeneity and diversity of actions from around the world identified within the GREEN-WIN project. Some solutions discussed in the narratives have a long-term focus, while others have already demonstrated short-term successes. Some unfold on small scales and local levels only, while others show national or even global impacts. A key feature of these diverse narratives is that green business models exist that provide not only economic, environmental, and often also social, wins along a common value production-consumption chain, but also are viable, even in long-term. Moreover, viability depends on the crucial and often essential role of knowledge spill-overs through experience exchange and capacity building that occur through the networks that support the deployment and access to sustainable technologies.

We wish to emphasise that the narratives in this booklet have been presented and developed together with stakeholders over three years of the project in lively and constructive discussions throughout the global stakeholder dialogue. The stakeholders involved in these interactions have also formed what can be seen as the beginnings of 'win-win climate alliances'. This is important because, as discussed in the Introduction to this booklet, narratives are sense-making devices that need to be told and re-told in order to become embedded in social contexts and influence human action. The narratives presented here thus represent a starting point, which we hope will be taken up and renewed through and also beyond the networks, i.e. win-win alliances, initiated within this project.

Finally, we hope that readers of this booklet find these narratives meaningful for their own contexts, and encourage them to share feedback and experiences with the editors and authors of this booklet. In that way, these narratives can be updated, (re)told and continue to be made relevant for enabling sustainable climate action.

Image: Transformations in urban systems – green buildings in Fukuoka, Japan, © Photo: yyama



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