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Approaches, objectives and tools for sustainable development governance

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Sustainability transitions at the international, European and national level:

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by

Umberto Pisano, Katrin Lepuschitz & Gerald Berger

This ESDN Quarterly Report (QR) provides an overview of the concept sustainability transitions and transformative environmental and sustainability policies and thus deepens the work that started by preparing the 11th ESND Workshop (Berlin, June 25-26, 2014) on the same topic. In general, sustainability transitions take place in the context of ongoing and very lively debates about future aspects of sustainable development on the international level (e.g. Rio+20 follow-up, post-2015 debate and SDGs) and important developments in Europe and on the national level. For example, EU level policy strategies formulate long-term visions for society and include objective for economic, societal and environmental innovations. In addition, several European countries (e.g. Belgium, Finland, France) work towards societal commitments for sustainable development, transformative issues, and long-term perspectives up to 2050 which signal important new angles for sustainable development.

In the first chapter of this QR, we provide an overview of the concept of transition/transformation in the context of environmental and sustainability policies. The second chapter looks at sustainability transition activities and initiative on the international and national level, with the aim to better understand the motivation and reasons for initiating a sustainability transition process; the development process; the selection of objectives for achieving transition; inter-ministerial cooperation and stakeholder involvement; and evaluation and monitoring schemes for policy learning. The third chapter includes results from the discussions with delegates at the 11th ESDN Workshop. Finally, the concluding chapter offers several reflections on sustainability transitions.

Contents

1 The concept of sustainability transitions

In this chapter of the Quarterly Report, we provide an overview of the concept of 'sustainability transitions'. Firstly, we portray the main discussions and drivers behind the necessity of transformative policies in the realm of sustainability transitions. Secondly, we define the concept of transitions and then we look into the main features and barriers of sustainability transitions. In the fourth section, we describe one of the main frameworks used in transition literature: the Multi-Level Perspective (MLP). We also focus on the so-called 'Transition Management Approach', which offers a practical operationalization and a way to facilitate transition governance. Lastly, we look into governance of transitions in the context of the triad politics-polity-policy.

1.1 Introducing the current discussions and needs for sustainability transitions

In many ways, we currently face many challenges that affect us in several interlinked domains through a number of economic, social and environmental crises. For instance, science tells us that we are continuing to ignite climate change or that we need to put our development on a more sustainable path if we want to maintain those services that our Earth provides us for free.

At the UNCSD Conference in Rio in 2012, international negotiations showed the kind of '*future we want*' in one scenario of sustainable development. Today, the debate is still on-going and very lively about the future aspects of sustainable development on the international, European and national levels: on the international level, there are intensive discussions and consultations on the Rio+20 follow-up, on a new post-2015 agenda, and on a set of sustainable development goals (SDGs). In Europe, several countries are working towards societal commitments for sustainable development, new transformative and long-term visions, which signify important new angles for a transition towards sustainable development.

Among all these exemplary activities and initiatives, what is common is that transformative approaches are needed towards a new 'transition towards sustainable development'. For instance in 2009, the peer review of the German National SD Strategy asked for a 'Grand Design 2050' as a transformative roadmap for sustainable development. A follow-up action to meet this demand was a 3-year research project commissioned by the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety and the German Federal Environment Agency on possibilities for a transformative environmental and sustainability policy, including transformative topic areas and governance modes, by using an experimental approach and involving a variety of stakeholders and experts.

This first chapter of the Discussion Paper reflects on the opportunity of transitioning to SD and the need of transformative sustainability policies with the main intention to provide at least two main perspectives on: 1) a framework for discussion on transition theory and transformative approaches; and, 2) an analysis on ways to deal with sustainability transitions through governance mechanisms.

1.2 Defining Transition and Transformation

'Transition' and 'transformation' are terms often used interchangeably (Fischer, 2010). Some authors understand 'transformations' as phases within a so-called 'transition' (Grin et al., 2010). Also, throughout our analysis of academic literature and policy papers, it seems to us that the concepts of 'transformation' or 'transformative processes' are frequently used to address smaller domains, and, do not have a complete holistic understanding as in the case with the concept of 'transition'. In a transition, "[t]echnological and institutional structures change fundamentally, as well as the perceptions of consumers regarding what constitutes a particular service (or technology)" (Markard et al., 2012, p.956). Additionally, transition theory nowadays represents an established field of research and a community[1] of academics within sustainability science. For these reasons, throughout this paper, we will mainly use or refer to 'transition', and more specifically to 'sustainability transitions'. In this context, the Sustainability Transitions Research Network (STRN) describes 'transitions research' as a new approach to sustainable development (SD) drawing on several inputs, such as, complexity theory, integrated assessment, innovation studies, history, governance studies, reflexive modernization.

In 2012, Markard et al. reviewed the academic literature on transitions and found four theoretical frameworks that acquired most prominence among scholars: (1) *transition management*[2], (2) *strategic niche management*[3], (3) *the multi-level perspective on sociotechnical transitions*[4], and (4) *technological innovation systems*[5]. In our discussion paper, we will describe two of these frameworks more in depth, as we believe they offer more intellectual and practical value for our purposes. More precisely, we will use the **Multi-Level Perspective (MLP)** as our main theoretical framework as it is considered to be able to "analyse the broader problem framing of innovating entire systems of production and consumption [and engage with] the dynamics of large-scale socio-technical systems deemed to present sustainability challenges" (Smith et al., 2010, p.436)[6]. In addition, we will discuss the **Transition Management (TM)** approach as it is especially interesting in its ability to provide a practical orientation on how to combine sustainability transitions with the governance for SD rationale, including reflexivity, participatory and learning processes in policy cycles.

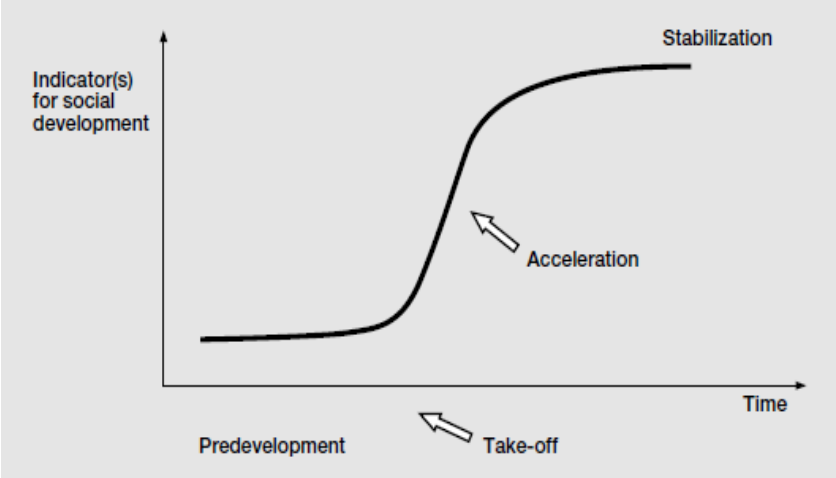
In general terms, a transition is defined as a process of change from one state to another. In one of the field's most foundational papers, Rotmans et al. (2001) **define 'transitions' as "transformation processes in which society changes in a fundamental way over a generation or more"(p.015). A transition is, therefore, a "gradual, continuous process of change where the structural character of a society (or a complex sub-system of society) transforms"** (ibid. p.016). Furthermore, a transition can be seen as a "set of connected changes, which reinforce each other but take place in several different areas, such as technology, the economy, institutions, behaviour, culture, ecology and belief systems" (ibid.). Accordingly, Markard et al. (2012) describe transition as involving **"far-reaching changes along different dimensions: technological, material,**

[1] See for instance, the Sustainability Transitions Research Network (STRN): http://www.transitionsnetwork.org
[2] See for instance: Kern and Smith, 2008; Loorbach, 2010; Rotmans et al., 2001
[3] See for instance: Kemp et al., 1998; Raven and Geels, 2010; Smith, 2007
[4] See for instance: Geels, 2002; Geels and Schot, 2007; Smith et al., 2010
[5] See for instance: Bergek et al., 2008; Jacobsson and Johnson, 2000; Hekkert et al., 2007
[6] See also: Rotmans et al., 2001; Berkout, 2000; Elzen et al., 2004.

organizational, institutional, political, economic, and socio-cultural" (2012, p.956). Transitions - they argue **- "involve a broad range of actors and typically unfold over considerable time-spans (e.g., 50 years and more).** In the course of such a transition, new products, services, business models, and organizations emerge, partly complementing and partly substituting for existing ones".

Conceptually, Rotmans et al. (2001) describe four different phases of a transition: predevelopment, take-off, breakthrough, and stabilization (see **fig.1**).

Fig.1 Four phases of Transition



Source: Rotmans et al. (2001; p.017)

Each phase has its characteristics, and in general they are described as follows:

- a predevelopment phase of dynamic equilibrium where the status quo does not visibly change;
- a take-off phase where the process of change gets under way because the state of the system begins to shift;
- a breakthrough phase where visible structural changes take place through an accumulation of socio-cultural, economic, ecological and institutional changes that react to each other;
- a stabilization phase where the speed of social change decreases and a new dynamic equilibrium is reached.

For a **sustainability transition** to occur, **the transition and the involved radical and incremental systemic changes need to happen on a variety of levels (multi-dimension) and on an array of systems (i.e. energy, food, mobility, production and consumption, etc.), which will co-evolve following the premises of sustainable development**. In this sense, sustainability transition can be defined as a change to a fundamentally different regime with radical changes in numerous domains of human societal structures. Nonetheless, sustainable development is a "complex challenge with a multitude of interdependencies and calls for considering numerous environmental and socio-economic goals in different sectors across multiple temporal scales" (Lange et al., 2013, p.419-420). But, sustainability transitions are also about change in perceptions, values, beliefs, practices and criteria (Kemp and van Lente, 2011), and, therefore, require that "people accept constraints and are willing to live and behave differently" (p.124). For

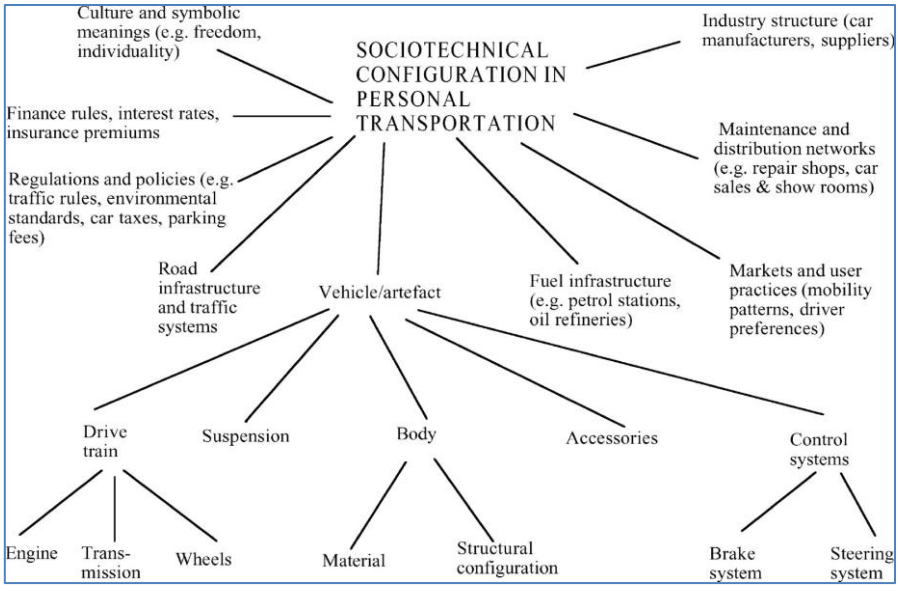
this reason, Kemp and van Lente (2011) argue that "transitions that do not fundamentally change criteria by which decisions are made are unlikely to lead to sustainability" (p.123). **Sustainability transitions are, in the end, fundamental transformation processes that are long-term and multidimensional** (Markard et al., 2012; Lange et al, 2013). Therefore, they crucially result in a radical shift of established socio-technical systems towards SD.

1.3 The main features and barriers of sustainability transitions

As recognised by the Sustainability Transitions Research Network (STRN), one of the **crucial challenges and struggles for sustainable development is that present systems are captured in "various lock-in processes that lead to path dependent developments"** (2010, p.4), which became in time highly institutionalised processes with a tendency to perpetuate such existing systems: in sustainability terms, we can see some examples in, for instance, an energy based on fossil fuels; infrastructures conditioned by car ownership; meat-based diets; over-consumption lifestyles, etc.. This recognition is definitely one of the main drivers behind the approach of sustainability transitions, as if we possessed a new lens through which we can somehow see the direction of the necessary radical changes that are needed towards the path suggested by sustainable development.

These existing systems represent a fundamental concept for understanding transitions and they are usually called *socio-technical systems*, which Markard et al. (2012) describe as consisting of actors (i.e. firms, individuals, organisations), networks of actors, institutions (i.e. societal and technical norms, regulations, standards of good practice), material artifacts, knowledge, and their interactions. The following figure (**Fig.2**), taken from Geels (2002), is particularly useful to exemplify and provide a graphical illustration of socio-technical systems and their components and facets (in the figure, personal transportation is used as example).

Fig.2 An example of a socio-technical system and its components



Source: Geels, 2000, p.1258

In terms of main features, sustainability transitions portray those essential features of both discourses: on the one hand, sustainable development, and, on the other, transition theory. One of the crucial characteristics of both concepts is their indispensable consideration of the **long-term perspective**[7] – at least 25 years (Rotmans et al. 2001) – and, therefore, the **intergenerational glance** over the present and the future. A second feature is represented by a **systemic understanding** of reality and its multidimensionality, where the different systems are all but independent, and influence each other in many ways, or even show co-evolutionary developments. Thirdly, sustainability transitions are about **incremental but radical and fundamental transformative changes** of processes and systems, based particularly on innovation and experiments.

In terms of **barriers** and **obstacles** to sustainability transitions, one can mainly identify those mutually reinforcing processes that, as explained before, lead to **lock-in situations or path-dependent developments and entrapment** (STRN, 2010), such as those existing systems like:

- the knowledge, capabilities and employment of various actors relevant to the maintenance of existing systems;
- the technical infrastructures and institutions (that have developed over time to service those systems);
- the economies of scale and markets of incumbent systems;
- the social significance of these systems, and their links to political power;
- the mutually reliant clusters of technologies used by these systems; and,
- the everyday practices and lifestyle values that have come to rely on these systems.

1.4 The Multi-Level Perspective

Not to be confused with 'multilevel governance', one essential academic viewpoint on transitions is the **Multi-Level Perspective (MLP)**, which we believe has the ability to explain the overall picture of the transitions concept. Accordingly, the Multi-Level Perspective (MLP) explains transitions with the interactions and interplay at three levels: niches, regimes, and landscapes (Rip and Kemp, 1998; Geels, 2002; Geels and Schot, 2007). In terms of social organization, this multi-level perspective goes well together with another distinction among micro- (individuals or individual actors such as companies environmental movements), meso- (that of networks, communities and organisation), and macro-levels (conglomerates of institutions and organizations, e.g. a nation or federation of states) (Rotmans et al., 2001).

Niches are seen as 'protected spaces' (Geels, 2011) such as R&D laboratories, subsidised demonstration projects, or small market niches where users have special demands and are willing to support emerging innovations. Niche actors (such as entrepreneurs, start-ups, spinoffs) work on radical innovations that deviate from existing regimes. "The niche level (micro level) relates to individual actors and technologies, and local practices. At this level, variations to and deviations

[7] As from the literature, we also associate a long-term perspective with the time of a generation, therefore, at least 25 years. A short-term perspective might take into consideration a timeline of less than 10 years, while a mid-term perspective is found between 10 and 25 years

from the status quo can occur, such as new techniques, alternative technologies and social practices" (Rotmans et al., 2001, p.019).

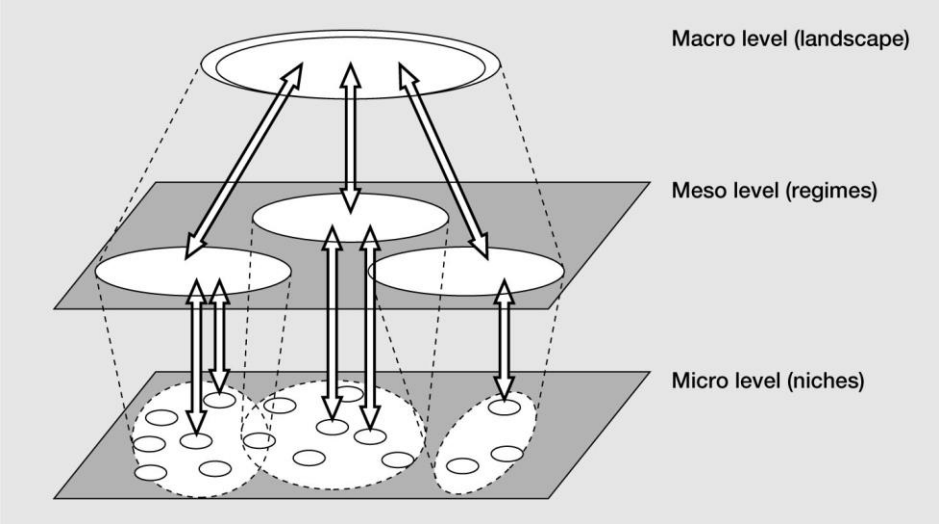
Socio-technical regimes are well described by Smith et al. (2005) as "relatively stable configurations of institutions, techniques and artefacts, as well as rules, practices and networks that determine the 'normal' development and use of technologies" (p.1493). This level of **regimes** (meso-level) relates to "dominant practices, rules and shared assumptions. At the meso-level are the interests, rules and beliefs that guide private action and public policy - for the most part geared towards optimising rather than transforming systems" (Rotmans et al., 2001, p.019).

The **socio-technical landscape** relates to "material and immaterial elements at the macro level: material infrastructure, political culture and coalitions, social values, worldviews and paradigms, the macro economy, demography and the natural environment" (Rotmans et al., 2001, p.019).

The process of transition considers these three levels: (a) niche-innovations build up internal momentum, through learning processes, price/performance improvements, and support from powerful groups; (b) changes at the landscape level create pressure on the regime; and (c) destabilisation of the regime creates windows of opportunity for niche innovations. The *alignment of these processes* enables the breakthrough of novelties in mainstream markets where they compete with the existing regime (Geels and Schot, 2007 p.400).

In the following figure (**Fig.3**) we show the representation of this multi-level perspective and the interactions between the different levels.

Fig.3 The Multi-Level Perspective (MLP)



Source: Rotmans et al. 2001

1.5 The Transition Management Approach

One of the four main strands of research that have been identified in the literature is the so-called 'Transition Management approach' (Markard et al., 2012). This approach is particularly interesting as it offers a practical operationalization and a way to facilitate transition governance. In the context of sustainable development, one of the most interesting facets of transition management is that it "seeks to overcome the conflict between long-term imperatives and short-term concerns" (Kemp and Loorbach, 2006, p.125), which is probably one of the most crucial

difficulties that policy-makers dealing with governance face on a daily basis. Kemp and Loorbach (2006) describe the key elements of transition management as:

- **system-thinking** in terms of more than one domain (**multi-domain**) and different actors (**multi-actor**) at different scale levels (**multi-level**);
- **long-term thinking** (at least 25 years) as a framework for shaping short-term policy;
- **back-casting and forecasting**: the setting of short-term and longer-term goals based on long-term sustainability visions, scenario studies, trend analysis and short-term possibilities;
- **a focus on learning** (i.e. learning-by-doing, doing-by-learning, through experiments);
- **an orientation towards system innovation and experimentation**;
- learning about a **variety of options**;
- **participation** by and interaction between stakeholders.

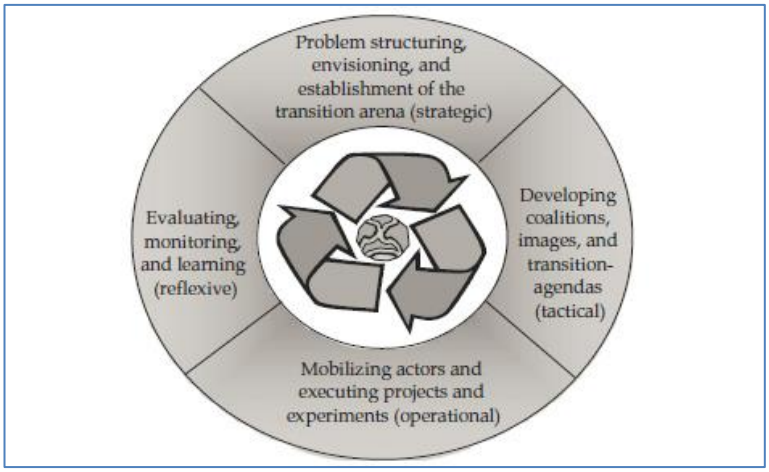
The approach of transition management includes several steps but is not intended as a method as such, but it needs adaptation to every issue at hand. Kemp and Loorbach (2006) propose the following activities for **'managing transition'**: (a) Transition Arenas and Multi-actor Governance; (b) Problem Definition and development of a shared problem perception; (c) creation of a Transition Vision and Transition Goals; (d) Transition Paths (possible routes toward the final image), Interim Objectives and the building of a coalition; (e) Programmes for System Innovation through new technologies in society and experimenting; (f) Monitoring, Evaluating and Learning; and, (g) Creating and maintaining Public Support, and Broadening the Coalition.

In terms of the implementation of the transition management approach, Loorbach (2010) suggests the so-called '**Transition Management Cycle**' (Fig.3) that is represented by a cyclical process model through four main blocks:

1. Structure the problem in question, develop a long-term sustainability vision and establish and organize the transition arena;
2. Develop future images, a transition agenda and derive the necessary transition paths;
3. Establish and carry out transition experiments and mobilize the resulting transition networks;
4. Monitor, evaluate, and learn lessons from the transition experiments and, based on these, make adjustments in the vision, agenda, and coalitions.

In reality, there is no fixed sequence of the above steps in transition management. The cycle only visualizes the *need to connect activities* and presents some possible logical connections but does not suggest a sequential order of activities (Fig.3).

Fig.4 The Transition Management Cycle



Source: Loorbach, 2010

A fundamental part of the transition management approach is the establishment of a so-called **'transition arena'** that is defined as *an institution for facilitating interaction, knowledge exchange and learning between actors* (Kemp and Loorbach, 2006), and it is, therefore, seen as an open and dynamic societal network of innovation (Van Buuren and Loorbach 2009). *The transition agenda has different phases*: In its first phase, the transition arena is a relatively small network of innovators and strategic thinkers from different backgrounds that discusses the transition problem integrally and outlines the transition goals. Then, further on in the process, the network will expand to include less strategically oriented actors (i.e. local authorities, people with practical knowledge about processes of change) in order to develop transition paths and link these to existing (not only governmental) policies. Finally, short-term experiments and actions are derived from the goals and paths and more operationally oriented organisations and actors will be involved. In this process, the selection of participants to the transition arena is particularly crucial: what is needed are participants that are frontrunners, visionaries and are able to look beyond their own domain and be open minded (Kemp and Loorbach, 2006, p.112).

1.6 Governance of transitions in the context of the triad politics-polity-policy

Policy-makers and experts dealing with sustainable development are faced by numerous issues. One of the most pressing ones comes in a dual form, especially when SD becomes a policy objective. In this regard, Lange et al. (2013) explain that, first, "there is a need to steer a process of deep social transformation requiring action across a variety of temporal, spatial and structural scales"; and, secondly, "the steering logic exhibits a multi-dimensional character due to uncertain and ambivalent objectives (that might also change over time), the need for a long-term perspective, and consideration of multiple levels, sectors and steering instruments" (p.406).[8]

As briefly introduced in section 1.4 above, the transition management approach constitutes a form of **reflexive governance** that is particularly interesting to overcome these issues, and useful

[8] See also: Baker, 2009; Meadowcroft, 2007

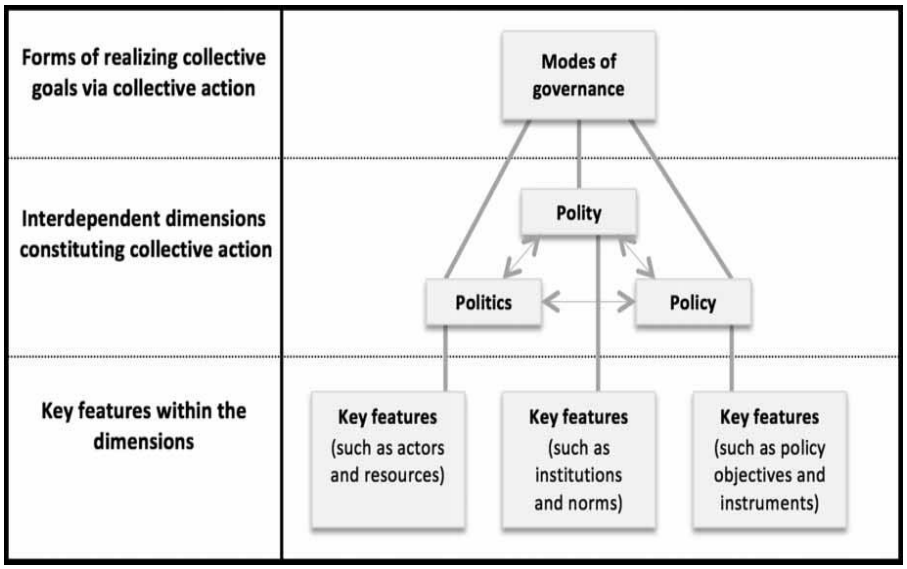
to reflect upon in the context of governance for SD, in general, and of the forthcoming 11th ESDN Workshop on transformative environmental and sustainability policies, in particular.

According to Kemp and Loorbach (2006), transition management could be seen as a valuable form of reflexive governance that includes five of the most pressing elements when confronted with ways to facilitate transitioning towards sustainable development: 1) knowledge integration; 2) anticipation of long-term systemic effects; 3) adaptivity of strategies and institutions; 4) iterative participatory goal formulation; and 5) interactive strategy development.

The first of these elements, **knowledge integration**, is characterised by intensive dialogue and discussions among participants of the transition arena with the intention of confronting different perspectives toward the development of a shared perception of the problem, and through that the 'creation' of new knowledge and the identification of knowledge gaps. This knowledge will be then diffused out of the transition arena in other networks, institutions and domains. Secondly, transition management tries to **anticipate long-term systemic effects** by the widespread use of scenario analyses, trend analyses, back-casting and fore-casting exercises, and identification and selection of innovations. Then, transition management relies on an **adaptive step-by-step approach** and this is also why it is seen as an *incrementalist strategy for changing societal systems*. Fourth, in transition management, goals chosen by and in society are **continuously re-assessed**, together with policies to move closer to those goals, where evaluation, monitoring and experiential learning play essential roles. Lastly, the final element of transition management as a reflexive governance tool is the **interactive strategy development**, which relies on a large involvement of societal actors and stakeholders, which has several benefits such as generating public support, increasing legitimacy, reducing risks on non-acceptance, offering an additional source of ideas, learning of problems and solutions, etc.

In light of what we described as sustainability transitions through the Multi-Level Perspective and Transition Management, we find that an extremely useful viewpoint on governance for SD is offered by Lange et al. (2013) on the **triad politics-polity-policy** (see **fig.4**). In their article they argue that only a multi-dimensional approach that considers the dimensions of **politics** (political processes), **polity** (institutional structures), and **policy** (objectives and policy instruments) can adequately capture the complexity of governance phenomena. More specifically, the politics dimension covers the process side of governance and refers to the actors and interaction processes inherent in a mode of governance. The polity dimension denotes the structural side of governance understood as the institutional 'rules of the game' that shape the interactions of actors. The policy dimension encompasses the content of governance, policy formulation and implementation and thus the objectives and instruments of political steering (ibid. p.409).

Fig.5 The triad Politics-Polity-Policy



Source: Lange et al., 2013

What is especially valuable in this conceptualisation for those working on facilitating transitions towards SD is the necessary linkage between activating governance for SD – through the MLP and TM approaches – and the consideration of and 'intervention' on the triad. In order to justify this argument, we first need to consider the interplay between these three dimensions as described in Lange et al. (2013, p.409):

1) The **polity-politics interlinkage** defines the political playing field: in there, the institutional architecture, for instance, determines the actors and levels involved in governance processes, as well as the division of power resources. This interlinkage is two-sided: on the one hand, politics is embedded in the polity; on the other hand, changes within the political arena can provoke alterations in the 'rules of the game'.

2) The **polity-policy interlinkage** determines the institutional setting of policy formulation and implementation. Polity represents the rules and procedures through which policy-making is performed. Again, there is a two-sided relationship since variation in the policy process can lead to change in the institutional setting and vice versa.

3) The **politics-policy interlinkage** denotes, for example, the potential of state and non-state actors in a governance arrangement to actively participate in policy-making[9].

The main messages that we want to highlight for this understanding of governance are mainly three. First of all, we believe that a profound understanding of the politics-polity-policy dimensions and especially these linkages among them is key. Secondly, this conceptualisation offers a general systemic viewpoint over the complexity of governance for SD that needs to be taken into consideration and, at the same time, can facilitate the development of a common ground when some kind of intervention or steering initiatives are necessary. Lastly, we argue that in the context of transition, when the goal is that of facilitating a sustainability transition – therefore, radically change society in the direction of sustainable development – transition approaches will only be really helpful if they address all three dimensions of politics, polity and

[9] For a concrete operationalization of the interlinkages, see Van Leeuwen & Van Tatenhove, 2010

policy. In fact, as transitions are co-evolutionary processes where different levels influence each other, and this valuable framework of governance for SD builds on a system of the three dimensions (politics-polity-policy) and their influencing behaviours, we believe that transformative approaches could be applied in this direction, where the transition management approach and the multi-level perspective are meaningfully paired and try to impact those three dimensions. However, how to address politics, polity and policy with the lens of sustainability transitions still needs to be debated and analysed.

2 International and national attempts on sustainability transitions

This chapter provides an overview of international and European policy efforts, activities and initiatives on sustainability transitions. Two main sections constitute this second chapter. The first one includes an analysis of selected initiatives about transformations, transitions and sustainable development from an international point of view. The second one looks at national examples from several EU Member States on sustainability transitions through the lens of a survey we undertook between May and June 2014.

2.1 The international level

In this section, we portray an analysis of four prominent international initiatives that show important characteristics of sustainability transitions, namely:

- the OECD's Green Growth[10];
- the UNEP's Green Economy[11];
- the WBCSD's Vision 2050[12]; and
- the UN Post2015 Agenda[13] ,together with the latest version of the proposal on the SDGs process[14].

To undertake this analysis, we developed a framework based on the conceptualisation outlined in the first chapter. Because of limited resources and limited time availability, we mainly considered the introductory/concluding chapters and the summaries of the selected reports. In addition, we examined the documents by applying a keywords search based on the concepts and questions included in the following box 2.1.

Box 2.1 Criteria, concepts and questions of the framework

What is understood by transformation/transition in the main documents?	Comprehensiveness of SD, Long-term/intergenerational perspective, Radical/structural changes, Innovation, Reference to 'sustainability transitions' literature
What was the motivation behind the development of the strategy/initiative for transitioning towards SD?	Motivation, main driver
How is the process for developing the	Process of development, Concrete steps foreseen

[10] OECD (2011) Towards Green Growth. http://www.oecd.org/greengrowth/towardsgreengrowth.htm
[11] UNEP (2011) Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication,www.unep.org/greeneconomy
[12] WBCSD (2010) Vision 2050: The new agenda for business, http://www.wbcsd.org/pages/edocument/edocumentdetails.aspx?id=219&nosearchcontextkey=true
[13] UN (2013) A NEW GLOBAL PARTNERSHIP: ERADICATE POVERTY AND TRANSFORM ECONOMIES THROUGH SUSTAINABLE DEVELOPMENT. The Report of the High-Level Panel of Eminent Persons on the Post-2015 Development Agenda, http://www.post2015hlp.org/wp-content/uploads/2013/05/UN-Report.pdf
[14] UN (2014) Introduction and proposed goals and targets on sustainable development for the post2015 development agenda, http://sustainabledevelopment.un.org/content/documents/4044140602workingdocument.pdf

"SD transition" activities designed?	
Which ministries/institutions and stakeholders are involved in the process of developing the SD transition activities?	Ministries/institutions and stakeholders involved, Key actors, Innovative form of collaboration
Is there a monitoring and evaluation phase described?	Monitoring and evaluation, Concrete objectives and targets, Mid-term goals, reflexivity, learning
How does the process of implementing the SD transition activities look like?	Actions and timeframes foreseen, Implementation process
Which institutions and stakeholders are involved in the implementation?	Institutions and stakeholders involved, Innovative forms of collaboration
To what extent are 'Politics', 'Polity' and 'Policy' taken all in consideration?	Relationship between state actors and non-state actors; Institutional architecture; Policy instruments

The following eight sections show the results of this analysis:

1. The understanding of sustainability transitions;
2. Motivation and drivers behind the development on the initiative;
3. Development process of the sustainability transition activities;
4. Involvement of public institutions and stakeholder in the development process;
5. Monitoring and evaluation phases within international initiatives;
6. The process of implementing the SD transition activities: actions and timeframes;
7. Institutions and stakeholders involved in the implementation;
8. The triad Politics-Polity-Policy within the international initiatives selected.

2.1.1 The understanding of sustainability transitions

All international initiatives we looked into *refer to the sustainable development discourse*, either by referring directly to the international conferences (i.e. Rio+20) and documents negotiated since the 1987's Our Common Future with the World Commission on Environment and Development (WCED) – Brundtland Commission – or by delineating their visions alongside the main concepts of SD.

Few main *differences arise in a deeper analysis of the way SD is referred to* within the selected initiatives. While the OECD's Green Growth document seems to have a very strong focus on economic growth and on the economic pillar of SD, the UNEP's Towards a Green Economy report has a more balanced way of looking at sustainability and it appears to be able to consider all three SD dimensions rather equally. Similarly, the UN Secretary General's High-Level Panel of Eminent Persons on the post-2015 Development Agenda shows a clear view on SD referring to the integration of the three dimensions of SD while the WBCSD Vision 2050 appears less explicit and precise.

In terms of *timeframes*, 2030 and 2050 are most prominently referred to. While the High Level Panel focuses on a mid-term vision towards 2030, all the other three initiatives explicitly refer to a

longer timeframe. In case of the documents by WBCSD and by UNEP, they look 40 years ahead and refer explicitly to the year 2050. Although the OECD's report mentions a long-term perspective very often throughout the document, it remains rather unspecific with setting a clear timeframe. In addition, it is interesting to note that both, UNEP and WBCSD take into consideration more detailed timeframes: for instance, the WBCSD's vision refers to a short term (2010-2020) and a mid-to-long term view (2020-2050).

With regard to the *theoretical framework on transitions* we present in the first chapter, solely the UNEP's report refers directly to sustainability transitions literature. More specifically, it argued, for instance, that in order to create a greener economy, fundamental changes are needed – changes which some have referred to as a social-technological transition[15]. In several instances, the UNEP's report mentions the *necessity for radical changes not only from a technological point of view but also from the social point of view* through structural changes in practices and criteria (i.e. supply-chain management, especially to the product and industrial design) and on values, perceptions and beliefs (i.e. making society more efficient with regard to the use of resources, new ways of using products and changes in consumption habits). Accordingly, in UNEP's vision, innovation has an important role.

Similarly, the WBCSD's Vision 2050 addresses in many ways *structural and radical changes* suggesting a pathway that "will require fundamental changes in governance structures, economic frameworks, business and human behavior" (p.2). On the same line, the vision considers the inability of a business-as-usual scenario to bring about sustainability or secure economic and social prosperity, which can only be achieved, so the argument, through urgent radical change. In this context, WBCSD looks at behaviour change and social innovation, which are seen as crucial as technological innovation.

The High Level Panel's vision on post-2015 also takes into consideration radical and structural changes. In particular, its document refers to the necessity of new paradigm in which, again, business-as-usual is not an option. Coherently, the Panel envisions a so-called *new global partnership* with the aim of encouraging everyone to alter their worldview, profoundly and dramatically. Then, it regards the post-2015 agenda as a universal agenda that will need to be driven by five transformative shifts: (1) leave no one behind; (2) put sustainable development at the core; (3) transform economies for jobs and inclusive growth; (4) build peace and effective, open and accountable institutions for all; (5) forge a new global partnership.

Finally, the OECD's Green Growth document seems to have the least radical vision among all the initiatives we analysed. In this case, it seems that no radical transformative processes or steps are envisaged. Although non-technological changes and innovation, such as new business models and work patterns, will also be instrumental in driving green growth, perceptions, values, beliefs, practices and criteria are not explicitly described: continues economic growth appears to remain the main driver and ultimate goal for society to meet future challenges.

2.1.2 Motivation and drivers behind the development on the initiative

The *financial crisis* triggered international efforts towards more sustainable ways: The UNEP's document "Green Economy" suggests the transition to a green economy after the concurrent

[15] See: Geels (2002)

crises and market failures including the financial and economic crisis. In order to reverse connected misallocations, better public policies pricing and regulatory measures are needed in order to change problems of capital misallocation and account business for unchecked social and environmental externalities. The World Business Council on Sustainable Development calls our current times the "Turbulent Teens 2010-2020" because the global financial crisis put people's faith in business and governments in question. Therefore, the WBCSD's aims at rebuilding trust and finding answers to many issues society facing, such as climate change identifies the need of clear, swift, radical and coordinated actions by many levels and multiple partners.

The motivation behind the development of initiatives for transition towards SD results of specific *needs for change in the current system because of the concurrent crises*. The OECD's document on Green Growth, for instance, identifies a strong need for green growth strategies due to following twin challenges the world is facing nowadays: expanding economic opportunities for a growing global population, and addressing environmental pressures, therefore, the policy motivation for greener growth mainly lies in environmental concerns.

Three of the four documents clearly address *economic transitions* in order to move towards sustainable development. For instance, the OECD and UNEP both emphasize the need for a green economy. However, the SDGs put their motivational focus on ending poverty through sustainable development and on the importance of a global partnership to work together to promote sustained and inclusive economic growth, social development and environmental protection. The driver for SDGs was to develop a post-2015 agenda since the time frame for the MDGs is running out next year.

2.1.3 Development process of the sustainability transition activities

The visions and steps in the international SD transition documents are *differently approached in terms of concreteness and extent*. Only the OECD explicitly mentions that the report "Green Growth" was launched as part of the Green Growth Strategy and is the result of a multidisciplinary process jointly led by experts. Yet, it stresses that the development of a global architecture conductive to greener growth requires strengthened international cooperation for addressing environmental challenges.

According to the OECD document, promoting successful transition towards green growth implies following steps: developing strategies for reform, facilitating adjustment in the labour market, accounting for concerns about distributional impacts and promoting international cooperation.

Another example is the UNEP's Green Economy strategy which foresees three steps for reversing the process of unsustainable development: the requirement of improvements in environmental valuation and policy analysis; the implementation of effective and appropriate information, incentives, institutions, investments and infrastructure; and increasing collaboration between environmental scientists, ecologists and economists for the assessment and monitoring long-term impacts of land conversion and global climate change.

The SDGs and the related post-2015 Agenda envision five major transformative changes in order to make the step from vision to action: i) leave no one behind making a reference to the MDG and the goals of ending extreme poverty, ii) put sustainable development at core, iii) transform

economies for jobs and inclusive growth, iv) build peace and effective, open and accountable institutions for all and forge a new global partnership.

By comparing the differences of the various steps in the documents, it becomes obvious that the *actions required are devoted to economic, political and environmental issues* in the OECD's and UNEP's documents. However, the SDGs and the post-2015 Agenda *focus their steps and milestones on more social and societal issues* devoting only one of the five action fields to changing of the economy.

Unlike the three mentioned examples, the WBCSD created a *pathway to design the process of developing SD transition activities* dividing it into two time frames. The pathway is a set of descriptions that illustrate the transition to a certain scenario and identifies nine areas of action, such as values and behaviors, human development, economy agriculture, forests, energy and power, buildings, mobility and materials. It is remarkable that the design of the process is divided into two time fames: the *Turbulent Teens (2010-2020)* and the *Transformation Time (2020-2050).* The first and formative period is marked by energy and dynamism for the global vision of sustainability while the latter one is characterised by consistent knowledge, behavior and solutions entailing growing consensus and wrenching change in society, climate, economic power and population issues.

2.1.4 Involvement of public institutions and stakeholder in the development process

On the sustainability transition on the international level, *large consultations and collaborative efforts* that all initiatives undertook are characteristic. A variety of stakeholders was involved in the different initiatives and activities, such as international organisations (i.e. the International Labour Organization, the UN World Tourism Organization, the UN Foundation, the International Chamber of Commerce), businesses, civil society organisations, academia or private foundations (i.e. the Ford Foundation, Havas, and the Hewlett Foundation, as mentioned by the High Level Panel). For instance, the Secretary-General's High-Level Panel of Eminent Persons on the Post-2015 Development Agenda involved of people from more than 5000 civil society organisations and 250 chief executive officers of major corporations. It is interesting to mention that, the OECD refers in its Green Growth work to the necessity "to build on a high degree of co-ordination among ministries and levels of government as well as stakeholders outside government, to identify a policy mix suitable to local conditions".

Furthermore, we found that *all the processes of developing SD transition initiatives involved national governments*, especially offering support and different policy perspectives. For instance, in the case of UNEP's Green Economy initiative, the governments of Norway, Switzerland and UK.. In the case of the Post-2015 agenda, the governments of Colombia, Denmark, Germany, Indonesia, Japan, Liberia, Mexico, the Netherlands, Sweden, the United Kingdom, the United States of America provided inputs and also offered financial and in-kind contributions.

In two instances (OECD and UNEP), *internal expert teams* developed the sustainability transition activities. In the OECD case, the Green Growth report was developed as part of a multidisciplinary process that was jointly led by experts from four key OECD Directorates and supported by what is known as the 'Green Growth team'.

Also interestingly, in the case of the WBCSD, the Vision 2050 project was governed by four co-chair companies, and the content developed by 29 companies through a collaborative effort among them and with hundreds of representatives from business, government and civil society, with regional partners and with experts.

2.1.5 Monitoring and evaluation phases within international initiatives

Apart from the WBCSD's initiative, *all other documents explicitly refer to and recommend monitoring and evaluation phases*. For instance, although SDGs are not suggested as binding goals, the High Level Panel suggests they should be monitored closely by an independent and rigorous monitoring system, with regular opportunities to report on progress and shortcomings at a high political level. Additionally, the Panel also calls for a so-called *data revolution for sustainable development*, with a new international initiative to improve the quality of statistics and information, which should make use of new technology, crowd sourcing, and improved connectivity with the key aim to empower people with information on the progress towards the targets. The OECD's Green Growth report specifically proposes that progress towards green growth is necessarily monitored through groups of indicators which describe and track changes in four main areas: (i) productivity in the use of environmental assets and natural resources; (ii) the natural asset base; (iii) the environmental dimensions of quality of life; (iv) policy responses and economic opportunities. Accordingly, for each of these groups, the OECD initiative prepared a companion report in which it proposed a list of indicators[16]. Also in the UNEP's report 'Towards a Green Economy', a solid reference to monitoring and evaluation is made under the so-called 'enabling conditions' for a transition to a green economy. In this case, while recommending 'improved transparency and accountability', UNEP's initiative specifically suggests that *monitoring and evaluation are seen as a component of policies*.

2.1.6 The process of implementing the SD transition activities: actions and timeframes

Apart from the post-2015 Agenda that proposes goals and targets through the SDGs process, most of these broad *international initiatives lack concrete implementation processes and references to clear guidelines on how to achieve their objectives in practice*. For instance, for the WBCSD's Vision 2050, we could not find a clear and concrete implementation process[17], but we can appreciate how two timeframes are considered: (a) a short-term, so-called 'Turbulent Teens' (2010-2020); and (b) a mid/long-term, so-called 'Transformation Time' (2020-2050). Nonetheless, a pathway is suggested comprehending nine elements (or critical areas) in which actions need to be taken "over the next four decades", that provide a more detailed picture. This pathway and its elements do not prescribe or predict, but offer plausible stories that WBCSD's companies have created by "backcasting", as they worked back from the vision for 2050 and identified the changes needed to reach it that vision.

A common point is to be found between the OECD and the post-2015 agenda in relation to the realisation that *implementing strategies cannot be identical and cannot follow a 'one-size-fits-all' prescription*. On the contrary, as the UN Secretary General's High-Level Panel of Eminent Persons

[16] OECD (2011) Towards Green Growth: Monitoring Progress. OECD Indicators. Paris: OECD

[17] In addition, the WBCSD prepared a complementary report to Vision 2050 titled *Changing Pace* (available at: http://www.wbcsd.org/changingpace.aspx). *Changing Pace* translates each of the nine elements of the pathway of Vision 2050 in clear and concrete public policy recommendations, and invites governments, policy makers, civil society, and business leaders to actively engage in the debate.

on the post-2015 Development Agenda report suggests, global targets are only effectively executed when they are *locally-owned* and *embedded in national plans as national target*. In fact, they argue "through their national planning processes each government could choose an appropriate level of ambition for each target, taking account of its starting point, its capacity and the resources it can expect to command". Accordingly, the OECD proposed an action policy framework that is designed to be *flexible enough to be tailored to differing national circumstances and stages of development*.

Crucially, *all selected international initiatives ask for interventions, coordination and collaboration on multiple levels*. In particular, the WBCSD Vision 2050 identifies the necessity for swift, radical and coordinated actions at many levels and by multiple partners. The OECD Green Growth strategy suggests partnerships with initiatives by other international organisations, including UNEP, UNESCAP and the World Bank. In the UNEP's Green Economy strategy, enabling conditions for a green economy are mentioned and analysed from a national and level perspective and from an international level viewpoint. In addition, the High-Level Panel of Eminent Persons on the post-2015 Development Agenda report calls for improving "coordination and deliver on a single, integrated sustainable development agenda, including building on positive recent steps to improve collaboration between the UN's agencies, funds and programmes, and with the international financial institutions".

In terms of concrete actions in order to move towards sustainability transitions, we found that *all four selected initiatives suggest reforms in the economic and financial infrastructures* through, for instance, fiscal interventions (see OECD).

2.1.7 Institutions and stakeholders involved in the implementation

Most of the selected international sustainability transition initiatives are largely unspecific about the involvement of institutions and stakeholders. Only the OECD Green Growth initiative clearly states that in order to succeed, national green growth strategies will need to be mainstreamed into national government policies, therefore, putting a strong emphasis on the role of national governments. However, as already mentioned, the OECD generally suggests that framework and policy insights should be tailored to account for country-specific circumstances.

In the WBCSD's Vision 2050, the role of business is instead very clear: as the transformation foreseen will bring about huge shifts (i.e. in terms of regulation, markets, consumer preferences), business should lead the envisioned transformation, rather than follow change.

In terms of *innovative forms of collaboration*, two interesting suggestions come from the UN Secretary General's High-Level Panel of Eminent Persons on the post-2015 Development Agenda among the five 'transformative shifts' it foresees. First, it proposes to forge a *new global partnership* that would "enable a transformative, people-centred and planet-sensitive development agenda", by involving governments and others, such as people living in poverty or with disabilities, women, civil society and indigenous and local communities, multilateral institutions, local and national government, the business community, academia. Secondly, the Panel suggests so-called *multi-stakeholder partnerships* in which stakeholders would partner-up by thematic area to guide the way to meeting targets and ensuring that programmes are effective on the ground. In the example of the OECD Green Growth initiative, no innovative forms of

collaboration are clearly mentioned, rather *a deepened collaboration is foreseen* with other international organisations (i.e. UN agencies, World Bank, Global Green Growth Institute) and a range of stakeholders aimed at facilitating the "exchange of experience and best practices" and "promote international arrangements that are conducive to greener growth in both developed and developing countries". As for WBCSD's Vision 2050, the first part of the envisioned transformation (2010-2020) proposes a *mix of new alliances* to rebuild trust and find answers. In these new alliances, government, academia, business and a range of stakeholders, including society, are to work closely together on a number of issues, such as economic development, the design of systems and metrics to measure progress, climate change solutions, technology deployment, and shifting values and behaviors toward sustainability.

2.1.8 The triad Politics-Polity-Policy within the international initiatives selected

The *'Policy' dimension is the most considered of the three dimensions of the so-called triad Politics-Polity-Policy* we described in the first chapter (*section 1.6*). For instance, the OECD's Green Growth initiative expressively proposes that implementing a green growth strategy will involve a mix of policy instruments, among which market-based instruments have specific prominence, such as specific environmental policy instruments like for instance cap-and-trade permit systems, taxes or charges on pollution or resource use, subsidies etc. However, the OECD initiative also recommends the use of other instruments, such well-designed regulation, active technology-support policies and voluntary approaches that in other instances may be more appropriate or an important complement to market instruments. Also in the UNEP's Towards a Green Economy initiative, the dimension of Policy appears to be the most well elaborated. However, is seems that the UNEP's initiative has a more balanced view not only in terms of usage of policy instruments suggested, which does not only rely on market-based measures, but also with regard to the 'Polity' dimension and, to a lesser extent, the 'Politics' dimension. Accordingly, UNEP's Green Economy report suggests several so-called 'enabling conditions' for a green economy that are grouped under five themes: finance, governance, market, infrastructure and information. In fact, it explicitly argues, "using instruments, such as taxes, incentives and tradable permits to promote green investment and innovation is also essential, but so is investing in capacity building, training and education [as well as] strengthening international governance and global mechanisms that support a transition".

A similar more balanced view, especially in regard to the 'Polity' dimension, is to be found in the report by the UN Secretary General's High-Level Panel of Eminent Persons on the Post-2015 Development Agenda. The Panel thus proposes that two out of 'five transformative shifts' for the Post-2015 agenda should consider to (a) build peace and effective, open and accountable institutions for all (with responsive and legitimate institutions that encourage the rule of law, property rights, freedom of speech and the media, open political choice, access to justice, and accountable government and public institutions), and (b) forge a new global partnership that involves governments but also other stakeholder, including people living in poverty, civil society and indigenous and local communities, multilateral institutions, local and national government, the business community, and academia).

In the case of WBCSD's Vision 2050, policies and policy instruments are also mentioned (i.e. phasing out of perverse subsidies), although the document is rather unspecific as regards the

dimensions of 'Polity' and 'Politics'. However, 'multi-partner governance' is mentioned at international, national and local level when they argue that "nations and the roles of governments [need to] continue to evolve", but with each level having a specific role according to their competencies and resources.

2.2 EU Member States' initiatives on sustainability transitions

In this part, we provide an overview on sustainability transition initiatives undertaken in six EU member states (Austria, Belgium, Finland, France, Germany, and Netherlands). They were selected on the basis of their innovative approaches towards sustainability transitions and act as examples of national initiatives, most of them are directly linked to national sustainable development strategy processes. The analysis is based on desk research (of sustainability transition documents, when available) and personal interviews with representatives of national ministries who are responsible for the transition processes. For the personal interviews, we developed a questionnaire which you can find in the box below.

Box 2.2. Questionnaire for EU member states

1. What was the motivation behind the development of your national initiative for transition towards SD? Who was the driver behind the initiative? When did you start the process?
2. Which approaches influenced or inspired the process of your "transition" initiative?
3. How did you design the process for developing the "SD transition" activities? Which concrete steps are/were foreseen?
4. Which ministries and stakeholders are/were involved in the process of developing the SD transition activities? What are/were the key actors in the design phase?
5. What are the concrete objectives and targets of your SD transition activities? How are they related to current policy initiatives at the international (e.g. UN, OECD) and European level?
6. How does the process of implementing the SD transition activities look like? Which actions and which timeframes are foreseen?
7. Which institutions and stakeholders are involved in the implementation of your "transition" activities towards SD?

The aim of this questionnaire was to compare the countries' initiatives on sustainability transition in order to show how they deal with transition challenges in general. After having received the answers either by mail or during a telephone interview, we developed a comparative study by analysing the results of the desk research and interviews. The Netherlands did not answer our questions directly, but provided us with three papers which we integrated in our analysis. There is a great variety of different processes, depths and contents on transformative initiatives and our aim was to give a comparative overview of how countries are approaching transitions within the sustainable development context. However, we did not have the intention to rank the countries' initiatives, but to portray motivations, drivers, visions, objectives and implementation processes.

For further information on the countries' transformative environmental and sustainability initiatives, please consult the following box which enlists the main national strategies or initiatives of reference and the persons we interviewed.

Box 2.3. Main initiatives of reference

Country	Main Initiative of Reference	Person Interviewed
Austria	Growth in Transition	Caroline Vogl-Lang (Ministry of Agriculture, Forestry, Environment and Water Management)
Belgium	Long term vision for Sustainable Development 2050 and Long-term Sustainable Development Visions: Concepts, Applications, and Elaboration	Cédric Van de Walle (Federal Public Planning Service for Sustainable Development)
Finland	Society's Commitment to Sustainable Development: The Finland We Want by 2050	Sauli Rouhinen (Ministry of Environment)
France	National strategy of the ecological transition towards a sustainable development	Stéphane Bernaudon (Ministry for Ecology, Sustainable Development and Energy)
Germany	World in Transition A Social Contract for Sustainability by WBGU and Grand Design – Sustainable Germany 2030 to 2050	Jörg Mayer-Ries (Ministry for the Environment, Nature Conservation, Building and Nuclear Safety
The Netherlands	Dutch Environmental Policy and the Private Sector – achieving green growth together	Robert Droop (Ministry of Infrastructure and the Environment)

2.2.1 Motivation and main drivers

One can identify *six main drivers* that steered national ministries in their efforts to develop sustainability transition activities and initiatives:

Firstly, in some countries, an *assessment, peer review or audit of the National Sustainable Development Strategy (NSDS)* led to the request of restructuring the current or starting a new process towards sustainable development, especially in order to make the NSDS 'fit for purpose' for current and future challenges. Examples are the 2009 peer review of the German NSDS in which the peers suggested a "'Grand Design' that gives form and substance to the transformations needed, and can galvanise and inspire the whole of society to play their part" (p. 20); the Finnish assessment of their NSDS in 2009; and the Court of Audit analysis of the federal SD strategy in Belgium.

Secondly, several countries identify the need to *develop a long-term vision for SD* as driver for sustainability transition. In Belgium, several actors working on the federal SD strategy requested a long-term vision that guides the short-term policy initiatives, and this request was mirrored by the Court of Audits' analysis that recommended adding a long-term perspective to the SD policy cycle. In France, the new national strategy of ecological transition defines a new trajectory by incorporating a long-term vision.

Thirdly, as is the case with many sustainability processes, the need to *address cross-sectoral challenges* is key in many countries. In France, for instance, the new ecological transition strategy sets out a cross-sectoral approach to address inter-related policy challenges and objectives along the economy-environment-society axis. In Austria, the 'Growth in Transition' dialogue links

economic growth and GDP with involved 'side effects' like climate change, biodiversity, and dwindling natural resources.

Fourthly, sustainable transition work was spurred by the need to *achieve an effective policy strategy process*. In Finland, there was a realization that the steering effect of the current NSDS is low and several actors were skeptical about the usefulness of the strategy. Rather than having another horizontal policy strategy, the transformative process 'Society's Commitment to SD' was initiated. In the Netherlands, the government developed the 'National Sustainability Agenda' to achieve a more responsive policy process for achieving SD objectives.

Fifthly, the sustainability transition processes were boosted by recent *environmental, social and economic crises*. In France, the ecological transition strategy aims to respond to current social and economic crises by initiating technological innovation (also enabling efficient natural resource use) and social innovation (fostering new ways of consuming, sharing values, etc.). The Green Deals in the Netherlands respond to socio-economic crisis phenomena by linking growth with an increasing in sustainable production and consumption.

Finally, the *response to the international and European SD policy agenda* is a driver for sustainability transitions in many of the selected countries. Regarding international issues, it is mostly the MDG and post-2015 agenda that influences transition. On the European level, it is the EU-led policy processes (transferring EU Directives into national regulations) as well as the EU policy strategies, Europe 2020 and EU SDS that foster the transition activities.

In general, the NSDS assessments with their call for long-term visions, cross-sectoral engagement, and effective policy processes go back to the late 2000s (e.g. Belgium, Finland, Germany). Most sustainability transition initiatives and activities have started being implemented in the 2010s, with the exception of Austria's 'Growth in Transition' dialogue that has started in 2008. In all country cases, the initiatives and activities are led by national ministries or government bodies, with additional sub-national public initiatives in Belgium.

2.2.2 Approaches inspiring the processes of transition initiatives

First of all, *academic work* has been considered as vital and used as basis for the work on transitions in four of the six evaluated countries. The sustainable development coordination in Finland, for instance, intensively dealt with the work by professor Jan Rotmans and his colleagues. France based its transition works on the following academic work: Richard Wilkinson and Kate Picket with their works on social inequalities as well as Tim Jackson's work 'prosperity without growth'. Belgium's long-term vision relied on a scientific study on participatory prospective methods and the backcasting methodology developed by the Federal Planning Bureau. Austria and Germany did scientific research in the form of scenario and dialogue processes with representatives from academia, focusing on future studies on sustainability (Germany) and growth questions (Austria).

Moreover, *international studies* represent a key source of inspiration for transition initiatives. Finland, for example, considered the following sources for inspiration: Stockholm Memorandum by the Nobel Prize Laureates (2011) and the OECD Environment Outlook 2050. On the other hand, France grounded its transition reference on the founding definition of sustainable development

by the Brundtland Commission in 1987 as well as the recognition of the Right to Environment as a human right from the UNESCO Declaration of Bizakia in 1999 which was imbedded in the French Constitution as Charter for the Environment in 2004. EU strategies, such as the Lisbon Strategy and the EU 2020 related to economic growth were considered as important documents for the Austrian transition process. Germany refers to documents such as "Towards a Green Economy" by UNEP and "Towards Green Growth" by OECD. Moreover, the German Advisory Council on Global Change (WBGU) developed a flagship report, entitled "A World in Transition – A Social Contract for Sustainability" (2011) that serves as pioneer document for the German Grand Design 2050 project as well as for Finland's environmental policies.

Finally, Belgium (at the regional level) and the Netherlands seized their inspiration for transition initiatives from the *private sector in the form of consultation processes*. Belgium made use of experiences in the Netherlands on transition management and in France, whereas the Netherlands extensively consulted the business community before drawing up national transformative initiatives.

2.2.3 Process designing for developing sustainability transition activities

In all six countries that we included in our analysis, the sustainable transition initiatives and activities are *led by national government ministries or national public bodies*. However, all transition activities also show a *high degree of stakeholder involvement* at the development stage. The stakeholders involved come, apart from the national and sub-national public administration, primarily from research, businesses, consultancies, and civil society organizations. The extent of involvement, however, shows some variety among the countries: whereas stakeholders are involved in concrete strategy or activity design stages in Finland, Belgium and France, other countries (like Austria and Germany) involve stakeholders in later stages with less concrete roles in the transition activity. Nevertheless, the broad stakeholder involvement shows elements of *'network governance'*, i.e. the cooperation of autonomous public, semi-public and private institutions in multi-lateral settings to achieve common objectives in a structured manner[18].

Another interesting feature is that *research plays a key role in framing the sustainability transition process* in several countries. In Belgium, for example, scientific experts from the Task Force on SD delivered early inputs into the sustainability visioning process; in Germany, academic research was analyzed and assessed to frame the Grand Design 2050 project; in Austria, two book publications on the 'growth in transition' process were published, including viewpoints from various respected researchers in the field; and in the Netherlands, the Dutch government promotes a systemic approach in research and innovation that aims to guide policy-makers in programing effective research for systemic innovation and multi-level perspectives of socio-technical transitions.

One can also identify *clearer and more wide-ranging development processes in those sustainability transition activities that are related to policy strategies*. For instance, in Finland, a clear, step-by-step development process was set up, incl. definition of political priorities; expert

[18] Provan, K. & Kenis, P. (2007) Modes of Network Governance: Structure, Management, and Effectiveness, Journal of Public Administration Research and Theory, 18:229–252.

workshops; strategy proposal and final document; setting targets and indicators; operational commitments from societal actors; and monitoring process. In Belgium, a similar process with ministerial steering, and expert and stakeholder inputs was set up, including a conference held at the parliament to report to a standing commission on climate and SD.

2.2.4 Involvement of national government ministries and other stakeholder

In five of the selected six countries, *the Ministries of Environment take the lead in sustainability transition processes, but the involvement of other sector ministries varies*. In some countries, although the Ministries of Environment take the lead, *most or all other sectoral ministries are involved* in the design and implementation phases. This is the case, for instance, in Finland, Belgium and France. In Belgium, they have an autonomous Ministry for sustainable development and today, the Federal Institute for sustainable development is still an autonomous public administration and part of the Chancellery of the Prime Ministers. Through the Belgian ICSD, all federal administrations were included in the elaboration of the long term vision. In France, high level sustainable development officers within each national ministry ensure the coordination of the national strategy of ecological transition in an inter-ministerial committee on sustainable development. In other countries, the Ministries of Environment also take the lead in the process, however, the *involvement of the other sectoral ministries is less strong*. In Germany, for instance, the Ministry of Environment is directly involved in the Grand Design 2050 process, while other sectoral ministries were informed, but not integrated in the process. In Austria, the Ministry of Environment oversees the budget and organization of the Growth in Transition dialogue, while other ministries cooperate with dedicated individual public administrators. As for the implementation phase, Austria's Growth in Transition initiative involves a great variety of additional stakeholders and partners, such as three national secotoral ministries, several regional governments, and industry representatives.

All countries in our selection involve a broad set of stakeholder in the sustainability transition activities, ranging from sub-national governments, research, businesses, CSOs, trade unions, minority groups, etc. Some countries, for example Finland, France and Belgium, involve various stakeholder groups through *national sustainable development and environmental councils*. These councils also take a leading or co-leading role in sustainability transition work in these countries. A cooperative role is, in some countries, undertaken by innovation and research institutions. In Finland, the National Innovation Funds (Sitra) and the Technological Innovation Fund (TEKES) are important partners with their respective programs. In Belgium (Flanders), a dedicated research program (Steunpunt SD) is giving scientific input to the transitions initiatives and the public policies. In the Netherlands, the research organization TNO is a collaborator that works on innovations that boost the sustainable competitive strength of industry and well-being of society. In Austria, a research institute (SERI) collaborates for the organization of the events in Growth in Transition and to elaborate content issues.

Some countries have applied *interesting and innovative exchange events and mechanisms to include stakeholder knowledge and views*. In France, for instance, a seminar with experts from academia and international organizations was held and citizens were consulted on the internet about the ecological transition strategy. In Finland, a campaign-like process has been stared to

gather operational commitments from societal actors (incl. schools, individual firms, universities, etc.).

As far as the *differences in the participation of institutions and stakeholders between the design and the implementation phase* is concerned, Belgium identified different participation features while the other countries argue that most stakeholders in the design phase are also involved in the implementation. At the regional level, Belgium identified the following differences: more departments from the Public Service of Wallonia were involved in the implementation phase, the trade unions and some federations are not involved in the implementation phase, and some federations of associations were more involved in the design phase than in the implementation phase.

2.2.5 Concrete objectives and targets of SD transition activities

One can distinguish *two specific ways* in which the selected six countries defined the objectives and targets towards sustainability transition:

Finland, Germany and Austria used the meta-level by *expressing an overall aim of their sustainability transition activities.* For instance, the Finnish 'society's commitment process' aims at building a political consensus framework for the transition in order to make partnerships with key players in the economy and in the Finnish society to operationalize the framework commitment and change lifestyles and everyday practices, starting pilot projects etc. Germany's aim for the Grand Design 2050 project was to answer the question of how a sustainable Germany would look like in 2050 and develop areas of actions correspondingly. While trying to setting up these priority areas, they faced various challenges when dealing with future visions. Therefore, objectives go towards the role of environmental policies for the future vision 2050 and what these policies could contribute to this vision and what role environmental policy has with regard to responsibilities. On the other hand, Austria's Growth in Transition initiative aims at encouraging people to exploit existing opportunities to shape a sustainable economy and the involvement of different levels in order to shape the transition to a sustainable economy.

The other three countries (Belgium, France and the Netherlands) *structured their objectives referring to specific themes.* The federal long-term vision for sustainable development in Belgium is structured along 4 main challenges, 15 themes and 55 objectives. Examples of general objectives are: "Women and men will exercise their rights on a basis of equality. They shall be able to contribute to every aspect of the development of society and to the improvement of living conditions without distinction, exclusion or restriction based on gender"; or "Public health has improved, and will be maintained at a high level. Life expectancy in good health will be increased by comparison with 2010. The education and gender gap in life expectancy in good health will be reduced by an average of 50%." The National Strategy of Ecologic Transition towards sustainable development in France aims at mobilizing the whole society through 9 main cross-sectoral dimensions, such as, for instance, developing sustainable and resilient territories, preventing and reducing environmental, social and territorial inequalities, and inventing new economic and financial models. The Dutch National Sustainability Agenda mentions the target of connecting environmental degradation with socio-economic developments, and to find out how environmental policies can contribute to a more sustainable society, while the Green Deals focus

on the stimulation of sustainable production and consumption in order to connect sustainability with economic growth and the production of sustainable energy.

Only two countries from the selected six refer to international policy initiatives and objectives as direct influence on their national sustainability transition activities: Finland highlights the importance of the post-2015 development agenda and the SDG development as well as climate change mitigation and adaptation policy processes on a UN and EU level. Belgium related the objectives of its long term vision for sustainable development directly to international and EU commitments, such as the EU Energy-Climate package adopted in 2008 and relevant EU Directives.

2.2.6 Process of implementing SD transition activities

Some countries (Finland, France, Germany and Belgium,) issue, as important milestones, progress reports of the implementation of their SD transition activities. While others (Austria, the Netherlands and, again, Belgium,) stress the need for interactive implementation processes, ranging from large-scale international conferences and expert meetings to consultation processes.

As examples for the former, France set up an implementation report on their transition activities for the parliament each year that includes a progress report on indicators associated to the strategy. Furthermore, the importance of voluntary approaches from the actors involved, specific ministries as well as synergies with territorial sustainable development projects and local Agenda 21 are vital for the implementation process of SD transition activities. Interestingly, Germany considers the implementation of SD transition activities still as part of a research project, which should result in an Environmental Program. They are processing the results and thematic insights gained during the Grand Design 2050 Project into this Environmental Program, however, its completion will take some more years. Belgium will also report on a specific set of indicators dedicated to monitor the implementation of its 55 targets which were set up.

As examples of the latter, Belgium considers multi-stakeholder processes for the developing of reports and action plans as relevant. The next federal plan for sustainable development will be set up in 2015 and propose concrete steps for the next five years based on the cooperation between the federal public services. Besides, in 2014, it is planned to foster partnerships for sustainable development in order to engage the civil society towards a transition to the long-term sustainable development goals. Austria is shaping the process of implementation through large-scale international conferences, expert meetings, preparatory work, stakeholder dialogues and small-scale informal discussions in order to facilitate new forms of cooperation and a lively culture of interactions. Another example is the Dutch government that is putting increased emphasis on consensus-style decision making and is attaching great value on the business community's consultation before drawing up national SD policies.

Most countries in our analysis did not outline their timeframes of implementation in detail, therefore, it can be assumed that the implementation of transition activities is an ongoing process. Belgium keeps track of implementation through the 5-years federal plans and monitoring through at least bi-annual progress reports (on the basis of www.indicators.be). However, multi-stakeholder meetings and the development of reports happen usually on a yearly basis.

3 Results from the EDSN workshop on transformative environmental and sustainability policy

The 11th ESDN Workshop, entitled "**Transformative environmental and sustainability policy: new thematic issues, actor constellations and governance modes**", took place in Berlin on 25-26 June 2014. It was organized by the ESDN in cooperation with the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety, and the German Federal Environment Agency. The workshop had the following objectives:

a) **Explore concepts and ways for practical implementation** of "Transformative environmental and sustainability policy";
b) **Reflect on ideas and practical experiences** on new drivers, new thematic issues, new actor constellations and new governance modes for sustainable development;
c) **Provide an overview of experiences** on the above issues in the context of national SD strategies in Belgium, Finland, France, and Germany; and
d) **Discuss the potential to enhance the further advancement** of sustainability strategies and policies on the EU and national level.

In the sub-chapters below, please find a summary of the interactive group discussions of the workshop participants on three of the main areas of the workshop: (i) conceptual challenges and suitable approaches for transformative environmental and sustainability policy; (ii) international and European best-practice processes and strategies; and (iii) ideas for the design of SD strategy processes and projects. The interactive group discussions were undertaken with the support of the 'ideactive' method, developed by IFOK, Germany, a leading international strategy and communications consultancy[19].

3.1 Conceptual challenges and suitable approaches for transformative environmental and sustainability policy

The first area discussed was about conceptual challenges and suitable approaches for transformative environmental and sustainability policy. Four topics were addressed in this area, such as the *i) understanding of sustainability transitions, ii) concepts of sustainability transitions, iii) how relevant social trends are towards transformation, and iv) action fields within transition processes*.

Topic 1: Understanding of sustainability transitions

They expressed the need for a clear language and an anchor for a "transformative talk". The reason for this need is that the scientific approach solely is too conceptual. It is of great importance to talk about the challenges and changes and why a "big change" is needed. The scientific assessment representing the challenges of planetary boundary discussions are useful, but we need an anchor for the transformative talk.

[19] We would like to thank the IFOK team, especially Dominik Zahrnt, for summarizing the break-out session results for all three break-out sessions.

There is a lot of confusion in the use of the terms transition and transformation. Transition does not seem to be an active term because you cannot "transition" something. However, you can turn the noun transformation into the verb "to transform". Nevertheless, the participants wondered, how useful the concept of transition/ transformation is for policy makers, in general.
The workshop participants also raised the question whether conflict is needed to trigger transformation. They also state that for transformations, incremental changes are required which often result in lock-in situations or dilemmas.
The German Energy Turn is a good example and stimulus for transition for different fields. The structure of change is based on industries and the economy. In this sense, transition could mean creative destruction, so that there is still an educated work force and new products and technologies. Therefore, the question arises, how we can create a system that makes best use of appropriate toolkits, like scenarios and systems thinking.
The integration of competing and different worldviews, interests of organizations and societies can help to "process conflicts". On the international level, there are varying approaches and interests being prioritised by various actors. These differences need to be bridged for finding compromises. Similarly, such differences can be found on the individual levels with regard to what governments can and ought to influence, nudge, regulate, etc. The theoretical concepts talk little about the role and influence of competing world views of actors, particularly with regard to world views and values hindering transformations towards more sustainability. Placing today's conflicts between differing interests in a broader long-term change context can contribute to process these conflicts.

Topic 2: Concepts of sustainability transitions

Governments must set standards and empower actors to support initiatives on transition. The SD concept is itself a transformative concept. However, where is the difference between transformative environmental policy and sustainable development? In order to specify this, the challenge is to reorganise the political governance structures. The biggest need for transformation lies in the institutions and they should be the objective of transformation. The steering necessity, that policy needs to do, is to set up dialogue and involve stakeholders and clarify how certain standards and regulations are achieved in practice and how stakeholders are enabled to achieve it.

Inter-ministerial cooperation matters and participants proposed to think about a Ministry of Transformation in order to involve all sectoral ministries. All ministries, including economic and social ministries, for instance, need to define socially agreeable ideas and decide in which ministry SD should be placed in the government. In any case, for having more transformative policies, a lot of policy experimentation as well as leadership and personal interest of politicians is required.

Although steering capacity of governments is limited, it is important to still design a steering process. There is the need for an institutional core which could be the driver behind transformative and environmental policy. However, it remains important, that even steering gets increasingly complicated, it is necessary to tackle this issue, also with experiments. The openness and its experimental nature should be considered as something positive.

Getting media on board might be of big importance because it could fill the gap between political 2050 visions and how to change individuals. The participants argued whether you can produce a 2050 vision and involve all relevant stakeholders and implementation approaches. After envisioning long-term, one has to be open, transparent and inclusive and think of how to do the change. At this point, the media could overtake a vital role in making a change. However, how to get the media in, is an open question and could be dealt with when shaping the future.

Topic 3: Trends for applying sustainability transitions

There are negative and positive trends, depending on the perspective of transformation. It's necessary to differentiate between trends as well as the positive and negative views on their possibilities (e.g. positive effects of demographic change). All trends should be based on the basic main values in society, such as democracy and education. But a reflection on how to deal with a fragmented world should also be undertaken.

Trends should be discussed in relation to SD and their connections should be identified. For instance, we should think about the link between demographic change and environmental issues.

There are important trends, like urbanisation and changing settlement patterns, demography, climate change, energy security and income distribution. The challenge is to direct them to concrete action fields.

Topic 4: Action fields for sustainability transitions

We have to aim to get an inclusive society, especially if transformation means disruption. If we want to make concrete actions, we have to talk about the system and not the sectors. Another action field could be the use of technical applications, such as mobile phones in order to get daily feedback on persons' individual actions with regards to behavior on environmental issues. Recording energy, metering in houses in € and not kW could improve energy use and efficiency.

3.2 International and European best-practice processes and strategies

Participants exchanged ideas and perspectives on the second area which focused on international and European strategies and processes and what we can learn from them in terms of transformation. Within this area*, topics on i) European and non-European strategies and processes as well as ii) challenges and opportunities of using SD strategies as visioning tools* were discussed.

The use for SD visionary processes in different sectors for institutional innovation is important. Societal as well as institutional innovations are needed. Therefore, we need trans-governmental visioning and implementation approach for different logics. There is a monopoly of visionary and transformative processes in the SD sector among other sectors focusing on short-term perspectives. However, besides a long-term vision, you need a pathway to get there and take into consideration concrete steps for the transition. What is also required is avoiding too much generalization and vagueness in a large debate about the vision in practice and on practical steps and elements to get to that vision.

Regarding international processes and vertical integration, UN discussions have envisioning capacity and work with a wide range of objectives, such as the SDGs. However, the national level matters too. Hence, the coherence of national strategies with international processes is important, but very challenging. The link between international and national levels on SDGs requires global commitments, universality and national implementation. International targets might not be that ambitious, so different objectives would allow you to act in the future and provide a framework at the same time.

In terms of the European level, an integrated European strategy has to be part of the national strategy and part of a national implementation process. Therefore, participants call for a revived EU SDS with a new Parliament and Commission, but were wondering whether a new EU Commission and Parliament will revive the process and bring in more SD thinking into their policies. A stimulus for the Brussels agenda would be a new political commitment for a Europe 2050, for instance, in order to make European processes on SD more visible. The challenging part, however, will be to keep up the coherence with the Europe 2020 Strategy, for instance, which was started in 2009.

The identification of "winners" and "losers" is important to avoid blind spots and to adopt differentiated approaches. A framework should be provided how to turn "losers" into "winners". If one looks at the global and regional economy, high fuel prices could be a possible crisis for the international markets. So, there should firstly be a vision for regional markets on fossil-free transportation. There should be no contradiction between regionalized and global economy and the transnational level could also focus on regionalized economy which could help to stay competitive. However, if you talk about competition, there will be always someone who loses and we have to solve that issue.

Combining operational commitments with partnerships as a way to keep SD processes interesting even after 20 years. Therefore, it is important to use what really works and to put emphasis on that in order to actually achieve an impact. Strategies need to be discussed not only in the machinery of policymaking, but also in society, so that they have legitimacy.

3.3 Ideas for the design of SD strategy processes and projects

Finally, the third area discussed was on the design of processes and projects that generate new ideas for strategies and was meant to inspire participates for discussing and exchanging what they have learned from the foregoing academic presentations, but also from the national country insights on transition sustainability policies. Two topics shaped the discussions*: i) Grand Design recommendations to highlight,* and *ii) designing processes and projects referring to practical recommendations and experiences.* The results of the discussion were marked by following statements of the participants:

Setting the emphasis on visions and levers, also in terms of conflicts of goals, is important while designing SD transition processes. Mechanisms to deal with the conflicts of goals should be integrated in the strategy. For instance, if you look at the German NSDS, you have a couple of goals of different fields put together as a picture as if all would go hand in hand together. What is lacking, however, are the mechanisms which deal with the conflicts of these goals. It is important

to integrate the conflicts of the set goals into the strategy. Hence, a strategy should identify and address the conflicts of goals in order to integrate conflict solution models that deal with crosscutting conflicts. There is no “gold standard” for these processes, since there are also competing visions of the future for different parts of society based on different scenarios. However, levers and structures which shape the future should be discussed to find common ground.

Inter-ministerial and inter-departmental cooperation is important in order to create monitoring power for SD coordination. On the practical level, it can be difficult to find agreement among different departments, so consensus has to be built. Jointly developed and agreed negative visions of what is wrong could be a starting point. The exercise to agree on what does not work well could be a good starting point for further agreements. Furthermore, cross-ministerial formulation of policies should be broadened and there should be a procedure in place for the drafting of legislation which follows a completely different path. Additionally, the need for a coordinator and process manager for the SD strategy was identified by the workshop participants. The coordinator of the national SD strategy, for instance, should have a legal mandate to monitor other sectors because soft power is not enough. Whereas the process manager should be responsible for the processes proposed in the strategy.

Developing SD strategy processes, in general requires, an institutional set-up for targets. When discussing future visions, we generate a lot of knowledge, but how we can make SD “sexier” and deliver it to individual citizens is an issue to be considered. It is of great importance to organize deliberation processes and find opportunities for processes as well as public commitment. Moreover, there should be room for the institutional set-up in order to provide space for expertise and practices as well as new solutions.

Creating open space to discuss and agreement is an experimental recommendation, especially on the design of SD transformative processes. An example would be informal meetings as engines of ideas outside of the usual structures to get back to grand ideas and find agreements on conflicting topics. Open space means talking openly and building trust. However, in order to build trust, a pre-phase of knowing each other is suggested. This pre-phase could consist of small, informal meetings of up to 40 people to discuss issues, problems and challenges. The aim of these meetings should be to create new approaches and commitments. An institution to facilitate the bottom-up processes could be also considered as a so-called open space, like a clearing house, for instance.

4 Reflections and conclusions

In this closing chapter, our intention is to briefly reflect on the main points touched in the three chapters and to offer three points for further reflections on sustainability transitions and transformative environmental and sustainability policies.

First, 'transitions' are defined as **transformation processes in which society changes in a fundamental way over a generation or more**. A transition is, therefore, a gradual, continuous process of change where the structural character of a society (or a complex sub-system of society) transforms. Furthermore, transitions involve far-reaching changes along different dimensions (technological, material, organizational, institutional, political, economic, and socio-cultural), a broad range of actors, and typically unfold over considerable time-spans (e.g., 50 years and more).

For a **sustainability transition** to occur, ***the transition and the involved radical and incremental systemic changes need to happen on a variety of levels (multi-dimension) and on an array of systems (i.e. energy, food, mobility, production and consumption, etc.), which will co-evolve following the premises of sustainable development***. In this sense, sustainability transition can be defined as a change to a fundamentally different regime with radical changes in numerous domains of human societal structures. In terms of barriers and obstacles to sustainability transitions, one can mainly identify those mutually reinforcing processes that lead to lock-in situations or path-dependent developments and entrapment.

In governance terms, the **transition management approach** may be an important tool for facilitating sustainability transitions. The key elements of transition management are represented by: (1) *system-thinking* (multi-domain, multi-actor, multi-level); (2) *long-term thinking* (at least 25 years) as a framework for shaping short-term policy; (3) *back-casting and forecasting*; (4) *a focus on learning*; (5) *an orientation towards system innovation and experimentation*; (6) *learning about a variety of options*; and, (7) *participation by and interaction between stakeholders*. A '**Transition Management Cycle**' has been proposed that is represented by a cyclical process model following four main blocks:

1. Structure the problem in question, develop a long-term sustainability vision and establish and organize the transition arena;
2. Develop future images, a transition agenda and derive the necessary transition paths;
3. Establish and carry out transition experiments and mobilize the resulting transition networks;
4. Monitor, evaluate, and learn lessons from the transition experiments and, based on these, make adjustments in the vision, agenda, and coalitions.

Second, in the report we offered an analysis of International initiatives and national experiences in European countries in the context of sustainability transitions. From this analysis we can highlight **five main characteristics**:

a) The role of academic research is prominent in the national activities, but not so evident in the international initiatives;

b) Most of international and national initiatives on sustainability transitions were triggered by different kinds of crises (i.e. economic, social, environmental);
c) Broad stakeholders involvement is crucial and was found as a prominent part of most of the initiatives;
d) National governments played a key role in this processes, especially through steering efforts and mechanisms, and during implementation steps;
e) A strong need for monitoring is acknowledged in several initiatives that mentioned, for instance, milestones or referred to mid-term goals.

Third, the discussions among participants of the 11th ESDN workshop revealed several issues in three main areas: (1) ***understanding sustainability transitions***; (2) ***governance for sustainability transitions***; (3) ***lessons learnt from International and European experiences***.

With respect to ***understanding sustainability transitions*,** the participants mainly pointed out the *need for a clear language and an anchor for a "transformative talk"*. Whilst the scientific approach alone was felt as too conceptual, participants pointed out the necessity to talk also about policy changes towards sustainability transitions. Extremely important was also a debate on whether conflict is needed to trigger transformation. Participants also stated that for transformations, incremental changes are required but often result in lock-in situations or dilemmas. In this context, the integration of competing and different worldviews, interests of organisations and societies was suggested as helpful to "process conflicts".

The second area, ***governance for sustainability transitions***, mainly highlighted six important messages:

a) Governments must set standards and empower actors to support initiatives and support the transition;
b) Inter-ministerial cooperation matters and a Ministry of Transformation might coordinate all sectoral ministries on the transition trajectory;
c) Although steering capacity is limited, it is important to still design a steering process;
d) Getting media on board might be of high importance especially for engaging individuals;
e) Combining operational commitments with partnerships as a way to keep SD processes interesting even after 20 years is needed; and,
f) Creation of open space for discussion through, for instance, informal meetings outside of formal/institutional structures.

With regards to ***lessons learnt from international and European experiences***, participants mainly found that the use for SD visionary processes in different sectors for institutional innovation is important: societal as well as institutional innovations are needed. Furthermore, the identification of 'winners' and 'losers' was seen as crucial to avoid blind spots and to adopt differentiated approaches: a framework should be provided how to turn 'losers' into 'winners'. At the same time, setting the emphasis on visions and levers also in terms of conflicts of goals was regarded as a key action: mechanisms to deal with the conflicts of goals should be integrated in the SD strategy.

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