

# **Pursing Green Growth in the STRING Region**

A Participative Approach towards a Green Growth Strategy

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## **Abstract**

‘Green growth’ is a concept that has gained credence in the literature and wider policy-making circles, broadly referring to the implementation of policy and development strategies that encourage economic growth whilst ensuring that environmental wellbeing is maintained and / or improved. However, few examples of ‘green growth strategies’ have been produced to date, and the literature is sparse regarding methodologies for developing an appropriate strategy. This study has investigated the use of a participative and iterative ‘Action Research’ approach towards developing a Green Growth Strategy that caters for varying stakeholder needs and objectives.

The approach utilised the STRING Region, an inter-regional association with five regional partners from Denmark, Germany and Sweden, as a case study for the development of a framework for producing a Green Growth Strategy. The study found that the Action Research approach was useful in achieving the objectives of generating conditions that encourage implementation of green growth objectives, aligning regional policy directions with green growth objectives and wider EU goals, and facilitating engagement with identified stakeholders. However, a key finding was that sufficient time and resources should be allocated to ensure that consultation with stakeholders can be best facilitated.

**Keywords:** Green growth, action research, stakeholder engagement, STRING

# Executive Summary

## *Overview*

Economic growth is widely regarded as a key precondition for social stability and improving living standards. Yet the negative impacts that traditional patterns of economic growth have had on the environment and society lie in stark contrast to achieving these goals. In order to address these impacts, international organisations and national governments alike have begun working towards adopting more sustainable approaches to growth that account for environmental and social considerations. It is within this context that the concept of green growth has been developed.

While no universally-agreed definition for ‘green growth’ exists in the literature, the term is broadly accepted to refer to the implementation of policy and development strategies that encourage economic growth whilst ensuring that environmental wellbeing is maintained and / or improved. To this end, green growth (or a related term) has been adopted by a growing number of international and national administrative bodies. The term has become especially pertinent for governments looking to improve economic prospects in the face of the on-going financial crisis and amid rising scientific and societal concern on climate change. As an example, the European Union (EU) has embedded the green growth-related concepts of sustainable, smart and inclusive growth in the ‘EU2020 Growth Strategy’ as a central driver of more environmentally-responsible economic development. This strategy also drives national and regional growth agendas.

## *Project Background – A Green Growth Strategy for the STRING Region*

One of the key challenges in achieving green growth is developing a strategy to achieve the objectives of improved environmental and social consideration in economic activities. As the concept is relatively recent, there are few guidelines on exactly how to develop a ‘Green Growth Strategy’ (GGS). From a basic perspective, a GGS should provide a vision for green growth that defines the concept and its objectives, selects which economic sectors it will focus on, and identifies which policies would effectively deliver green growth. The involvement of stakeholders in the GGS development process will also be crucial to the long-term success of the GGS. The outcome of the GGS should be a suite of environmentally-responsible policy instruments for green economic growth that can successfully be implemented within a given regulatory environment. To this end, the aim of this thesis is to apply a framework for the development of a GGS that achieves the above objectives.

In northern Europe, the STRING Partnership is a recent association of that represents the ‘STRING Region’ (also referred to as the ‘Fehmarnbelt Region’), comprising the sub-national administrative regions of Sjælland (Eng.: *Zealand*) and Hovedstaden (Eng.: *Capital Region*) in Denmark, Schleswig-Holstein and Hamburg in Germany, and Skåne (Eng.: *Scania*) in Sweden. The STRING Partnership is intended to support economic growth and development in and between the Regional Partners by collaborating on joint development strategies. One of the ways in which the STRING Partnership intends to achieve this goal is by developing a GGS for the STRING Region.

## *Thesis Objectives and Research Approach*

The focus problem for this thesis is that the STRING Partnership wishes to develop a strategy for green growth across the STRING Region, but:

- a) no approach or framework for developing a GGS has been identified in the literature,
- b) it is not clear exactly how green growth relates to the various participants in the STRING Partnership, and
- c) limited stakeholder engagement has been pursued in the development of the green growth concept.

To this end, three key study objectives have been identified:

*Study Objective 1* – Determine whether a participative and iterative method is suitable for generating the conditions that ensure green growth objectives are implemented.

*Study Objective 2* – Examine the policy directions of the various administrative bodies operating within the STRING Region and align these with green growth objectives and wider EU goals.

*Study Objective 3* – Facilitate the involvement of potential stakeholders in the development of the GGS for the STRING Region.

Given the focus problem and study objectives delineated above, the aim of this thesis is to develop and apply a participative and iterative approach towards the development of a GGS, using the STRING Region as a case study. To better assess whether the approach is indeed appropriate, it will be applied to a number of the initial research component steps towards the development of a GGS for the STRING Region, including a review of the literature on green growth, defining the scope of stakeholder engagement, the development of a common definition and identification of the various sectors that the strategy shall address. This has been summarised into the following Research Question:

“How can a participative and iterative approach be applied in the development of a Green Growth Strategy that caters for varying stakeholder needs and objectives?”

The research approach adopted in this thesis is ‘Action Research’ (AR), an interactive inquiry process that balances problem-solving actions implemented in a collaborative context with data-driven collaborative analysis or research to understand underlying causes and enable future predictions about personal and organisational change. The AR approach being applied herein is utilised in two key contexts: as a research approach utilised within the proposed GGS Development Framework, and to support the development of a GGS for the specific case study of the STRING Region.

Based on the tasks identified in the framework and the thesis time requirements, the following four key tasks for the thesis case study of the STRING Region were undertaken:

- Task A) *Literature Review*
- Task B) *Stakeholder Identification and Engagement*
- Task C) *Definition of Green Growth for the STRING Region*
- Task D) *Identification of Green Growth Sectors*

## ***Results and Conclusions***

This thesis generated a novel framework for the development of a GGS that uses a participative and iterative AR approach as a basis for stakeholder engagement. The proposed GGS Development Framework was designed to deliver progressively more specific outcomes that contribute towards the completion of subsequent tasks. This was paired with an AR

approach that permitted the author to actively participate in and guide the GGS development process. The overall assessment of this thesis is that the GGS Development Framework and the use of the AR approach is well suited for the development of a GGS in a number of ways. These are centred around the AR approach's collaborative but researcher-driven nature, complementarity with existing policy development processes, flexibility in terms of the how each step can be fulfilled, and focus on participation at both an administrative level as well as from a wider stakeholder perspective.

The case study within the STRING Region showed that the AR approach succeeded in generating initial conditions for green growth to be implemented, identifying opportunities to align the regional objectives of the various administrative bodies, and facilitating stakeholder engagement with the concept of green growth. The development of a literature review and planning on stakeholder engagement were central to the success of later consultations on the development of a green growth definition and identification of sectors. Further, the consultative approach on the definition and sectoral identification was important in ensuring that regional objectives can be appropriately aligned in later stages of the GGS Development Framework process.

In relation to the three Study Objectives identified, the AR approach adopted in this thesis was deemed to be very well suited towards generating conditions for the successful implementation of green growth objectives. AR provides a participative and qualitative methodology for achieving consensus that would arguably be difficult to replicate using a quantitative experimental research approach. The methodology adopted provided a logical framework for ensuring stakeholder participation towards achieving consensus on green growth that largely mirrors policy-making processes used in the regions. The policy directions of the administrative participants in the STRING Region were also found to be fairly well aligned with those of the EU broadly and the objectives of green growth. While the various administrations did put emphasis on slightly different key concepts and sectors based primarily on their perceived and desired core competencies, these emphases were on balance fairly similar across the STRING Region. Finally, consultation with and the involvement of stakeholders in the development of the GGS was deemed to be broadly successful in the STRING Region case study. The AR approach and the use of the AA1000SES standard for stakeholder engagement was useful in ensuring stakeholder involvement was pursued in a rational and inclusive manner. Importantly, participants indicated a willingness to compromise on the types of issues to be covered in the final GGS.

However, some problematic issues were identified. While political desire for working participatively towards addressing environmental and social issues was present at all administrative levels, a key difficulty was ensuring that stakeholders remained engaged with the process without requiring an excessive stakeholder time commitment. Another problematic issue was involving wider, non-administrative stakeholders in GGS development process prior to establishing political contact and setting a clear frame of reference. While potential broader stakeholder groups were not consulted in this study, future iterations have been predicated on the idea of expanding the process to include wider participation. Balancing these issues proved difficult due to a number of administrative and political factors, as well as study time constraints. However, the AR approach permitted the researcher to quickly adapt to problems and offer solutions that accounted for the varying views held by stakeholders. As such, future research should finalise the remaining iterations of the AR approach in the STRING Region, and investigate the potential for the GGS Development Framework to be applied in other administrative settings.



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## 1. Introduction

Economic growth is widely regarded as a key precondition for social stability and improving living standards. Yet the negative impacts that traditional patterns of economic growth have had on the environment and society lie in stark contrast to achieving these goals. In order to address these impacts, international organisations and national governments alike have begun working towards adopting more sustainable approaches to growth that account for environmental and social considerations. It is within this context that the concept of green growth has been developed.

No universally-agreed definition for ‘green growth’ (and the inter-related term ‘green economy’) exists in the literature<sup>1</sup>. Nonetheless, the term is broadly accepted to refer to the implementation of policy and development strategies that encourage economic growth whilst ensuring that environmental wellbeing is maintained and / or improved (GGL, 2011b; OECD, 2011; UNEP, 2011b; WB, 2011). Proponents argue that green growth is needed to provide a pathway to more environmentally-sound economic practices, before the world gets locked into production and utilisation patterns that would be prohibitively expensive and complex to modify (WB, 2011). To this end, green growth (or a related term) has been adopted by a growing number of international and national administrative bodies. The term has become especially pertinent for governments looking to improve economic prospects in the face of the on-going financial crisis and amid rising scientific and societal concern on climate change.

The European Union (EU) has embedded the concepts of sustainable, smart and inclusive growth in the ‘EU2020 Growth Strategy’ as a central driver of more environmentally-responsible economic development, the implementation of which has been made all the more urgent in the context of the recent economic crisis. Considerable focus has been put into encouraging such growth both within EU member states as well as between them. In northern Europe, significant funding for sustainable regional development and regional co-operation is channelled through the ‘Interreg’ programme, an EU-funded initiative to improve economic and social cohesion in and between EU member states. Several inter-regional associations have arisen from this funding, such as the Öresund Committee (*Öresundskomiteen*) and the STRING<sup>2</sup> Partnership. The STRING Partnership is of significant interest as they have specifically committed to achieve green growth within their Regional Partners.

One of the key challenges in achieving green growth is developing a strategy to achieve the objectives of improved environmental and social consideration in economic activities. As the concept is relatively recent, there are few guidelines on exactly how to develop a ‘Green Growth Strategy’ (GGS). From a basic perspective, a GGS should provide a vision for green growth that defines the concept and its objectives, selects which economic sectors it will focus on, and identifies which policies would deliver green growth. The involvement of stakeholders in the GGS development process will also be crucial to the long-term success of the GGS. The outcome of the GGS should be a suite of environmentally-responsible policy instruments for green economic growth that can successfully be implemented within a given regulatory environment. On this front, numerous green growth policy directions and instruments have been identified by a variety of international organisations and national governments.

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<sup>1</sup> For the purposes of this paper, the terms “green growth” and “green economy” are considered to be broadly equal in scope (see GGL, 2011b; OECD, 2011; UNEP, 2011b) and the former term is used from henceforth unless the latter is specifically mentioned in a quoted text.

<sup>2</sup> The STRING acronym stands for **S**outh-Western Baltic Sea **T**rans-**R**egional Area – **I**nventing **N**ew **G**eography.



Figure 1-1: Map of STRING constituent regions, indicating the two core transportation linkages<sup>3</sup>.

Given the above context, the overall purpose of this thesis is to assess the effectiveness of applying a participatory approach for the development of a GGS. More specifically, the thesis will test the approach by preparing a framework for developing a GGS designed for the STRING Region. To provide a better overview of how this shall be achieved, the following sections provide a background to the present project (Section 1.1), the focus problem (Section 1.2), an in-depth description of the study objectives (Section 1.3), the research question used to frame the study (Section 1.4), and the limitations of the study (Section 1.5).

## 1.1 Project Background

The STRING Region (also referred to as the Fehmarnbelt Region) comprises the sub-national administrative regions<sup>4</sup> of Sjælland (Eng.: *Zealand*) and Hovedstaden (Eng.: *Capital Region*) in Denmark, Schleswig-Holstein and Hamburg in Germany, and Skåne (Eng.: *Scania*) in Sweden (Figure 1-1; Table 1-1). The STRING Region has been promulgated as part of the activities of the STRING Partnership, an Interreg-funded strategic inter-regional association initiated in 1999. The STRING Partnership is intended to support economic growth and development in and between the Regional Partners by collaborating on joint development strategies.

<sup>3</sup> Image derived from Oceans Basemap on ArcGIS Explorer Online (see citation *Oceans Basemap [map]*, in reference list).

<sup>4</sup> A 'region' in this case refers to a sub-national administrative division usually referred to as a Region (in Denmark and Sweden) or a Federal State (in Germany).

The basis for the formation of the STRING Region is the development of the ‘Fehmarn Belt Fixed Link’, a planned tunnel beneath the Fehmarnbelt (Dan.: *Femernbalt*), an 18km-wide passage between the German island of Fehmarn and the Danish island of Lolland. The other important linkage in the region is the existing Öresund Bridge that connects the Danish capital Copenhagen to the Swedish town of Malmö in Skåne. Once the Fehmarn Belt Fixed Link is constructed, the two connections will form a key transportation corridor linking northern Germany to Sweden via Denmark.

From 2009 to 2011, the STRING Partnership made a declaration, action plan and agreement detailing a common vision for the region and the key areas of action that the Partnership will focus on in the future. A key element of these agreements was a vision to implement a ‘green growth corridor’ for the STRING Region (STRING, 2011). However, exactly what this entails and a plan for achieving it is absent in these strategic documents. Further, the recently-appointed director of STRING, Jacob Vestergaard, has prioritised the development of a GGS as a key organisational goal.

Beyond the Regional Partners involved in the STRING Partnership, one additional organisation of note that operates within the context of the STRING Region is the Öresund Committee (Table 1-1). The Öresund Committee is a regional platform for political co-operation that was formed in 1993 to represent the interests of the Öresund Region, made up of representatives from regional and municipal administrations in Region Hovedstaden and Region Sjælland in Denmark and Region Skåne in Sweden. One of the key reasons that the Öresund Committee is important is that it represents a successful inter-regional co-operation which can be used as a template for expanding key lessons learnt into the STRING Region. The Öresund Committee is also currently preparing a strategy for the Öresund Region to 2025 that provides an opportunity to synergise with a STRING GGS.

Table 1-1: Key stakeholders in the STRING Region.

Stakeholder	Type of Organisation	Areas Represented
Region Hovedstaden (D)	Administrative Region	29 municipalities across Copenhagen, Frederiksberg and Bornholm
Region Sjælland (D)	Administrative Region	17 municipalities within the islands of Sjælland, Lolland, Falster, Møn + several smaller islands (but excluding Region Hovedstaden)
Federal State of Schleswig-Holstein (G)	Administrative Region	15 municipalities comprising 11 districts and four urban districts
Federal State of Hamburg (G)	Administrative Region	Seven boroughs of Hamburg
Region Skåne (S)	Administrative Region	33 municipalities
Öresund Committee	Inter-regional Association	Region Hovedstaden (D) and Region Sjælland (D), including representatives from Copenhagen, Frederiksberg and Bornholm municipalities as well as Greater Copenhagen Forum for Local Municipalities and Local Government Regional Council of Sjælland; and Region Skåne (S), including Malmö, Helsingborg, Lund and Landskrona municipalities
STRING Partnership	Inter-regional Association	Region Hovedstaden (D), Region Sjælland (D), Region Skåne (S), and Federal States of Schleswig-Holstein (G) and Hamburg (G)

Note: Key to national designations: (D) – Denmark, (G) – Germany, (S) – Sweden.

A related and important aspect for green growth in the STRING Region is the desire of administrative stakeholders to implement “green” transportation corridors. The concept of a green transport corridor has been discussed in the region for a number of years. Since 2007 it has been integrated into EU transport policy and funding programmes (Engström, 2011). It has been actively pursued by inter-regional organisations, such as the ‘Agreement on Joint Green Corridor Activities’ between the Government of Sweden and several EU-funded transnational territorial co-operations (GoS, 2010a), as well as at national levels, a good example being the Swedish ‘National Initiative to Green Corridors’ that began in 2008 (Engström, 2011). This focus on green transport corridors is relevant to the present undertaking as it provides a reference point for discussions on wider green growth objectives.

Green growth can only be achieved if political motivation exists to institute such growth in the various administrative frameworks (i.e. EU, national, regional, inter-regional) within which the individual regions of the STRING Region operate. This motivation exists at numerous levels. Firstly, Europe’s EU2020 growth strategy serves as a suite of policy directions seeking to institute various aspects of green growth within each member state. Secondly, each member state which is covered by the STRING Region has already developed an agenda that, directly or indirectly, aims to achieve aspects of green growth within their economy. Thirdly, each regional administration in the STRING Region has been tasked at the national level to pursue growth, and these administrations have already indicated that environmentally and socially responsible growth is central to their economic objectives. Finally, it is the stated goal of both the STRING Partnership and the Öresund Committee to implement green or climate-friendly growth within the Regional Partners.

## 1.2 Focus Problem

The focus problem to be summarised from the contextual information provided above is that the STRING Partnership wishes to develop a strategy for green growth across the STRING Region, but:

- a) no approach or framework for developing a GGS has been identified in the literature,
- b) it is not clear exactly how green growth relates to the various participants in the STRING Partnership, and
- c) limited stakeholder engagement has been pursued in the development of the green growth concept.

## 1.3 Study Objectives

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*Study Objective 1* – Determine whether a participative and iterative method is suitable for generating the conditions that ensure green growth objectives are implemented.

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The first reason why an investigation into the development of a GGS is needed is that there are very few examples of a successful process for developing a GGS. This thesis will firstly serve to investigate a participative and iterative method for interacting with the involved parties. The reason for utilising such an approach is to ensure that each participant considers that their individual organisational goals are being met, whilst at the same time pursuing stakeholder ‘buy-in’ for the concept of green growth by the competent authorities and wider stakeholders, and selecting appropriate green growth objectives for the regions individually and as a whole. If these conditions are not met, it is unlikely that the GGS will be



implemented. It is therefore necessary to assess how appropriate a participative and iterative method is for generating the conditions for green growth.

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*Study Objective 2* – Examine the policy directions of the various administrative bodies operating within the STRING Region and align these with green growth objectives and wider EU goals.

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A second reason for the study is that the various Regional Partners and inter-regional co-operations within the STRING Region are interested in understanding how green growth might be implemented within their individual and combined regions. The need for a GGS is clear: with a population of around 8.5 million and substantial industrial, transport and agricultural sectors, there are many ways in which the STRING Region stands to gain from better co-ordination in environmental stewardship. A GGS would serve to develop a common vision for green growth, identify sectors where green growth may be pursued, and provide a clear set of policy directions and instruments for achieving green growth in the STRING Region.

Further, the study will generate a concept of green growth for the STRING Region that better aligns the objectives of the STRING Partnership with those of potential funding bodies. Chief amongst these is the EU. Sustainable growth, smart growth and inclusive growth are three of the four key priorities of Europe’s EU2020 growth strategy. Arguably, green growth can be said to encompass each of these priorities (see Figure 1-2). A GGS would therefore be useful to the STRING Partnership and the Regional Partners in aligning and achieving EU2020 priority objectives, and consequently increase the likelihood of accessing funding opportunities - most notably those operated by the EU and European Commission (i.e. Interreg, TEN-T<sup>5</sup>, CAP<sup>6</sup> etc.). It would also aid the STRING Partnership in maintaining

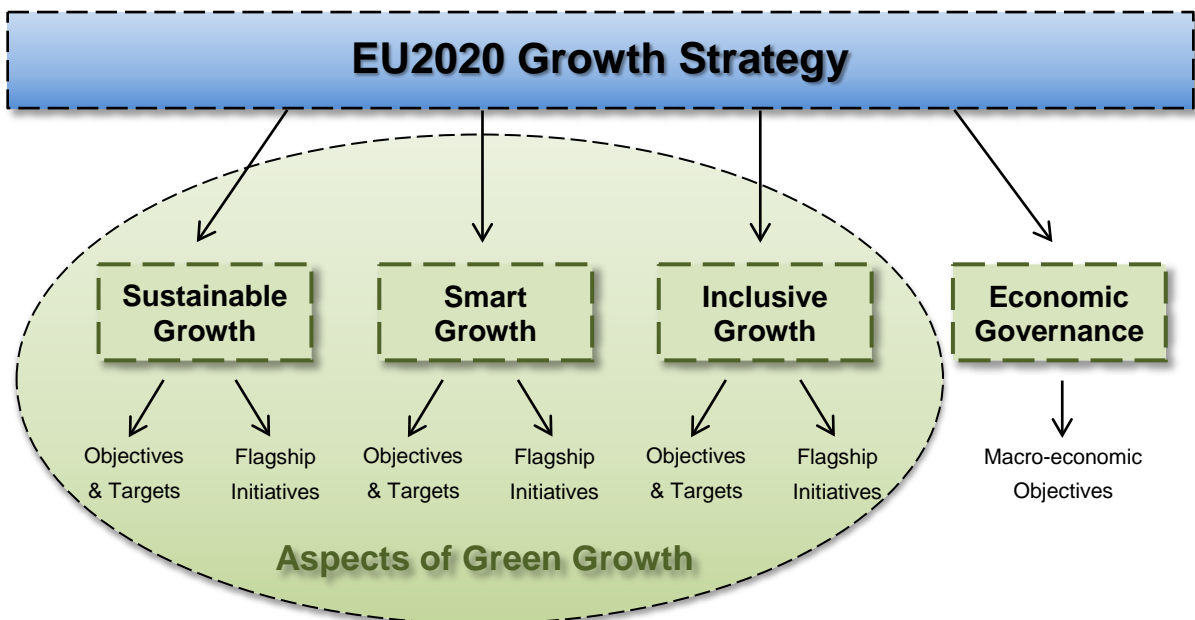


Figure 1-2: Aspects of green growth present within the four key priorities of the EU2020 growth strategy.

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<sup>5</sup> ‘Trans-European Transport Network’, an EU-wide programme of funding for transportation projects.

<sup>6</sup> The ‘Common Agricultural Policy’, an EU-wide programme of funding and subsidies with considerable focus on sustainable rural development.

legitimacy and relevance through assisting each Regional Partner in selecting and implementing policy that contributes to achieving EU and national environmental goals, such as climate change commitments. This study will therefore serve to examine the existing policy directions of the Regional Partners involved in the STRING Region in order to ensure that recommendations in the GGS are more likely to be implemented, and identify opportunities to align the environmental and economic goals of the participating organisations at each level of the GGS development process.

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*Study Objective 3* – Facilitate the involvement of potential stakeholders in the development of the GGS for the STRING Region.

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Finally, the present study is needed to develop a common vision for green growth across the STRING Region. This requires liaison and co-ordination between a variety of stakeholders if green growth is to be successfully implemented. Stakeholder involvement, properly carried out, is important as it can enhance the quality of environmental decisions; governments build trust, reduce anxiety or hostility to measures, build strategic alliances and gain legitimacy of decisions, while citizens have access to decision-making processes and are educated as to the advantages and disadvantages associated with various options (Reed, 2008; Santos *et al*, 2006). Stakeholders in this instance can be defined as persons or groups who are directly or indirectly affected by a project, as well as those who may have interests in a project and / or the ability to influence its outcome, either positively or negatively (IFC, 2007). Beyond the Regional Partners, stakeholders of relevance to the GGS may include the various governance levels in Denmark, Germany and Sweden (municipal, national and other external regions), the EU, non-governmental organisations, academic institutions and businesses. The study will therefore act to facilitate stakeholder engagement in the development of a GGS.

## 1.4 Research Question

Given the focus problem and study objectives delineated above, the aim of this thesis is to develop and apply a participative and iterative approach towards the development of a GGS, using the STRING Region as a case study. To better assess whether the approach is indeed appropriate, it will be applied to a number of the initial research component steps towards the development of a GGS for the STRING Region, including a review of the literature on green growth, defining the scope of stakeholder engagement, the development of a common definition and identification of the various sectors that the strategy shall address.

Given the described context, the following research question has been postulated:

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*Research Question* – “How can a participative and iterative approach be applied in the development of a Green Growth Strategy that caters for varying stakeholder needs and objectives?”

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## 1.5 Limitations of Study

The scope of this study is limited in several ways. A central assumption of this thesis is that a GGS for the STRING Region is necessary and desired. Consequently, this thesis does not enter into a fundamental debate on whether green growth is actually possible in the region or how much additional growth will be derived. A substantial and growing body of literature is devoted to this discussion, on which the literature review within this thesis provides a detailed summary. Similarly, this thesis does not attempt to carry out an economic analysis of the level

of green growth to be achieved by a given set of policies or within a set of sectors. This would be the focus of a future specialist analysis that will not comprise part of this study.

The GGS Development Framework, including the green growth definition and sectors developed as part of this study, has been produced specifically for the STRING Region and consequently may not relate directly with frameworks used in other countries or regions. Further, the economic sectors identified within this study at the time of thesis submission have been those that were identified from either regional documentation within the STRING Region or from broader literature on green growth sectors. As a result, new sectors that may be identified in the future are excluded from the study.

Finally, the stakeholder views presented in this study are limited to participants identified and engaged through the stakeholder engagement process. Importantly, any opinions raised by representatives of competent authorities during consultations or communications *should not* be considered official political commitments of the authority in question; these are considered to be the informed opinions of the representative(s) in question only. Municipalities shall be excluded from the study as they have a less prominent role in setting sectoral planning agendas, and time constraints did not permit full consultation of the various affected municipal administrations.

## 2. Research Design and Methodology

### 2.1 Research Design

#### 2.1.1 Green Growth Strategy Development Framework

In order to develop a suitable approach for developing a GGS for the STRING Region, it is important to identify an overall framework of tasks towards a GGS that will be used. At the time of publication of this thesis, no existing framework for developing a GGS was identified in the literature. It was consequently necessary to develop a novel framework. A key aspect of the novel framework was to ensure that it was logical and, as far as possible, compatible with existing policy-making procedures used by STRING Regional Partners. To this end, it was decided that the framework should be based on delivering progressively more specific outcomes that contribute towards the completion of subsequent tasks.

The proposed ‘GGS Development Framework’ identifies eight tasks that need to be undertaken in order to successfully prepare the GGS, and is shown in Figure 2-1 below. The framework starts with a review of the literature in order to develop a basis for rationalising the green growth concept. The next task is to determine which stakeholders should be involved and develop a plan for their involvement. From this, a common vision for what green growth actually entails is produced in consultation with identified stakeholders. Next, the sectors within which green growth will be pursued are identified based on the strategic directions of the involved administrative bodies and the literature. These green growth sectors are then subjected to an analysis that establishes the economic and environmental issues associated with each sector, and identifies potential opportunities and challenges to green growth in the context of the STRING Region. The potential areas for green growth are subsequently further analysed in terms of the types of policies available to deliver green growth. After this, a suite of indicators for measuring progress towards green growth are identified. Finally, an

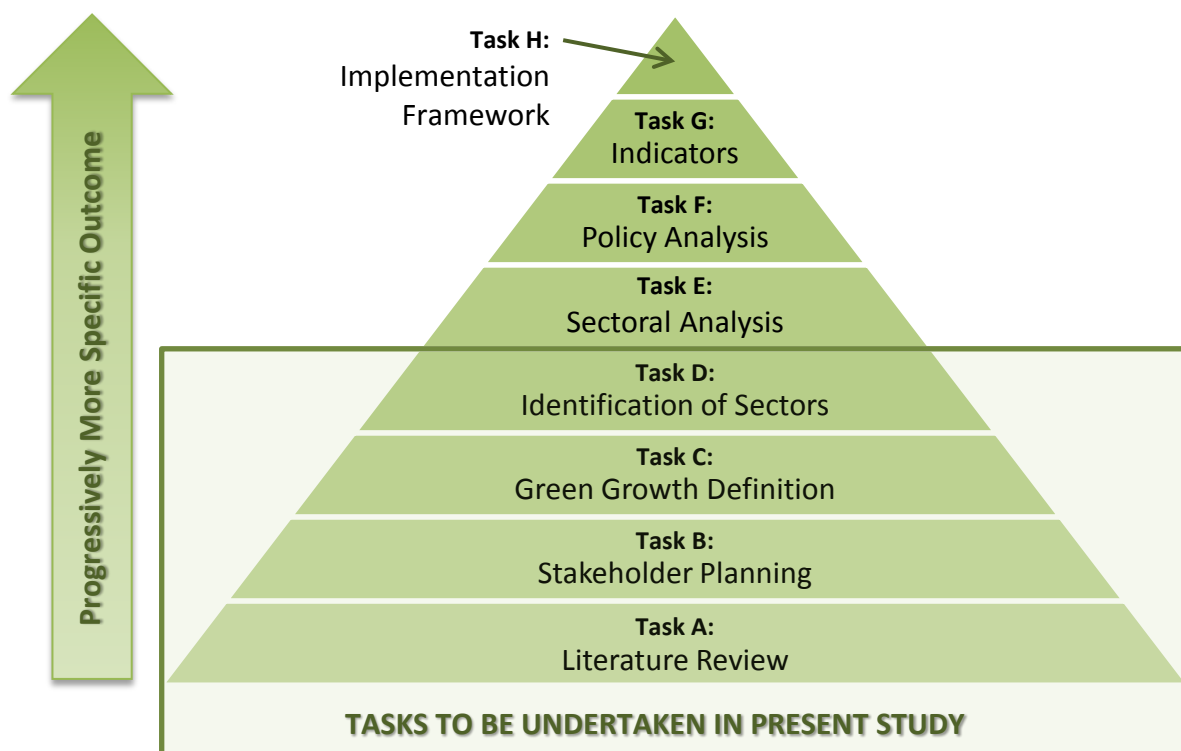


Figure 2-1: Proposed Green Growth Strategy Development Framework, showing the tasks to be undertaken in the present study.

implementation framework is developed that clearly lays out the actions required and proposed timetable for implementation in each Regional Partner to achieve green growth.

The final output of the GGS Development Framework would be a ‘Green Growth Strategy for the STRING Region’ that will document the overall GGS development process and present the findings of each of the tasks identified above. A further output midway through the GGS Development Framework process will be a ‘Preliminary Framework for the Green Growth Strategy for the STRING Region’ document that will present the key findings of the work undertaken as part of the thesis study.

Given that the overall GGS Development Framework has not previously been applied, it was unclear how many tasks would be achievable within the thesis timeframe. Based on the tasks identified in the framework and the thesis time requirements, a logical flow of the following four key tasks for the thesis was developed as follows:

- Task A) *Literature Review*  
Delineate the main interpretations of green growth and related terms from a review of the relevant available literature, and identify similar or differing interpretations of green growth in the relevant administrative bodies.
- Task B) *Stakeholder Identification and Engagement*  
Develop a plan for the identification of key stakeholders and engagement with them on the development of a GGS.
- Task C) *Definition of Green Growth for the STRING Region*  
Based on A) & B), develop an iterative working definition for green growth as it applies to the STRING Region in consultation with relevant stakeholders.
- Task D) *Identification of Green Growth Sectors*  
Identify the key economic sectors within the STRING Region under which green growth can be pursued in consultation with relevant stakeholders.

More detail on each of the tasks and the methodology adopted for addressing each task is given under Section 2.2 below.

## **2.1.2 Action Research**

### **2.1.2.1 Overview of Approach**

The research approach adopted in this thesis is ‘Action Research’ (AR), an interactive inquiry process that balances problem-solving actions implemented in a collaborative context with data-driven collaborative analysis or research to understand underlying causes and enable future predictions about personal and organisational change (Reason & Bradbury, 2001). Variations on the name include participatory research, action science and co-operative inquiry. The AR approach being applied herein is utilised in two key contexts: as a research approach utilised within the proposed GGS Development Framework, and to support the development of a GGS for the specific case study of the STRING Region. It is also important to note that AR is not being compared to other potential methods of investigation in this study; it is being evaluated solely in terms of its suitability as a tool for the development of a GGS.

The founder of AR, Kurt Lewin, noted that “effective social change depends on the commitment and understanding of those involved in the change process” (Lewin, 1948). AR can be described as a practitioner-based research method that involves a continuous process

of research and learning in the researcher's long-term relationship with a problem (Cunningham, 1993), in which the researcher is not solving a problem for others but in collaboration with others in joint learning (Ottooson, 2003). Said another way, AR is a research tool for social science-based investigations that substitutes the traditional research notion of an objective, value-free approach to knowledge generation in favour of an explicitly political, socially-engaged, and democratic practice (Brydon-Miller *et al*, 2003).

AR is an iterative process that can be viewed as 'learning by doing', following a cyclical process of planning, acting, observing and reflecting that continuously informs the development of future iterations of the process (Figure 2-2). The inquiry process is not hypothetical, arising from a hunch or premise about subsequent action; it is instead 'parathetical', arising from proposition and action presented alongside one another (Raelin, 1999). Further, AR is flexible and responsive to the academic needs of the researcher as well as the needs of the participants to be heard and to influence. The approach is particularly well-suited for situations in which participants are either able to affect change or will be potentially impacted by proposed actions. Given the consultative and collaborative nature of the subject of this thesis, AR is considered to be a suitable framework for developing a consensual strategy for green growth.

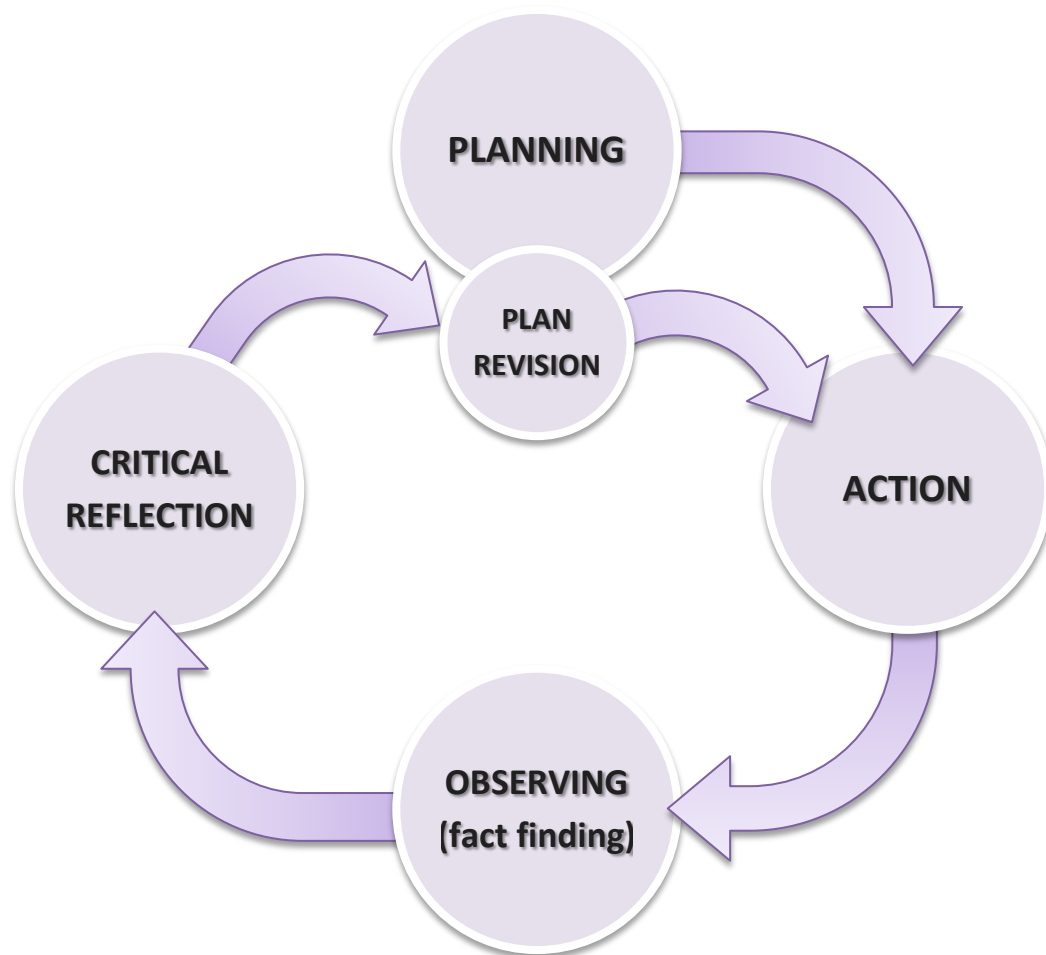


Figure 2-2 - The cyclic iterative stages of the Action Research framework (drawn from Altrichter *et al*, 2002).

AR differs from traditional research in the fundamental paradigm that each approach employs. Traditional research typically begins with a substantial existing understanding of hypothetical relationships; it seeks to discover new facts, verify old facts, and to analyse their sequences,

causal explanations, and the natural laws governing the data gathered (Cunningham, 1993). By contrast, AR does not attempt to set tight limits and controls on the experimental situation (Dickens & Watkins, 1999). Instead, it is assumed that participants have little background knowledge within a specific situation, and work is carried out collaboratively to observe, understand, and ultimately change the situation, while also reflecting on their own actions (Dickens & Watkins, 1999). Said another way, traditional research uses data to arrive at a specific set of conclusions without implementation within a social context, while AR works within existing social systems to generate data and use this to inform and change future behaviour.

Information gathering is a key component of the AR process. It is imperative the researcher collects and records as much data as possible when applying AR. Ottosson (2003) asserts that an abundance of information improves the scientific value. This stems from the iterative nature of the approach, where data collected in earlier iterations may turn out to have value in later iterations. Experience has shown that detailed recording is important in projects in order to avoid problems occurring at a later stage (Ottosson, 2003). It is also necessary so that any gradual changes in actions or perceptions that may not be immediately evident can be identified. Consequently, a systematic monitoring of information is required in order to generate valid and useful data. This means adopting a clear plan for recording information during the AR process.

Although AR is a more participatory approach than traditional research, there are several systemic limitations associated with AR that should be acknowledged. Firstly, there is not one universally-agreed methodology for AR. As such, two researchers attempting to solve the same problem could inevitably reach different conclusions yet still meet the criteria of AR within some paradigm or another (Cunningham, 1993). Secondly, researchers may also differ in the aspect of AR that they choose to place emphasis on within the AR cycle, with some emphasising experimentation, feedback, planning, or learning and theory-building (Cunningham, 1993). A further limitation is that AR is inherently subjective and situation-specific, relying on participants to generate data and affect change. This means that the participants in any AR undertaking ultimately choose, either consciously or unconsciously, the particular route that directs the research (Dickens & Watkins, 1999). There is consequently a danger that the research direction may give undue influence to participants who are 'stronger' (i.e. more skilled at oratory or participative situations, or perceived as having higher authority by virtue of existing social structures). This includes the researcher themselves, who requires significant interpersonal skills and must constantly strive to balance the needs of the participants with the requirements of the AR process (Ottosson, 2003).

### **2.1.2.2 Application of Action Research in Study Approach**

The development of an appropriate AR approach was carried out as per the four cyclical steps given in Figure 2-2 above. These are carried out a number of times, or iterations, until a research question is sufficiently addressed. A description of the tasks implicit in each step is given below (Mirata, 2005):

**Planning (Plan Revision):** Identification of a problem or a situation that needs improvement, the formulation of possible actions and the means that can be employed for their execution.

**Acting:** The agreed-upon actions from the planning stage are implemented within the client system.

**Observing / Fact finding:** Relevant information regarding the action(s) taken and their outcomes is collected.

**Critical Reflection:** Actions are taken and their outcomes are critically evaluated. This is where most of the analyses are carried out, the learning is made explicit and new actions for improvement are formulated in light of the analysis. These actions then feed into the following Plan Revision stage for the next iteration.

The study approach adopted was to utilise the key study tasks (Tasks A through D) to progressively develop an understanding of the key issues and to engage with identified key stakeholders. This approach was taken as the key stakeholders were being approached for the first time regarding green growth and the development of a GGS. Each iteration has been designed to provide key information that is built upon in the following iteration.

This resulted in an AR Action Plan with four iterations reflecting each of the study tasks. An important aspect of the AR approach is that a set of criteria for judging the success of the AR process needs to be developed (McNiff & Whitehead, 2010). The criteria were based on the various sub-tasks required to complete each iteration. The action plan and accompanying evaluation criteria, in the context of the AR approach adopted in this study, are provided in Table 2-1 below.

Table 2-1: Action Research Action Plan adopted in the thesis, including evaluation criteria for judging success.

Iteration	Task	Criteria
1	A) Literature Review	<ol style="list-style-type: none"> <li>1. Concepts of and case for green growth present in literature identified.</li> <li>2. Overlaps with related concepts determined.</li> <li>3. Criticisms of green growth identified.</li> <li>4. Use of green growth concepts in context of administrative frameworks relevant to STRING (international, national and regional levels) examined.</li> </ol>
2	B) Stakeholder Identification	<ol style="list-style-type: none"> <li>1. Purpose and scope of stakeholder engagement defined.</li> <li>2. Planning for stakeholder engagement carried out.</li> <li>3. Resources for engagement identified and mobilised.</li> <li>4. Engagement of stakeholders carried out as per plan.</li> <li>5. Steps are taken to review and improve upon stakeholder engagement process.</li> </ol>
3	C) Green Growth Definition	<ol style="list-style-type: none"> <li>1. Key concepts present in existing green growth definitions identified from literature.</li> <li>2. Concept of green growth introduced to participants.</li> <li>3. Common vision and definition for green growth developed.</li> </ol>
4	D) Sectoral Identification	<ol style="list-style-type: none"> <li>1. Sectors of interest identified from literature and from regional documentation.</li> <li>2. Regional Partners consulted to confirm sectors of importance to own region.</li> <li>3. Sectors of common importance to STRING Region identified and consensus reached.</li> </ol>



## 2.2 Methodology

### 2.2.1 Literature Review

Initial framing discussions were held with Jacob Vestergaard (Managing Director, STRING), in order to determine the present standing of green growth and to pinpoint potential future directions for green growth within the STRING Region. These meetings were supplemented by discussions with Thomas Lindhqvist at the International Institute for Industrial Environmental Economics (IIIEE), the author's thesis supervisor, as well as IIIEE colleagues Philip Peck, Åke Thidell and Håkan Rodhe. Finally, a number of framing discussions were held with Patrik Rydén (Managing Director, Femern Belt Logistics Platform) in order to establish the need for a strategy and develop an initial list of stakeholders.

Following the initial framing discussions, an extensive literature review was carried out for primary and secondary sources using the Lund University library search tools, Google Scholar and Google's generic web search that examined the topics presented in Table 2-2. The purpose of the literature review was to identify historic and present trends in defining and implementing green growth, framed from both international and relevant national and regional contexts.

Keywords were used both individually and with other keywords using relevant search operators as appropriate – for example, the use of quotation marks for exact phrasing (i.e. 'green growth') and Boolean operators (e.g. AND, OR and NOT). Keywords were initially selected using an iterative process based on the initial framing discussions and review of the literature returned from each search. This approach was supplemented with the "snowball sampling" method, whereby citations or keywords of interest made within a publication were also investigated and used where relevant (Krippendorff, 2004). Searches were carried out from November 2011 to May 2012. The results of the literature review are presented in Section 3. Given that the subject of green growth is largely theoretical, fairly recent and has few existing demonstrable examples, the majority of literature obtained was from secondary sources.

*Table 2-2: Topics searched for in the literature review and the keywords used to find relevant material.*

Topic	Keywords Used
Green growth	Green growth, green economy, green corridor, strategy, criticisms, stakeholder involvement, stakeholder engagement, indicators, sectors, policy, policy instruments.
Related or similar concepts	Sustainability, sustainable development, low carbon growth, low carbon economy, decoupling, Global Green New Deal, degrowth.
International organisations*	OECD, UNEP, IEA, GGL, GGGI, Öresund Committee, STRING.
National governments, organisations or bodies†	European Union (EU), United States, United Kingdom, Scandinavia, Denmark, Sweden, Germany, South Korea, Rwanda, Brazil, China, New Zealand.
Other concepts	Greenhouse gas (GHG), Agriculture, emissions.

\* Both the full name and initials of each organisation were used in the search. Organisations are listed here by initials for brevity.

† Keywords for both the name of the country (i.e. Denmark) and the name of the people (i.e. Danish) were used in the search.

**Note:** Keywords that resulted in publications with no relevance to the literature review or discussion are not shown in the table.

## 2.2.2 Stakeholder Identification and Engagement

The purpose of identifying and engaging with stakeholders on the development of a GGS for the STRING Region is to develop and expand support for strategic green growth objectives. The process used for the identification of stakeholders is based on the AccountAbility Stakeholder Engagement Standard (AA1000SES) 2011 developed by AccountAbility, a global think tank and consultancy focussed on sustainability in organisations.

The standard sets out three main considerations for stakeholder engagement, centred around defining the purpose of stakeholder engagement, the scope of engagement and who needs to be involved in the engagement, including ownership, mandate and stakeholders (AccountAbility, 2011). This approach, along with guidance provided in the companion document 'From Words to Action: The Stakeholder Engagement Manual' (Krick *et al*, 2006) has been used as the basis for the identification of stakeholders and the development of a stakeholder engagement plan.

The overall methodology employed in stakeholder identification and engagement in this thesis is as follows (Figure 2-3):

1. Carry out strategic thinking on the stakeholder engagement process:
  - a. Identify the purpose of stakeholder engagement;
  - b. Define the scope of engagement;
  - c. Delineate the mandate for engagement and ownership of the process.
2. Analyse and plan the engagement:
  - a. Develop a list of potential stakeholders based on an initial review of potential interest groups and preliminary discussions with key stakeholders;
  - b. Carry out stakeholder prioritisation and assign stakeholders to prioritisation group;
  - c. Determine engagement levels and method(s) for engagement;
  - d. Establish and communicate boundaries of disclosure;
  - e. Establish a set of indicators;
  - f. Draft an engagement plan.
3. Prepare for engagement:
  - a. Mobilise resources;
  - b. Build capacity;
  - c. Identify and prepare for engagement risks.
4. Implementation (put the plan into practice):
  - a. Invite stakeholders to engage;
  - b. Brief stakeholders;
  - c. Engage with stakeholders;
  - d. Document the engagement and its outputs;
  - e. Develop an action plan;
  - f. Communicate engagement outputs and action plan.
5. Act, review and improve on the process:
  - a. Monitor and evaluate the engagement;
  - b. Review of the process;
  - c. Follow up on action plan;
  - d. Report on engagement.

A key aspect of the methodology is the separation of stakeholders into groups of similar level of involvement in the development of a GGS. To simplify this process, two groupings were adopted: an 'Advisory Group' of core stakeholders made up of representatives from the Regional Partners, STRING and the Öresund Committee; and a 'Stakeholder Group' of wider stakeholders from the private, public and academic sectors. As per AA1000SES 2011, an

iterative process was adopted whereby each step of the engagement methodology was regularly reviewed with the core stakeholders in the Advisory Group to determine whether these factors required updating based on stakeholder feedback.

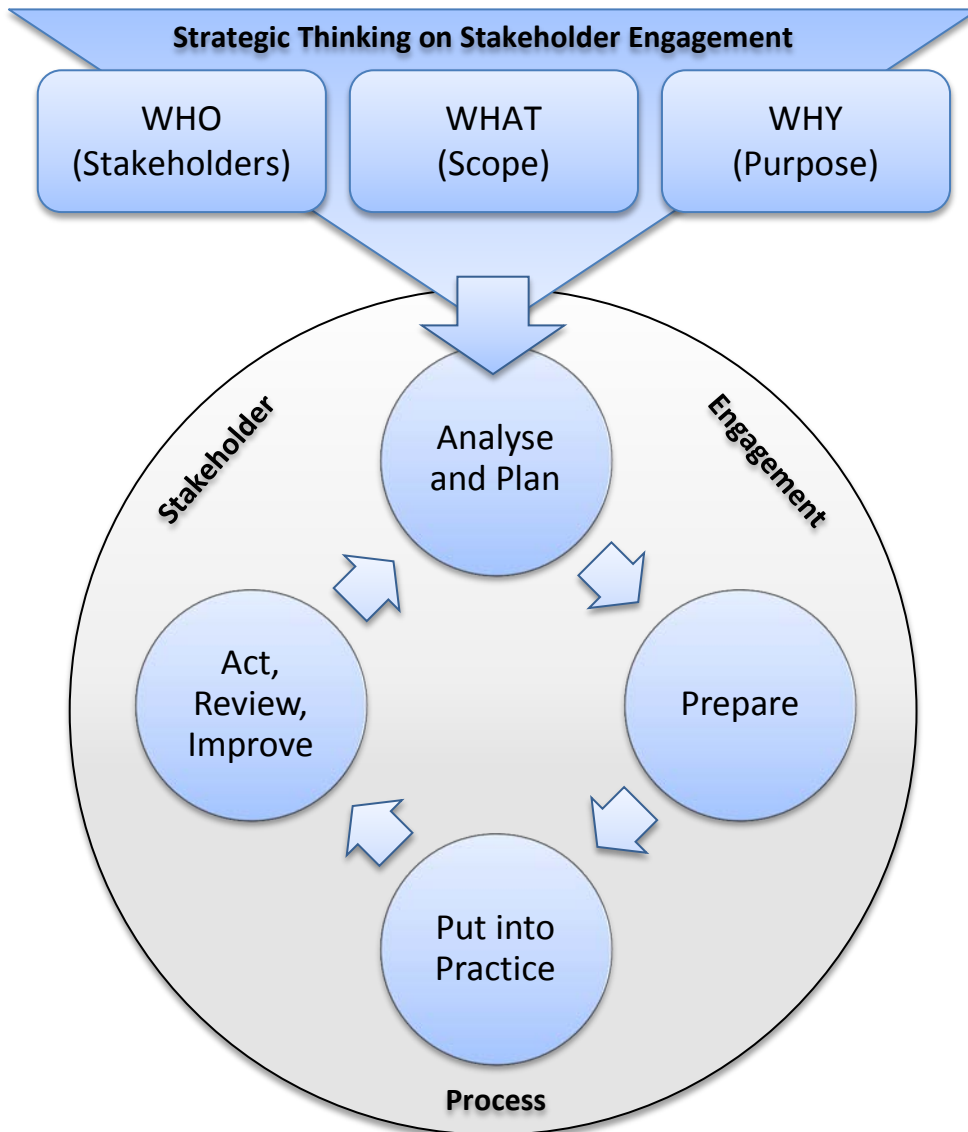


Figure 2-3: Stakeholder engagement process as defined in AA1000SES 2011 (adapted from AccountAbility, 2011; Krick et al, 2006).

### 2.2.3 Definition of Green Growth

A working definition of green growth was next developed in association with identified core stakeholders. Given that there is no universally-agreed definition in the literature, the purpose of developing the definition was to provide a basis for developing a GGS that would reflect the varied goals of each Regional Partner while also being acceptable to the various identified stakeholders. The definition was also intended to more clearly align the activities of relevant regional associations with those of other international and national bodies. This is especially important for increasing the legitimacy of the definition and for obtaining future funding from bodies such as the EU which have stated a clear desire to implement green growth.

A four-step approach was adopted in developing the definition:

1. Identify key green growth concepts from the literature;
2. Consult Advisory Group with identified key concepts using a survey ;
3. Analysis of results of survey;
4. Develop a working definition for green growth in the STRING Region and obtain consensus from Advisory Group.

Firstly, a number of 'key green growth concepts' were identified from definitions for green growth (and the analogous term green economy) present in the literature, using a simplified coding methodology drawn from (Flick, 2009). Briefly, this methodology entails identifying key concepts from each definition, and then grouping these into separate categories based on similar conceptual meanings.

The second step was to consult the core stakeholder Advisory Group with the key concepts. This was done in order to determine the perceived relevance of each concept to the individual policy objectives of each region and country, as well as the overall objectives of each regional association. To this end, a Briefing Paper presenting an overview of the study and its objectives was sent to the Advisory Group. The document requested that each member of the Advisory Group undertake a survey to rate the importance of each key concept in the context of each region's prevailing regulatory environment.

The third step involved an analysis of the collected data and a review of the average importance assigned to each key concept by the Advisory Group representatives. The purpose of this step was to determine which key concepts were considered important to the group as a whole and to identify those key concepts that could be excluded from the working definition.

The final step was to develop a working definition for green growth in the STRING Region based on the key concepts that were identified as being of most importance to the Advisory Group representatives. This was accomplished using an online survey and followed up with face-to-face meetings over the period 20<sup>th</sup> to 29<sup>th</sup> March 2012. A working definition was then developed based on the responses and distributed to each Advisory Group member for review and comment. Comments received were integrated into a final accepted green growth definition.

A further step was identified to present the working definition to the wider Stakeholder Group for review and comment but was unable to be completed within the timeframe of the thesis.

#### **2.2.4 Identification of Green Growth Sectors**

An analysis of potential green growth sectors was performed in order to determine which economic sectors in the STRING Region were most relevant to focus on in the later policy analysis stage. This was carried out as per the following methodology:

1. Identify potential green growth sectors presented in the literature;
2. Determine potential sectors of interest for each Regional Partner as mentioned in relevant regional documentation;
3. Consult Advisory Group with a combined list of the potential sectors using a survey;
4. Analysis of results of survey;
5. Develop a proposed list of green growth focus sectors and obtain consensus from Advisory Group.

Under the first step, an examination of literature obtained during the literature review was carried out to identify potential green growth sectors described by other organisations. In the initial literature review, a word search was carried out for the term 'sector' (and variants sectors and sectoral) within all documents relating to green growth or related terms (including green jobs and low-carbon growth). To be included in the analysis, each sector described needed to have been given a particular name (i.e. Agriculture) and then discussed in the context of its contribution to green growth within the document. In this context, a contribution could constitute a proposed focus sector (i.e. a suite of policy recommendations per sector) or an example of a green growth sector already instituted or identified by other administrations or organisations (e.g. a summary of green growth sectors in the United Kingdom). Both broad sector descriptions (i.e. energy) and important sub-sectors (i.e. renewable energy) were identified, with sub-sectors assigned based on their relation to sector categories as described in the literature. The term 'private' sector was excluded as it covers multiple economic sectors and thus was considered too broad for the analysis.

The second step entailed a review of regional documentation in order to identify potential green growth focus sectors that have been explicitly or implicitly referred to in administrative documents. Discussions were held with representatives from each member of the Advisory Group to identify strategic documents, supported with internet searches to obtain copies of these and other relevant documentation. The primary documents utilised in the review were regional development strategies, as well as environmental / climate change planning and business / innovation strategies. Each document was reviewed for any mention of sectors as per the approach utilised in the previous step.

The sectors that were identified in the previous two steps were next amalgamated into one list of sectors for distribution to the Advisory Group for review and comments. The sector list was distributed using an online survey and participants were asked to rate the importance of each sector to their administration.

The fourth step was to analyse the collected survey data and determine which sectors were of most importance to the STRING Region as a whole. This resulted in a list of proposed green growth focus sectors that would serve as the sectors to be analysed under the Sectoral Analysis task.

The final step was to consult the Advisory Group with the identified green growth focus sectors. These were supplied to the identified representatives for review and comment; however, the step was unable to be completed due to time constraints and administrative issues raised by some of the Regional Partners.

### 3. Green Growth in the Literature

#### 3.1 Theoretical Underpinnings

The theoretical underpinnings that can be linked to green growth originate from the related disciplines of ecological economics and environmental economics. These fields of study arose around the end of the 1980s to address the exclusion of environmental issues, such as pollution and resource use, from traditional economic discourse (Daly & Farley, 2004; van den Bergh, 2000). The main distinction between the two schools of thought is that the first considers the economy as a subset of a larger ecological system, while the latter is more interested in attaching and adapting environmental elements to existing classical (or neo-classical) economic models (Huberman, 2010). Green growth can be said to relate to both disciplines as it concerns itself with environmentally-sound economic growth without specifying the context of the economy within which green growth takes place.

It is important to note that the separate field of green economics cannot be considered a theoretical contributor to green growth. Green economics is essentially concerned with how human happiness can be maintained within ecological restraints. However, the discipline advocates a move towards a “steady-state” economy with inherent limits to economic growth (Cato, 2009), and is hostile to the approach of using alternative accounting measures or of internalising externalities (Wall, 2006).

One environmental sociology theory that can be said to embody the main precepts of green growth is “ecological modernisation”. A central aspect of the theory is that environmental benefits can be delivered through technological innovation and improvement (Fisher & Freudenburg, 2001). Fundamental to ecological modernisation is that existing political, economic and social institutions are seen as capable of internalising care for the environment (Hajer, 1995) and that policies for economic development and environmental protection can be combined to produce synergistic effects that create a positive-sum game between economy and ecology (Berger *et al*, 2001). Importantly, the theory is aimed at developed economies rather than the global South, and provides a template for new thinking about problems and solutions that are most urgent to address in the transformative sectors of metropolitan regions of advanced industrial nations (Buttel, 2000).

A similar theory with strong links to green growth is that of sustainable development. Developed by the Brundtland Commission in 1987, it is typically defined as “development that meets the needs of the present without compromising the ability of future generations to meet their needs” (WCED, 1987). The overall aim of sustainable development is to re-orientate economic and fiscal instruments towards such concepts as resource efficiency, the internalisation of environmental costs, minimising wastes and longer product life-cycles (Berger *et al*, 2001). However, proponents of sustainable development differ in their emphases on what is to be sustained, what is to be developed, how to link environment and development, and for how long a time (Parris & Kates, 2003). In this context, green growth can be considered a subcomponent of sustainable development (OECD, 2011), a means by which the goals and objectives of sustainable development can be implemented within existing economic frameworks.

#### 3.2 Green Growth Concepts – ‘Green’ vs ‘Growth’

Given the environmental and economic dimensions of green growth, it is perhaps unsurprising to note that most definitions are couched in terms that put emphasis on the ecological or financial benefits respectively. At its most basic level, green growth tends to be

used to support arguments for continued economic growth that incorporates environmental (and sometimes social) considerations. These can be separated into two key components: ‘green’ actions to be undertaken in the economy, and the resultant ‘growth’ that arises from these actions.

The environmental, or ‘green’, aspect is used to denote actions that contribute to minimising human impacts on ecosystems and the broader environment. Reference to the colour green is often made within the literature in contrast to the traditional “brown” economy that relies primarily on fossil fuels and non-renewable resources. In practice, green actions are interpreted as those that mitigate climate change, reduce greenhouse gas emissions, improve resource efficiency and protect ecosystems (GGL, 2011b). At a broader conceptual level, this refers to the consideration of the environment in human activities in order to minimise or prevent impacts on (or in the best case, improve upon) environmental conditions.

The economic, or ‘growth’, component reflects a desire for the continuation of the market-based capitalism that is in use today. The main problem with the existing economic system is that traditional measurements of growth do not adequately value natural capital (in the form of natural resource stocks, land and ecosystems), nor the impacts that certain economic activities have on the wider environment (OECD, 2011). However, economic growth is considered a key driver that maintains and improves quality of life, and is therefore a key tool for driving future changes that aim to address environmental concerns (Berger *et al*, 2001). Any deviation from conditions that support growth is consequently perceived to potentially result in considerable economic and social upheaval that, rather than improving environmental conditions, may further contribute toward damaging the environment and impeding social development (OECD, 2011).

One element of green growth that lacks universal agreement is the consideration of social issues. From the perspective of international organisations concerned with development in emerging countries, social issues are considered to be inherently interconnected with actions aimed at safeguarding the environment. Technology dissemination and investment in green growth within the economies of developing nations are seen to be key drivers of poverty alleviation and improved living standards in addition to environmental protection (UNEP, 2010; 2011b). However, green growth in developed economies appears to be more focussed on environmental goals. Social aspects are considered to be addressed primarily through improving the overall economic situation and introducing more environmentally-friendly practices, which leads to concomitant improvements in health and quality of life.

### **3.3 The Case for Green Growth**

Given the above, one may ask: what potential drivers for green growth exist in the context of minimising environmental and social harm? There are three main ways in which the literature makes the case for green growth. These are generally put in the context of the climate debate, either separately or drawing from all three approaches. The three approaches are summarised as follows (adapted from GGL, 2011b):

#### **1) Growth arising from activities compatible with emissions reductions.**

This argument is framed in terms of the long-term cost to GDP in the “do-nothing” scenario, and the potential cost-savings to be achieved in the future by making substantial investment in emission reductions as soon as possible. The least-cost and most efficient method proposed is the use of emissions pricing, coupled with the removal of market-distorting fossil fuel energy subsidies and reducing reliance on fossil fuels.

## 2) Growth from green jobs arising from emissions reduction activities.

Here, the argument is for investments in renewable energy or energy efficiency that create jobs as the basis of a new green employment market. Mechanisms for achieving this include green stimulus at times of recession, sponsorship of new green industries and using cost-savings from energy efficiency improvements to invest in green industry.

## 3) Growth in GDP created by emissions reduction activities.

In this scenario, emission reductions drive growth in GDP by either promoting comparative advantages in green sectors or increasing productivity through innovation in green technologies. This is to be led by developing new green export markets and new business models for green industry.

Each of the above arguments takes the view that actions to achieve emissions reductions themselves will drive green growth. However, it is equally important to determine the sources of green growth (i.e. the types of improvements that are expected to drive green growth), as these factor heavily in the development of appropriate green growth policy. To this end, the OECD has identified a number of specific economic opportunities that are expected to arise from actions to encourage green growth (OECD, 2011):

- *Productivity*: Incentives for greater efficiency in the use of resources and natural assets, such as enhancing productivity, reducing waste and energy consumption, and making resources available to highest value use.
- *Innovation*: Opportunities for innovation, spurred by policies and framework conditions that allow for new ways of addressing environmental problems.
- *New markets*: Creation of new markets by stimulating demand for green technologies, goods, and services; creating potential for new job opportunities.
- *Confidence*: Boosting investor confidence through greater predictability and stability around how governments are going to deal with major environmental issues.
- *Stability*: More balanced macroeconomic conditions, reduced resource price volatility and supporting fiscal consolidation through, for instance, reviewing the composition and efficiency of public spending and increasing revenues through the pricing of pollution.
- *Risk reduction*: Reduction in the chance of negative shocks to growth from resource bottlenecks which make investment more costly (such as the need for capital-intensive infrastructure when water supplies become scarce or their quality decreases), and preventing imbalances in natural systems which raise the risk of more profound, abrupt, highly damaging, and potentially irreversible, effects (as has happened to some fish stocks and as could happen with damage to biodiversity under unabated climate change).

Despite the various benefits of green growth identified in the literature, there have been relatively few attempts to supplement the above arguments with economic studies providing financial support for these claims. UNEP (2011b) carried out an economic modelling exercise for various green growth scenarios, the results of which indicate that in the short term, economic growth under a green scenario may be less than under business-as-usual, but in the longer term (2020 and beyond) would outperform business-as-usual by both traditional measures (GDP growth) as well as more holistic measures (per capita growth). The report also finds that in a number of sectors (such as agriculture, buildings, forestry and transport), green growth delivers more jobs in the short, medium and long-term than business-as-usual (UNEP, 2011b). Another report financed by the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety utilised an enhanced general equilibrium model



(similar to those used by the World Bank) covering the interactions between energy, economy, and the environment to show that green growth measures in the EU aimed at increasing carbon reductions from 20 to 30% would result in increased economic growth (Jaeger *et al*, 2011). Nonetheless, the authors note a number of specific micro- and macro-economic measures will be need to be implemented in order to realise this growth.

### **3.4 Similarities and Differences with Related Concepts**

There is considerable overlap between green growth and other concepts<sup>7</sup> that push for more equal consideration of economic, environmental and social issues. An example is 'low carbon growth' (also called 'low carbon economy'). This concept is similar to green growth in that it requires policy actions to be taken to reduce dependency on fossil fuels and to remove perverse subsidies (Podesta *et al*, 2007). The sole difference between low carbon growth and green growth is that the focus of the former tends to be on the energy sector rather than the overall economy. Low carbon growth in this context can therefore be categorised as broadly analogous with green growth.

'Sustainable growth' is a poorly-defined term that has been used intermittently in the literature to describe economic growth that does not consume in excess of the environment's ability to provide. This is essentially the same as green growth, although the former is typically used in the context of natural resource and energy consumption and the latter tends to include some mention of social issues. However, the term has no accepted definition in the literature – it variously is taken to mean economic growth that can proceed ad infinitum at a constant rate consistent with the availability or the renewability of natural resources, growth that requires no sacrifices from future generations (that is, consumption per capita will never go down from one generation to the next) or the level of human economic activity which, given the technology available now and presumably in the future, leaves the environment unchanged (Baranzini & Bourguignon, 1995). The term 'sustainable growth' suffers from two additional problems. Firstly, depending on the definition used, on the constraints actually taken into account, and on the assumptions made concerning the future evolution of technology, recommendations by the supporters of sustainable growth are imprecise and sometimes contradictory (Baranzini & Bourguignon, 1995). The second is that the term is already used in the business literature to describe growth in a company that does not exceed that company's ability to handle such growth. To this end, key proponents of 'sustainable growth' (most notably the OECD) have tended to prefer use of the term 'green growth' in recent publications. Nonetheless, it should be noted that sustainable growth remains one of the EU2020 key priorities, and in that context is treated as roughly equivalent to green growth.

'Decoupling' is another term that has found favour in recent years to describe actions that break the link between economic activity and the negative environmental impacts associated with resource use. Decoupling occurs when the growth rate of an environmental pressure is less than that of its economic driving force (e.g. GDP) over a given period (OECD, 2002). It is intrinsically related to green growth and can be considered one of the key objectives that green growth aims to implement (UNEP, 2011a).

These concepts should not be confused with other terms in the literature that seek to achieve environmental goals through fundamental change to societal or economic systems. For example, 'degrowth' is a recently proposed alternative paradigm for growth that proposes that new policies are needed that relate directly to a new overarching vision that does explicitly

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<sup>7</sup> Given that both the terms 'green economy' and 'sustainable development' have been discussed previously in this report, they will not be covered further under this discussion of related concepts.

away with the imperative of growth (Kallis, 2011). Degrowth broadly advocates, depending on the interpretation, a reduction in actual GDP, consumption, work time, the physical size of the economy, or a fundamental change in the present economic system (or some combination of these), in order to reduce pressures on the environment (van den Bergh, 2011). Like green growth, the concept of degrowth is poorly defined in the literature (van den Bergh, 2011). However, this is where the similarity ends – green growth relies on the paradigm of continued economic growth and has few, if any, real parallels with degrowth.

### 3.5 Criticisms of Green Growth

Clearly, a solution such as green growth that promises to address the issues of economic growth and climate change may be subject to criticism from a number of perspectives. One fundamental issue relates to whether green growth can actually deliver the emissions reductions required to combat climate change. An international consensus on preventing the worst impacts of climate change has been to limit the global average temperatures increase to no more than 2°C compared to 1990 reference levels (UNFCCC, 2010). However, the reality is that world governments are very unlikely to attain those greenhouse gas reductions that are already agreed (Bowen & Ranger, 2009; van Kooten, 2003), and it is unclear whether these reductions would be achieved within an acceptable timeframe, even assuming a heavy focus is put on green growth.

Given the above, criticism has been levelled at green growth from both environmental and economic perspectives. Traditional environmentalists fear that investment in green growth will undermine broader efforts to implement sustainability, or divert attention away from the more fundamental or societal changes required in the economic system to address over-consumption and other environmentally-unsound behaviour (NEF, 2010). For example, carbon sequestration, which promises to extend the life of existing fossil-fuel power plants, may attract resources away from more effective solutions. This is because carbon sequestration is largely unproven, highly expensive and significantly decreases the overall delivered power due to the substantial energy required to actually sequester the carbon (GGL, 2011a). Nuclear power is a particularly thorny issue: are nuclear power stations, which produce very little greenhouse gas, a ‘green’ energy source? In most cases, proponents of green growth have tended to avoid taking a position on the inclusion of nuclear power, and current public opinion has in any case turned rather against nuclear power of late. Further criticisms are made regarding the possible use of global-scale technological solutions such as geoengineering. This approach is considered by many environmentalists (and the wider public) as being too high-risk, and is untested at global levels (Royal Society, 2009).

One further environmental criticism concerns the so-called ‘greenwashing’ of activities that have environmentally-damaging consequences. For example, the South Korean Green Growth Strategy has set aside a considerable proportion of money for the ‘Four Major Rivers Restoration Project’, designed to address water shortage and flooding issues. Although it is presented as a ‘green’ project in the strategy, environmental NGOs and community groups highlight that the work has numerous environmental impacts such as the dredging of numerous waterways, the removal of 54 wetlands and threat to several endangered species (Cha *et al.*, 2011), in areas that have been protected through RAMSAR and identified as Important Bird Areas. In addition, the Environmental Impact Assessment for the project was completed in under four months and, while it has been approved by the government, it has also been criticised on the inadequacy of the biodiversity studies, lack of consultation, reliance on old data and rapid timeframe (Rostron, 2010).

From an economic perspective, some claim that rather than improving economic conditions, green growth will impact negatively on the rest of the economy. For example, the Global Warming Policy Foundation, a think-tank that questions the economic rationale behind green claims, argues that “there are no sound economic arguments to support an assertion that green energy policies will increase the total level of employment in the medium or longer term when we hold macroeconomic conditions constant” (GWPF, 2011). Similarly, it is not entirely clear whether enough new “green collar” jobs will be created through green growth to offset the “brown collar” jobs they replace (GGL, 2011a).

A final economic argument against green growth is that it may increase the cost of living and doing business by internalising environmental externalities at the cost of economic growth. One report by a group composed of European and British members of parliament and other academics asserts that decarbonisation, in effect, means replacing relatively cheap forms of energy generation with high-cost energy, resulting in increased economic costs while slowing down the pace of economic growth (Krahmer *et al*, 2010). Although there is a growing body of literature that points the inverse, there is no disputing that the challenges posed by green growth are daunting; the characteristics of green growth require that already-existing systems must be fundamentally changed towards low-emissions and high energy efficiency while maintaining uninterrupted economic growth and energy supply (GGL, 2011a).

## 3.6 Green Growth at International, National and Regional Levels

### 3.6.1 International Context

Numerous intergovernmental agencies have attempted to define and develop an argument for green growth in the recent past. The Organisation for Economic Co-operation and Development (OECD) is one of the key proponents of the concept, and gives the following definition in their 2011 report entitled “Towards Green Growth” (OECD, 2011):

“Green growth means fostering economic growth and development while ensuring that natural assets continue to provide the resources and environmental services on which our well-being relies.”

The focus of the OECD’s definition is rather unsurprisingly on economic growth, with the emphasis on the “natural assets” that provide resources and environmental services. This translates in the document to ensuring that environmental resources and services are properly valued and that environmental externalities are appropriately priced. A suite of policy options addressing green growth in a variety of sectors are presented. The OECD report also stresses the importance of supporting policies that encourage innovation, as well as better indicators to measure green growth.

UNEP is another intergovernmental agency which has promoted the concept of green growth. The organisation approaches the green growth discussion primarily from a sustainability viewpoint. As a result, it places considerably more emphasis on developing countries, poverty reduction and identifying the mechanisms required to implement green growth objectives. The definition used by UNEP in several reports is as follows (UNEP, 2010; 2011b):

“A Green [Growth] Economy can be defined as one that results in improved human wellbeing and social equity, while significantly reducing environmental risks and ecological scarcities.”

A key UNEP report entitled “Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication” calls for growth in which production and consumption patterns contribute to a variety of common environmental, social and economic

objectives. Examples of these objectives include reduced waste, pollution, resources use, materials and energy use, as well as the creation of decent employment opportunities, sustainable trade, reduced poverty, and improved equity and income distribution (UNEP, 2011b). The report also specifies a number of sectors within which green growth should be pursued, including renewable energy, low-carbon transport, energy-efficient buildings, clean technologies, improved waste management, improved freshwater provision, sustainable agriculture, forestry, and fisheries (UNEP, 2011b).

UNEP's definition is broadly concordant with the directions proposed by the OECD. Both reports identify a broadly similar set of macroeconomic policy directions that should be adopted and propose a suite of indicators to measure the success of actions taken. Interestingly, UNEP develops an argument for green growth based on quantitative economic modelling using GDP as the main measure. The use of such economic arguments for green growth by an environmentally-focussed organisation is significant as it demonstrates a willingness to speak in a common language to economists and proponents of market-based approaches towards resolving problems.

Other international organisations have adopted green growth as a method for encouraging investment in a particular sector. In particular, organisations representing the energy sector have embraced the concept of green growth. The International Energy Agency in 2009 put forward a report named "Ensuring Green Growth in a Time of Economic Crisis: The Role of Energy Technology" (IEA, 2009), which gave the case for a number of green growth energy strategies, albeit without actually defining what green growth is. However, it is important to consider that a GGS would be generally in the interest of the energy sector, as it stands to benefit significantly from green investment. Green Growth Leaders, a global alliance of cities, regions, countries and corporations, also approach green growth primarily from an energy context (GGL, 2011a; 2011b). They define green growth more broadly as "job creation or GDP growth compatible with or driven by actions to reduce greenhouse gases" (GGL, 2011b). However, the organisation is more specific in identifying both the benefits and potential pitfalls presented by green growth to the energy sector.

Internationally, the Republic of Korea is seen as a world-leader in green growth. In July 2009, Korea announced a "Five-Year Green Growth Plan" with USD\$83.6 billion in funding (representing 2% of GDP), intended to turn strategy into concrete and operational policy initiatives towards achieving green growth over the period 2009 to 2013 (UNEP, 2009). Korea's interpretation of green growth is of "an action-oriented paradigm which promotes a mutually supportive relationship between growth and the environment by holistically embracing the framework of sustainable growth" (PCGG, 2011). This definition is used as a framework for developing policy and is supported through three key objectives comprising a) mitigation of climate change and the strengthening of the country's energy independence, b) creation of new growth engines, and c) improvement in the quality of people's lives and enhancement of Korea's international standing (PCGG, 2011). Various other countries, including New Zealand and Vietnam, are also engaged in the early stages of developing a GGS.

The developing world is similarly quite interested in the concept of green growth. Numerous countries have either implicitly (i.e. Brazil and China) or explicitly (such as Rwanda) adopted green growth strategies. However, these strategies tend to focus on poverty alleviation and rural development in under-developed areas, and as a consequence will not be covered further in this literature review.

### **3.6.2 European & National Context**

The EU has clearly mandated that sustainable growth is a key element of the “Europe 2020 Strategy” (EC, 2010b) as well as of the “Roadmap Towards a Competitive Low Carbon Economy in 2050” (EC, 2011). Under these initiatives, sustainable growth, smart growth and inclusive growth are considered central to achieving Europe’s socio-economic and environmental goals. Indeed, the EU Presidency holders for the first six months of 2012, Denmark, have clearly set out that they wish to place green growth and climate change on the EU’s agenda (GoD, 2011b). Objectives related directly to green growth include improving energy efficiency, reducing dependence on fossil fuels, implementing low-carbon development strategies, and encouraging innovation and green job creation.

Within Europe, several national governments have taken concrete steps towards implementing green growth. Of these countries, Denmark and Germany are seen as leaders in this regard, with Sweden also a strong contender. In Denmark, green growth has been explicitly defined as part of their national strategy under the Agreement on Green Growth of 16 June 2009, although it should be noted that this plan is directed primarily towards the agricultural sector (GoD, 2009). They have also adopted an ambitious energy strategy to 2050 that aims to achieve fossil fuel independence through the large-scale adoption of greener energy sources (renewables and coal / biomass with carbon capture and storage) (GoD, 2011a). Renewable technologies have also been heavily supported in the past, and Denmark sources a high percentage of energy from renewables, and exports such technology internationally.

Germany has similarly encouraged a change in policy towards green growth, although no concrete strategy for achieving green growth exists. Through a set of incentives under the Ecological Tax Reform implemented from 1999 to 2005, around EUR 40-50 billion (2% of German GDP) was spent on essentially making environmentally-beneficial things cheaper and damaging things costlier (Goerres, 2006). Examples of policy instruments adopted include increased energy taxes, emission trading for industrial and power generation plants, introduction of new environmentally-friendly subsidies for renewable energies and energy efficient technologies, a mandatory deposit regime and reduced some environmentally harmful subsidies (Goerres, 2006). Beyond this, Germany is a recognised leader in the renewable energy sector, particularly wind turbines and solar power generation.

Sweden has put the development of clean technologies and phasing out fossil fuels high on the agenda. However, Sweden has no explicit national GGS, although an inter-ministerial working group exists to discuss and provide input on issues concerning the green economy (GoS, 2010b). Nonetheless, Sweden has adopted a wide variety of policy instruments that are complementary with green growth, including pricing that reflects environmental outcomes, green public procurement, green taxes, support for renewables, energy efficiency, sustainable transportation, and investment in research and innovation (GoS, 2010b).

What is common between each of these countries is a commitment towards increasing the share of renewable energy far beyond current EU requirements. There is also multi-partisan support in each country for the use of green policy instruments, even in cases where such approaches may not be well tested. Similarly, there is broad recognition that green technologies will assist in economic recovery as well as achieving environmental commitments. On the other hand, none of the countries have developed a targeted strategy for green growth that takes into account a variety of green growth sectors.

### **3.6.3 Regional Context**

None of the Regional Partners of the STRING Region have produced a GGS to date, and they have not directly mentioned green growth within their strategic and policy documentation. Nonetheless, the Regional Partners have pursued elements of green growth within the context of their individual strategies for addressing environmental issues and climate change.

Despite lacking specific mention of green growth, there is considerable potential for green growth to be instituted within each Regional Partner. The national governments of each Regional Partner have mandated that development is to be handled at the regional level. Individually, the regions are administered by their own elected regional council with a dedicated administrative body of civil servants. Consequently, the regions are responsible for developing and putting in place policy relating to national environmental and climate change goals. They are also in theory able to collaborate across national lines on green growth policy, as long as such policy is not at odds with prevailing EU and national-level policy. However, an important constraint is that the regions in each country have little to no powers to instigate or raise taxes (although national government do distribute a portion of national tax income to each region). This limits the types of policies that can be implemented at the regional level.

Objectives aligned with green growth have been high in agenda-setting within Regional Partner administrative bodies. Mostly this has been a consequence of EU and national-level policies on achieving GHG reductions, although in some cases regional administrations have exceeded national requirements. Key policy themes that are common across the region include innovation, reducing GHGs, energy efficiency and green transport modes.

## **4. Stakeholder Identification and Engagement**

### **4.1 Strategic Thinking on Stakeholder Engagement**

#### **4.1.1 Purpose**

The primary purpose of undertaking stakeholder engagement on the development of a GGS for the STRING Region is to develop and expand support for strategic green growth objectives. Stakeholder “buy-in” to the concept of green growth is important from several perspectives. At the policy-maker level, buy-in to the concept is crucial if regional co-operation on green growth is to be achieved. Beyond this, policy-makers are more likely to implement policy that addresses green growth objectives if other stakeholders, including fellow regional policy-makers and other stakeholders active in the region, also support green growth objectives. This of course relies on stakeholders having a functional understanding of what green growth is and how it relates to their activities. It further assumes that stakeholders are made to feel generally positive about the concept and that they trust the organisation that is engaging with them.

Involving stakeholders in decision-making is also intended lead to a sense of co-ownership of the process, increasing the likelihood of stakeholder compliance with proposed policy changes. Said another way, the more stakeholders feel as if they have a voice in decisions affecting them, the more chance that they will abide by whatever requirements are selected (Bryner, 2001). However, stakeholders will only behave in this manner insofar as the GGS adequately reflects the objectives of individual stakeholders. The engagement process must therefore clearly address all stakeholder feedback and communicate how each feedback has been resolved or otherwise in the strategy.

Finally, stakeholder engagement helps to develop an understanding of what the various stakeholders want the strategy to achieve, and from this tailor a suite of policy instruments that suits the majority of stakeholders. Stakeholders are likely to support policy that directly benefits them, or at minimum has no impact on their operations. Having a variety of stakeholder views can help in developing a policy framework that maximises benefits and minimises detriment to stakeholders. Further, the engagement process helps to determine what changes in policy each set of stakeholders are willing to accept. For instance, the removal of perverse fuel subsidies may initially be viewed negatively by many businesses as it is perceived to translate to increased operational costs and thereby increased costs to their customers. However, businesses may be more amenable to the idea if, for example, they are guaranteed subsidies to cover the additional costs, or if the removal of subsidies takes place over a defined time period. Canvassing and addressing stakeholder views is consequently an important element of the engagement process.

#### **4.1.2 Scope of Engagement Process**

The scope of stakeholder engagement was limited to the development of a GGS for the STRING Region. The engagement process focussed on stakeholders located within the regional entities that make up the STRING Region.

The timeframe of the GGS covers both current concerns as well as long-term strategic issues associated with the implementation of green growth policies. Consequently, stakeholder engagement was aimed at addressing issues relating to green growth in the near-term and long-term.

### 4.1.3 Mandate and Ownership

The initial mandate for the stakeholder engagement process was initially given by the STRING Partnership on 18 November 2012. Due to various administrative issues, ownership of the process was passed on 17 February 2012 to the ‘Femern Belt Logistics Platform’, a cluster initiative project operated by Region Sjælland with the overall aim of supporting businesses in the region. The process was finally returned to the STRING Partnership on 19 April 2012.

## 4.2 Analyse and Plan the Engagement

### 4.2.1 List of Potential Stakeholders

Table 4-1 below gives a list of the potential stakeholders in the development of a GGS for the STRING Region. The list presents the various categories of stakeholder and identified subgroups with similar perspectives. Stakeholders are limited to those entities present within the STRING Region or within which the STRING Region operates.

Table 4-1: List of potential stakeholders in the green growth strategy.

Stakeholder Category	Subgroups of Similar Perspectives	Organisations
Government policy-makers	Supra-national administrations	European Union
	National administrations	Denmark
		Germany
		Sweden
	Regional administrations	Region Hovedstaden
		Region Sjælland
		Hamburg
		Schleswig-Holstein
	Region Skåne	
Municipal administrations	All municipalities present within STRING Region	
Inter-regional organisations	Inter-regional organisations within the STRING Region	STRING Partnership
		Öresund Committee
	Inter-regional organisations that include the STRING Region	SCANDRIA
		TransBaltic
	Other EU-level organisations	
Academic institutions	Universities within the STRING Region	<i>Regions Hovedstaden &amp; Sjælland</i> University of Copenhagen Roskilde University Technical University of Denmark IT University of Copenhagen Copenhagen Business School
		<i>Hamburg &amp; Schleswig-Holstein</i> University of Hamburg Hamburg University of Technology University of Kiel University of Applied Sciences Wedel University of Flensburg
		<i>Region Skåne</i>



Stakeholder Category	Subgroups of Similar Perspectives	Organisations
		Lund University Malmö University Kristianstad University The Swedish University of Agricultural Sciences
		Other university colleges within STRING Region
		Other universities outside of STRING Region
	Advanced vocational training institutions	<i>Denmark</i> Arbejdsmarkedsuddannelser
		<i>Germany</i> Fachoberschule Berufsaufbauschule
<i>Sweden</i> Kvalificerad Yrkesutbildning		
Inter-regional academic bodies	Öresund University (now defunct)	
Non-Governmental Organisations (NGOs)	Environmental / sustainability groups	* See note
	Social justice groups	
	Growth groups	
	Political groups	
Associations	Trade or industry associations	* See note
	Unions	
Businesses	Companies headquartered in the STRING Region	* See note
	Companies headquartered external to STRING Region but operating within the region	
Media	Regional and local media	* See note
	International media	
Community Groups	Anti-Fehmarnbelt Link citizen groups	* See note
	Pro-Fehmarnbelt Link citizen groups	

\* Note: Potential stakeholder organisations in these categories have not been listed as there are a huge number of organisations and later stakeholder consultation in this study has not included these stakeholder groups.

#### 4.2.2 Stakeholder Prioritisation

Due to large number of stakeholders to be consulted, stakeholders were separated into two key groupings (Figure 4-1). The first, the Advisory Group, comprised a ‘core’ group of representatives from each of the Regional Partners (Region Hovedstaden, Region Sjælland, Hamburg, Schleswig-Holstein and Region Skåne) and the two main inter-regional associations within the STRING Region (STRING and the Öresund Committee). These participants were selected as they are directly involved in the development of regional policy within the STRING Region.

The second grouping, the Stakeholder Group, was a wider group that included all other relevant identified stakeholders. This separation was made in order to ensure that selected definitions and policy given to the wider Stakeholder Group were in line with regional and national regulatory frameworks and broader regional policy directions.

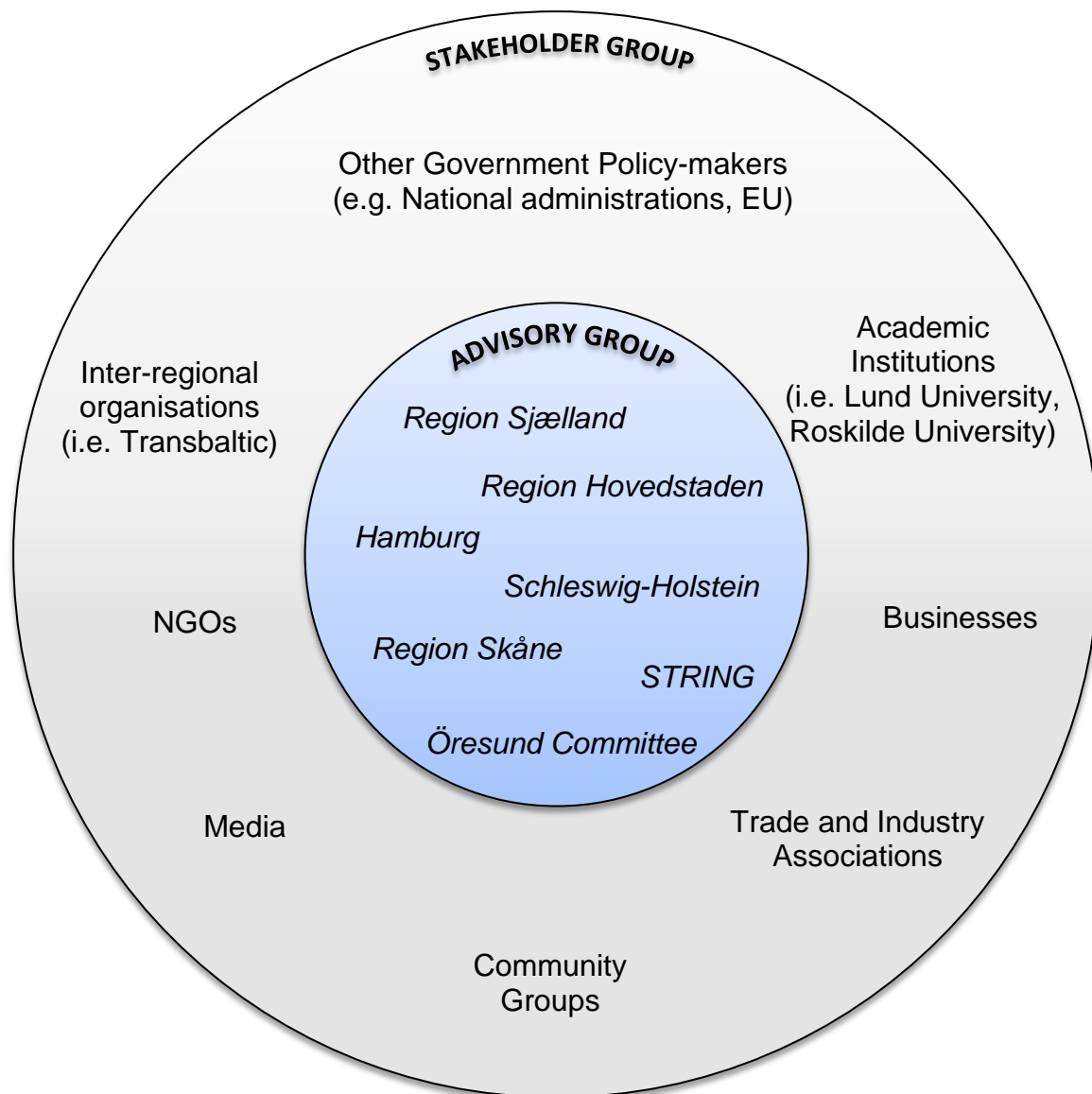


Figure 4-1: Graphical representation of stakeholder prioritisation.

### 4.2.3 Levels and Methods for Engagement

The purpose of this task is to define the nature of the relationship that the STRING Partnership aims to develop with stakeholders. It was decided to separate the stakeholder consultation process into two parts – one for the Advisory Group, and a second for the Stakeholder Group. As a result of the limited timeframe available for consultation, the scope of engagement in this thesis was limited to members of the Advisory Group.

The available methods for engagement were constrained by the geographic spread of stakeholders as well as the limited timeframe afforded in the development of the strategy. The methods that were selected are as follows:

- Pre-engagement activities:
  - Review of unsolicited information (primarily Advisory Group member websites);
  - Tracking of information (primarily media reports and from discussions with Regional Partner representatives and other contacts);

- Creating awareness (discussions with various potential stakeholders either via phone or face-to-face at conferences or other meetings);
- Advisory Group:
  - Direct consultation in person at Advisory Group member offices;
  - Online surveys;
  - Provision of Briefing Papers;
  - Phone calls and email.

A series of workshops was also planned but was unable to be held due to conflicting Advisory Group member schedules.

#### 4.2.4 Boundaries of Disclosure

Based on discussions with Jacob Vestergaard (Managing Director of the STRING Partnership) and Patrik Rydén (Managing Director of Femern Belt Logistics Platform), a policy of full disclosure was adopted, with clear attribution of the comments and responses from each stakeholder. Appendix 1 shows the scanned documents from Patrik Rydén giving permission for full disclosure. Permission for full disclosure from STRING was pending at the time of thesis submission.

Each Advisory Group representative was informed of the boundaries of disclosure during face-to-face meetings. However, the representatives all made it clear that any opinions given during meetings were those of the individual participants and did not constitute an official political declaration.

#### 4.2.5 Indicators

Indicators allow an organisation to measure and evaluate the progress towards achieving quality stakeholder engagement, to identify areas for improvement and to demonstrate the value added through engaging with stakeholders (AccountAbility, 2011). Two main indicators were developed (Table 4-2). Measurement of the indicators is predicated on the full documentation of each interaction with a stakeholder (i.e. via email, phone, letter etc.), recorded in an appropriate database – in this case, a project Consultation Matrix (Appendix 2). It is expected that further indicators would be developed in a future study to take into account the broader participation of the Stakeholder Group, as well as stakeholder participation the entire GGS Development Framework.

Table 4-2: Stakeholder engagement indicators.

Indicator	Justification	Measurement Method
Proportion of initial responses	Measures the number of responses in light of the number of invitations for stakeholder involvement sent. Used to determine whether further stakeholder outreach is needed.	Count of any correspondence from each stakeholder regarding involvement (or decline) in engagement process.
Number of participants	Provides comparison between personnel resources put towards participation in process. Used to determine whether enough variety in perspectives	Count of the number of participants identified by each of the involved Advisory Group organisations.

#### 4.2.6 Engagement Plan

A Stakeholder Engagement Plan was prepared as per the requirements of AA1000SES that presented the following information (i.e. the headings of Section 4.2):

- The mandate for the engagement;
- The purpose and scope of the engagement;
- The owners of the engagement, their roles and responsibilities;
- The methodology for and results from identifying stakeholders;
- The methodology for and results from profiling and mapping stakeholders;
- The pre-engagement activities;
- The engagement level(s) and methods;
- The boundaries of disclosure.

A preliminary version of this plan was discussed and agreed with Jacob Vestergaard as part of earlier project framing discussions. The final version of this plan was submitted to the STRING Partnership on 24 May 2012 (Appendix 3). However, the plan was not submitted to the wider Advisory Group for review and approval within the study period as it needed to be reviewed and approved within the STRING Partnership first. This had not been completed as of thesis submission.

## 4.3 Prepare for Engagement

### 4.3.1 Mobilise Resources

Few resources were required in the initial consultations with the Advisory Group members, as most communication took place over phone and email. Representatives of the STRING Partnership and Femern Belt Logistics Platform identified suitable contacts in each of the Regional Partners. Funding for the initial component of the stakeholder engagement process was provided by Femern Belt Logistics Platform to cover the costs of the thesis author travelling to and attending meetings and other consultation.

### 4.3.2 Build Capacity

It is important to ensure that the engagement process takes into account potential barriers to involvement that might arise as a result of a lack of capacity on the part of the engaging entity (in this case, the STRING Partnership). Barriers may include differing levels of knowledge, poor literacy, low confidence or a lack of time. By taking steps to address these barriers, the likelihood of successful engagement is increased.

To this end, it was important to identify areas where the capacity to engage may be lessened and to propose solutions to address these areas. Areas of importance for developing a capacity to engage with representatives were identified as follows:

- *Authority of Consultant:* Each participant needs to feel that the consultant is capable of engaging with the various administrative bodies and organisations. Consequently, the thesis author was given authority to represent Femern Belt Logistics Platform in stakeholder consultation (Patrik Rydén, 17 February 2012, pers. comm.). The author also made clear his previous background as a consultant and experience working in the region in subsequent communications.
- *Level of Knowledge:* The level of knowledge of green growth within the Advisory Group was assumed to be minimal. To address this, all Advisory Group members were sent a Briefing Paper overviewing green growth and further built upon in later phone / email conversations.
- *Language:* English was agreed as the main communication language due to general fluency of all participants.
- *Time:* To increase the chance of representatives choosing to become involved, it was made clear that their involvement in the process would not require a great deal of the representative's time to undertake. Further, face-to-face meetings were limited to one hour to ensure that key issues were covered in a quick and timely fashion.

### 4.3.3 Engagement Risks

A number of key risks were identified within the stakeholder engagement process. To this end, contingency measures were developed to deal with each identified risk. Table 4-3 presents the key risks and proposed contingency measures for addressing each risk.

*Table 4-3: Key risks identified for the stakeholder engagement process and proposed contingency measures.*

Key Risk	Proposed Contingency Measure(s)
Unwillingness to engage	<ul style="list-style-type: none"> <li>• Reframe presentation of issues to make more relevant to stakeholder.</li> <li>• Phone call to progressively higher management level of organisation.</li> <li>• Approach any associated stakeholders to convince unwilling stakeholder to engage.</li> </ul>
Conflict between participating stakeholders	<ul style="list-style-type: none"> <li>• Offer to mediate in discussions, or to organise a mutually-acceptable mediator.</li> <li>• Attempt to deal with each stakeholder separately.</li> </ul>
Participation fatigue	<ul style="list-style-type: none"> <li>• Offer to return to topic after one week or a longer agreed period.</li> <li>• Present a more summarised version of information.</li> </ul>
Creating expectations of change that may be unable to fulfil	<ul style="list-style-type: none"> <li>• Clarify objectives and expectations at the outset of each communication.</li> <li>• Continually record agreements made during communications (especially made verbally) and send to all participants in summary email with option to rephrase or rescind agreements.</li> </ul>
Lack of balance between ‘weak’ and ‘strong’ stakeholders	<ul style="list-style-type: none"> <li>• Monitor levels of participation by ‘weak’ stakeholders (using indicator) and canvas those under-participating directly for views.</li> <li>• Offer ‘weak’ stakeholders to become more involved via different communication channels (i.e. email, phone) and address their issues during future communications.</li> </ul>
Disruptive stakeholders	<ul style="list-style-type: none"> <li>• Attempt to determine what issue is causing disruptiveness and propose potential solutions to address issue. Where no solution is evident, propose to note objections in future communication.</li> <li>• Point out privately stakeholder is being disruptive and ask them to desist.</li> </ul>
Uninformed stakeholders	<ul style="list-style-type: none"> <li>• Clearly explain purpose and scope from outset of each communication.</li> <li>• Provide Briefing Papers that summarise key issues.</li> <li>• Offer access (i.e. web links) to more information during each communication.</li> </ul>

## 4.4 Implementation

### 4.4.1 Invite Stakeholders to Engage

An initial invitation to become a member of the Advisory Group was sent to representatives identified during the project framing. This was sent via email after an initial phone call to identified representatives to request involvement in the Advisory Group. The email included a two-page Briefing Paper that summarised the key issues and the initial scope of their role as an Advisory Group member. As per the requirements of AA1000SES 2011, the following information was included in the invitation:

- The purpose and scope of the engagement;
- The engagement process and timelines;
- What stakeholders are expected to contribute;

- The benefits to the stakeholder of being invited to participate;
- Logistical and practical information about the engagement;
- How to respond;
- Additional information that will be provided; and
- Next steps.

#### 4.4.2 Brief Stakeholders

Advisory Group stakeholders were informed both in the initial invitation and in person of the availability of briefing materials that provided further information on various aspects of the strategy development process. These materials included (Appendix 4):

- Green Growth Overview Briefing Paper (Appendix 4a);
- Green Growth Definition Briefing Paper (Appendix 4b).

Briefing materials were made available to Advisory Group members in good time in order to allow them to read and review the information. Members were prepared for their engagement with pre-meeting phone calls and email discussions as required. As per the requirements of AA1000SES 2011, the following information was communicated in the briefing materials:

- The purpose and scope of the engagement;
- The nature of the issues, why they are considered material and the risks and opportunities associated with them;
- How the issues are currently managed within the organisation;
- What policies and systems are already in place; and
- What the organisation can and wants to do about the issues.

The Briefing Papers were presented in a format that was easily accessible (PDF document) and laid out in such a way as to clearly highlight key points. Representatives of the STRING Partnership and Femern Logistics Platform were involved in the development of briefing materials in order to ensure its relevance to the remaining Advisory Group members. The document was provided in English. No disability or literacy issues were identified.

#### 4.4.3 Engage

Stakeholder meetings were held as follows (Table 4-4):

Table 4-4: Stakeholder meetings held under the stakeholder engagement process.

Date	Location	Attendees
20 March 2012	Hamburg – Ministry of Economy, Transport and Innovation Alter Steinweg 1-3, Hamburg, Germany	<i>Dr Rolf-Barnim Foth</i> (Head of Task Force, Northern German Co-operation, Hamburg Metropolitan Region) <i>Rieke Marxen</i> (City of Hamburg) <i>Beatrice Marx</i> (Ministry of Urban Development and Environment, Department for Federal and European Affairs)
20 March 2012	Schleswig-Holstein – Ministry of Science, Technology and Transport: Department of Economic and Regional Policy Düsternbrooker Weg 94, Kiel, Germany	<i>Stefan Musiolik</i> (Head of Baltic and North Sea Affairs) <i>Dr Dietmar Fabnert</i> (Ministry of Agriculture, Environment and Rural Areas) <i>Christa Häckel</i> (Department of Economic and

		Regional Policy) <i>Eileen von Eisner</i> (Baltic and North Sea Affairs)
22 March 2012	Region Hovedstaden – Regional Development Department Regionsgården, Kongens Vænge 2, Hillerød, Denmark	<i>Henrik Madsen</i> (Regional Development Manager)
23 March 2012	Region Sjælland – Regional Development Department Alleen 15, Sorø, Denmark	<i>René Lønnee</i> (Regional Development Manager) <i>Rebecca Rosenquist</i> (Project Co-ordinator, STRING Partnership)
26 March 2012	Region Skåne – Inter-regional Co-operation Department Dockplatsen 26, Malmö, Sweden	<i>Per-Olof Persson</i> (Head of Inter-regional Co-operation) <i>Peter Askman</i> (Environmental Strategist)
28 March 2012	Öresund Committee Nørregade 7B, Copenhagen, Denmark	<i>Finn Lauritzen</i> (Managing Director)
28 March 2012	STRING Partnership Nørregade 7B, Copenhagen, Denmark	<i>Jacob Vestergaard</i> (Managing Director)

#### 4.4.4 Document the Engagement and its Outputs

Minutes were kept of all meetings held with Advisory Group members (Appendix 5). Email correspondances were also recorded in the Consultation Matrix (Appendix 2). Copies of email correspondence are available on request.

The key outputs (e.g. queries, proposals, recommendations, agreed decisions and actions) that arose during the meetings are shown in Table 4-5 in the following section.

#### 4.4.5 Develop an Action Plan

An Action Plan detailing how each output of the stakeholder engagement process shall be addressed is given below (Table 4-5).

*Table 4-5: Action Plan for dealing with key outputs of stakeholder engagement process.*

Key Output	Overview and Proposed Actions
Difficulty in engaging with other Regional Partners	<p>Hamburg noted that the only real forum for discussion with other Regional Partners has been within the STRING Partnership, and that limited discussion has been achieved to date.</p> <p><i>Proposal(s):</i></p> <ul style="list-style-type: none"> <li>• Propose that each Regional Partner identifies representatives to fill a suite of ‘common’ GGS role titles within STRING context – i.e.: <ul style="list-style-type: none"> <li>○ Regional Manager;</li> <li>○ Environmental Specialist;</li> <li>○ Economic Specialist;</li> <li>○ Social Specialist;</li> <li>○ Administrative Liaison.</li> </ul> </li> <li>• GGS process to facilitate meetings and communication between identified roles in Regional Partners.</li> </ul>

Key Output	Overview and Proposed Actions
Differences in political approaches between Regional Partners	<p>Öresund Committee observed that differences in political approaches and processes between the Regional Partners may pose a barrier.</p> <p><i>Proposal(s):</i></p> <ul style="list-style-type: none"> <li>• Ask Regional Partners to propose appropriate methods and forum for ensuring their politicians communicate between regions.</li> <li>• Identification of common roles will serve to make liaising between Regional Partners more effective.</li> <li>• Higher level political interactions may be addressed within context of the final GGS.</li> </ul>
Potential political issues with wording of ‘green growth’	<p>Schleswig-Holstein found the wording of ‘green growth’ as being unhelpful in communicating the overall purpose of the study. Schleswig-Holstein identified a further potential political barrier in using the word ‘green’ in the German translation, which may erroneously link the GGS to the Green Party. Hamburg also noted that their mayor used the term ‘engineer-based environmental protection’ instead of green growth.</p> <p><i>Proposal(s):</i></p> <ul style="list-style-type: none"> <li>• Put the issue to the Regional Partners to resolve democratically. Options include changing name to another alternative (i.e. smart growth), or using the English version of ‘green growth’ instead of translating in official documentation (as this term is used by OECD and occasionally the EU).</li> <li>• Documentation should clarify that there is no party affiliation between green growth (or alternative selected term) and any particular political party.</li> </ul>
Key green growth objectives need to be clearly defined and how they are to be achieved set out	<p>Schleswig-Holstein highlighted the need for common approaches that can make better use of the policies and funds available, as well as to focus on a limited number of common thematic areas to make it easier to identify tangible results.</p> <p><i>Proposal(s):</i></p> <ul style="list-style-type: none"> <li>• The GGS is intended to achieve the above and will develop such objectives as part of a future study, in consultation and agreement with Regional Partners.</li> </ul>
Language as a potential barrier to co-operation	<p>Region Skåne pointed out that language differences between the Regional Partners (especially Scandinavian and German) may be a barrier.</p> <p><i>Proposal(s):</i></p> <ul style="list-style-type: none"> <li>• All participants speak and read English well – officially make English the common communication language for STRING.</li> <li>• Wider stakeholder consultation in later stages of the GGS process to consider the need for translation of disseminated project documentation.</li> </ul>
Lack of co-ordination at business level between member regions and across borders	<p>Region Skåne and the Öresund Committee noted that co-operation was minimal between business and industry associations (e.g. international industry conference where very few Swedish business representatives attended).</p> <p><i>Proposal(s):</i></p> <ul style="list-style-type: none"> <li>• GGS to address ways in which business and industry associations can co-operate to maximise benefits from green growth, with input from Regional Partners.</li> </ul>



Key Output	Overview and Proposed Actions
Need for consultation with broader stakeholders (i.e. industry associations, NGOs etc.)	<p>Region Sjælland and Region Skåne identified a need to involve broader stakeholders</p> <p><i>Proposal(s):</i></p> <ul style="list-style-type: none"> <li>• The present study is predicated on the need for broader stakeholder consultation in later stages of the GGS, once a definition and sectors have been agreed at a regional level.</li> </ul>
Concern on the use of the word 'strategy' and other proposed variants (i.e. 'White Paper')	<p>Region Hovedstaden raised a potential issue with the use of 'Strategy' and other variants as it may allude towards political requirements on Regional Partners that a STRING-level document may not have the required political support to achieve.</p> <p><i>Proposal(s):</i></p> <ul style="list-style-type: none"> <li>• Use of term 'White Paper' in early discussions was ceased.</li> <li>• Put the use of alternative wording such as 'Discussion Paper' or similar term to be used instead to Regional Partners.</li> </ul>
The term 'green growth' is primarily being used in rhetorical context in Regional Partners	<p>Region Hovedstaden pointed out that the term 'green growth' is generally used rhetorically by the various administrative structures, and that any approach to green growth needs to clarify exactly what is meant by the term and the potential structure of the process.</p> <p><i>Proposal(s):</i></p> <ul style="list-style-type: none"> <li>• The present study is intended to address this concern, and the GGS will clearly define both the term and the overall process based on a participative approach.</li> </ul>
The proposed green growth definition is too narrow	<p>Region Skåne considered the definition to be narrow in focussing on the climate – energy - low carbon approach, proposing the need to mention the preservation of ecosystem services.</p> <p><i>Proposal(s):</i></p> <ul style="list-style-type: none"> <li>• The comments from Region Skåne will be put to the Regional Partners collectively for review and an agreement will be reached democratically</li> </ul>
The term 'is balanced' in the proposed green growth definition is not adequate	<p>Region Skåne found issue with the term 'is balanced' in the proposed green growth definition as it was considered to be 'green wash' language.</p> <p><i>Proposal(s):</i></p> <ul style="list-style-type: none"> <li>• The comments from Region Skåne will be put to the Regional Partners collectively for review and an agreement will be reached democratically.</li> </ul>
Potential barrier in aligning the different approaches towards implementing green growth	<p>Region Sjælland noted that each regional administration appeared to address some potential green growth objectives in different ways, which may impact on the successfulness of aligning proposed GGS objectives.</p> <p><i>Proposal(s):</i></p> <ul style="list-style-type: none"> <li>• The present study and the GGS will examine each of the existing approaches to identified green growth objectives and identify a) whether there is a need for a common approach and b) what a common approach would entail for each administration. This will be put to the Regional Partners individually and collectively for review and feedback.</li> </ul>

Key Output	Overview and Proposed Actions
<p>Potential issues with the importance rating system used in the development of the green growth definition</p>	<p>Region Skåne found that the importance rating system used to develop the green growth definition potentially gave the impression that certain key concepts were considered less important than others, while in fact they are considered important but have been focussed on less due to the character of a given region's activities.</p> <p><i>Proposal(s):</i></p> <ul style="list-style-type: none"> <li>The system used is intended to show how the Regional Partners of the STRING Region collectively gauge the identified concepts. It is not intended to disregard or demote the importance of any given issue (especially to individual regions). To this end, future communications on the development of the definition shall clearly explain the above.</li> </ul>
<p>Need to ensure that green growth definition is representative of broader definitions and objectives used in the literature and by other important organisations (i.e. EU, OECD)</p>	<p>Region Sjælland raised a concern that a STRING-level green growth definition should represent wider OECD and other international definitions, in order to ensure the definition is relevant to higher-level and broader stakeholders.</p> <p><i>Proposal(s):</i></p> <ul style="list-style-type: none"> <li>The present study is intended to develop a definition participatively that draws from existing definitions in the literature.</li> </ul>
<p>Indicators to be used in the GGS should be aligned across STRING Region and with higher-level organisations (i.e. OECD)</p>	<p>Region Sjælland and Schleswig-Holstein pointed out that indicators should be compatible across the STRING Region as well as with relevant higher-level organisations.</p> <p><i>Proposal(s):</i></p> <ul style="list-style-type: none"> <li>The GGS shall identify potential indicators based on those used by higher-level organisations as well as those proposed or utilised by the Regional Partners under existing policy documentation. These will be submitted to the Regional Partners collectively for review and feedback.</li> </ul>
<p>Links between green growth and planning processes</p>	<p>Region Skåne, Schleswig-Holstein and the STRING Partnership noted a barrier in the complicated nature of planning structures in place both internally (i.e. different administrative levels in Sweden) and externally (i.e. differences between each region / country). Participants felt that this would necessitate a focus on aspects of planning across the STRING Region.</p> <p><i>Proposal(s):</i></p> <ul style="list-style-type: none"> <li>The GGS shall investigate and suggest solutions in consultation with Regional Partners to the potential barriers that varying planning process may present to implementing green growth objectives. These will be put to the Regional Partners for review and feedback.</li> </ul>
<p>Potential issues relating to cultural differences in approaches used by each Regional Partner</p>	<p>Region Skåne identified a number of potential cultural issues (especially between Scandinavian and German participants) and noted the need to establish links that account for these differences.</p> <p><i>Proposal(s):</i></p> <ul style="list-style-type: none"> <li>The GGS shall identify potential cultural issues in consultation with Regional Partners that may pose barriers to successful realisation of green growth objectives and propose solutions to resolving these. Solutions will then be provided to the Regional Partners for review and feedback.</li> </ul>

Key Output	Overview and Proposed Actions
Need for concrete results and recommendations from GGS	<p>Region Skåne and Schleswig-Holstein found that lots of visions on green growth and similar concepts existed but there were few if any actual recommendations on how these would be implemented.</p> <p><i>Proposal(s):</i></p> <ul style="list-style-type: none"> <li>• The GGS shall provide concrete directions on which approaches and actions are available to implement green growth objectives in each individual Regional Partner developed in co-ordination with each partner.</li> <li>• The GGS shall identify common fields and projects in the STRING Region that may be focussed upon.</li> </ul>
Minimising additional workload for participants	<p>Region Skåne noted that participants already co-operate in several other inter-regional forums, and that time management would benefit from linking stakeholder engagement to existing meetings schedules within other programmes.</p> <p><i>Proposal(s):</i></p> <ul style="list-style-type: none"> <li>• The GGS process shall identify opportunities to work within other programmes where stakeholders already meet regularly in order to minimise time requirements.</li> </ul>
Potential that ‘big’ industry (i.e. in wind sector) are setting the agenda on green growth	<p>Region Skåne were concerned that certain larger industrial players may be setting the green growth agenda and that any green growth objectives should take into account benefits for both large and small businesses.</p> <p><i>Proposal(s):</i></p> <ul style="list-style-type: none"> <li>• The GGS shall identify how green growth objectives relate to both large and small business, as well as potential opportunities for growth in each category.</li> </ul>
EU2020 goals (inclusive growth, smart growth, sustainable growth) should be central to GGS	<p>Schleswig-Holstein asserted that EU2020 goals were a key priority for the Regional Partners and that meeting EU2020 will be the requirement for cohesion policy after 2013. Consequently, the GGS should help to attain these goals. Also important for obtaining EU financing at regional level.</p> <p><i>Proposal(s):</i></p> <ul style="list-style-type: none"> <li>• The present study has taken EU2020 goals as a key reference point for developing green growth objectives.</li> <li>• The GGS shall identify how each green growth objective will contribute to achieving EU2020 goals.</li> </ul>
Relationship between green growth and sustainability	<p>Schleswig-Holstein was concerned that green growth may not be fully compatible with sustainability goals, particularly given that it has proven difficult enough to implement sustainability objectives to date.</p> <p><i>Proposal(s):</i></p> <ul style="list-style-type: none"> <li>• The present study notes this issue and prescribes to the view that the focus on economic growth under green growth, as well as general enthusiasm for green growth in national and international circles, makes green growth particularly well suited to drive the implementation of environmentally-sound policy.</li> <li>• One of the problems with sustainability is that the case for environmentally-sound economic growth has not been well made to date. To address this, the GGS shall propose concrete policy actions developed in co-ordination with Regional Partners to increase the chance that recommendations are adopted.</li> </ul>

Key Output	Overview and Proposed Actions
Consideration of social aspects within context of green growth	<p>Schleswig-Holstein and Region Skåne highlighted that the social issues should be considered important and in some Regional Partners are specifically addressed in regional policy documentation.</p> <p><i>Proposal(s):</i></p> <ul style="list-style-type: none"> <li>• The present study has focussed primarily on the development of a definition and identification of sectors for green growth. To this end, social aspects have been mentioned as part of the present study but in-depth analysis of these aspects has not comprised part of the remit of the study.</li> <li>• The GGS will consider the potential social impacts of green growth objectives and suggest ways in which problems can be mitigated and benefits maximised, in consultation with Regional Partners.</li> </ul>
Certain green growth sectors may be ascribed less importance by different Regional Partners	<p>Schleswig-Holstein and Region Skåne noted that certain green growth definition concepts and sectors, while they may be of importance in terms of green growth, may not be considered as key to one or more Regional Partner (e.g. agriculture). This may be an issue in achieving consensus should certain Regional Partners be at odds with the inclusion of a given concept or sector.</p> <p><i>Proposal(s):</i></p> <ul style="list-style-type: none"> <li>• The present study has adopted a participative approach that is intended to address this issue. Regional Partners will be consulted collectively on all key definition concepts and sectors identified during consultations and agreement shall be reached in this context.</li> </ul>

Further discussion of the key outputs generated during the iterations carried out in this thesis outlined above are presented in later sections.

#### 4.4.6 Communicate Engagement Outputs and Action Plan

All minutes of meetings were sent to meeting participants for review and confirmation. Any comments received were incorporated into the minutes and returned to participants for final review and confirmation.

As comments on the various iterations undertaken in the study were not finalised within the thesis timeframe, the Action Plan was not sent to the various participants. A version of the Action Plan will be delivered to the STRING Partnership for review and approval on 7 June 2012, with the approved plan distributed to the other Advisory Group members within the following week.

### 4.5 Act, Review and Improve on the Process

#### 4.5.1 Monitoring and Evaluation

The indicators developed in Section 4.2.5 were applied to the stakeholder engagement process in order to determine the overall performance of the process as follows:

- *Proportion of initial responses:* All seven of the identified potential Advisory Group organisations responded positively to involvement in the development of a GGS for the STRING Region (100% success rate).
- *Number of participants:* Table 4-6 gives the number of participants identified as being involved in the process by each Advisory Group organisation (see Consultation Matrix in Appendix 2). This indicator shows that of the Regional Partners, Region Hovedstaden is comparatively under-

represented. However, the Region Hovedstaden representative did commit to providing a further participant during the face-to-face meeting (see Minutes of Meeting in Appendix 5). A further participating entity that appears under-represented is the Öresund Committee. However, the organisation has very few direct employees and the nominated representative was the Managing Director. It was consequently not considered important to increase the number of participants from the Öresund Committee. A similar situation applies to the STRING Partnership, which fielded two representatives.

Table 4-6: Results of indicator measurements in the stakeholder engagement process.

Indicator	Advisory Group Member*						
	Hov (D)	Sja (D)	S-H (G)	Ham (G)	Ska (S)	Ore	STR
Proportion of initial responses (positive)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of participants	1	3	4	3	4	1	2

\* Key: Hov = Region Hovedstaden, Sje = Region Sjælland, Ham = Hamburg, S-H = Schleswig-Holstein, Ska = Skåne, Ore = Öresund Committee, STR = STRING Partnership.

### 4.5.2 Review of the Process

The stakeholder engagement process to date has proven to be useful in ensuring stakeholder concerns at the Advisory Group level have been considered in the development of a definition and identification of focus sectors for green growth. Nonetheless, an important component of the process is to ensure that strengths and weaknesses are identified and opportunities to improve the overall process are developed. This has been carried out in Table 4-7 below.

Table 4-7: Strengths and weaknesses of stakeholder engagement, and proposed opportunities for improvement.

Strength / Weakness of Process		Opportunities for Improvement
Strengths	All identified Advisory Group members indicated willingness to participate and perceived value in development of GGS	Use contacts of Advisory Group members to extend willingness to participate to wider stakeholders identified in Stakeholder Group.
	Each Regional Partner committed to putting personnel resources into providing regional documentation and data	Ensure that participants are made aware of the value of their contributions to ensure future participation.
	Desire to engage with wider stakeholders	Make future participants in the Stakeholder Group aware of the desire of Advisory Group members to discuss and incorporate their concerns in order to both build upon trust and maximise chance of wider engagement.
Weaknesses	Given that participation in the development of the GGS for the STRING Region was essentially voluntary (i.e. not a regionally-mandated task), not all participants were prompt in responding to requests for review and comment.	Propose that STRING Partnership approaches higher-level political representatives of each Regional Partner to garner political support for stronger engagement with GGS development process.
	Certain participants pushed their own agenda (i.e. renaming green growth)	Ensure feedback to participants highlights who has contributed and invites under-represented participants to participate further, potentially via alternative methods.
	Unable to include wider stakeholder consultation within study timeframe	Future iterations to take into account time limitations and to put more focus on regular feedback on overall participation to participants.
	Process took more time than anticipated	Future iterations to take into account time limitations.

### **4.5.3 Action Plan Follow-Up**

The Stakeholder Engagement Action Plan identified a number of key issues that the various Advisory Group members flagged as being important in the development of a GGS for the STRING Region. These can be separated in to two fields as follows:

- Issues relating to the present study, and
- Issues relating to the overall GGS process.

However, as responses to most issues were not received in suitable time for follow-up actions to be undertaken, only those issues relating to the present study have been included within the thesis. These are addressed under later sections of the thesis.

### **4.5.4 Report on Engagement**

The stakeholder engagement process carried out to date was to be reported on in a Preliminary Framework document. However, the development of this document was unable to be completed within the study timeframe.

## **5. Definition of Green Growth**

### **5.1 Purpose**

Developing a green growth definition that can be used within the STRING Region is important from a variety of perspectives. From a general standpoint, a definition should ‘set the scene’ for how green growth is to be achieved. However, no universal definition exists in the literature that can be directly utilised. Each organisation that defines green growth in the literature has typically developed its own definition. From a political perspective, a definition should also be aligned with existing policy objectives at regional, national and EU levels. From the wider stakeholder view, consultation on the development of the definition serves to inform of the potential benefits and possible negative outcomes that pursuing green growth may incur.

These factors in and of themselves do not necessarily preclude the use of one of the existing definitions. However, initial discussions with Advisory Group representatives identified the need for a definition that takes into account the unique conditions present within the Regional Partners, as well as the need to solicit wider stakeholder views on green growth. To facilitate this, it is useful to deconstruct existing green growth definitions into the key green growth concepts that could potentially be used in a green growth definition for the STRING Region.

### **5.2 Key Green Growth Concepts**

A review of the literature was carried out to identify the key green growth concepts that are used in green growth definitions found within the literature. In this analysis, a ‘green growth definition’ is defined as any explanatory text within a given document that provides an overall context for the meaning of the term ‘green growth’ (or the equivalent terms ‘green economy’ and ‘low carbon economy’). Similarly, a ‘key green growth concept’ (from henceforth: key concept) is taken to be any individual key phrase used in a green growth definition that defines one aspect of the overall definition.

Table 5-1 presents the key green growth concepts that were identified from definitions for green growth found in the literature. Ten definitions were found in the literature, from which 14 key green growth concepts were distinguished. The full list and coding used in determining the key concepts within identified green growth definitions is given in Appendix 5.

Initially, key concepts related to the three ‘pillars’ or sustainability (economic development, environmental issues and social considerations) were identified in the definitions. Where more specific key concepts were present, these were identified separately during the analysis. Numerous specific economic and environmental key concepts were ascertained. However, key concepts related to social objectives were addressed in similar terms within definitions that address social concerns, and as such were considered well covered by the single key concept ‘accounting for social goals’.

### **5.3 Consultation on the Definition**

The key concepts presented in Table 5-1 above were next presented to the Advisory Group. The purpose of this was to determine the perceived relevance and policy priority of each key concept within the context of each member’s overall policy objectives. It should be made clear that the comparative importance of the identified key concepts has not been subject to evaluation – no individual or group of key concepts has been identified as being any more or less important than any other. As a result of discussions with representatives of both STRING and the Öresund Committee, and taking into account the region-centric nature of consultation

Table 5-1: Key green growth concepts found within existing definitions in the literature.

Key Concept	Document(s) Concept is Present Within	No.
Fostering economic or GDP growth / development	(CDKN, 2011; GGL, 2011b; GTZ, 2011; ICC, 2011; OECD, 2011; SINGG, 2008; UNEP-ROAP, 2012; UNESCAP, 2010; WB, 2011)	9
Addressing environmental goals / risks	(GTZ, 2011; ICC, 2011; OECD, 2011; SINGG, 2008; UNEP-ROAP, 2012; UNEP, 2011b; UNESCAP, 2010)	7
Accounting for social goals	(CDKN, 2011; ICC, 2011; OECD, 2011; SINGG, 2008; UNEP-ROAP, 2012; UNEP, 2011b; UNESCAP, 2010)	7
Resource scarcity / efficiency	(CDKN, 2011; UNEP-ROAP, 2012; WB, 2011)	3
Addressing / adapting to climate change	(CDKN, 2011; GTZ, 2011)	2
Safeguarding natural assets / capital	(CDKN, 2011; OECD, 2011)	2
Green sector jobs / green job creation	(GGL, 2011b; GTZ, 2011)	2
Reducing GHG emissions	(CDKN, 2011; GGL, 2011b; UNEP-ROAP, 2012)	2
Changing production & consumption patterns	(ICC, 2011; SINGG, 2008)	2
Reducing waste / pollution	(UNEP-ROAP, 2012; WB, 2011)	2
Low carbon development	(UNESCAP, 2010)	1
Involvement of business / industry	(ICC, 2011; UNEP-ROAP, 2012)	2
Minimising impact on economic growth	(WB, 2011)	1
Increasing resilience	(CDKN, 2011; WB, 2011)	2

it was decided that only the Regional Partners would be asked to provide ratings in the development of a green growth definition.

Each Regional Partner was sent a Briefing Paper that asked them to complete an online 'Definition Survey' to provide a rating for each of the key concepts identified under the previous step. This was followed up with face-to-face meetings that sought to clarify the ratings given for each key concept in regions where the survey was completed, or to provide ratings where the survey was not undertaken due to time constraints. For the survey, each Regional Partner was asked to rate the importance of each key concept in relation to the prevailing policy in their region using the system shown in Table 5-2 on the following page. The system was designed to reflect an increasing level of policy priority that may have been accorded to a given key concept.

For each key concept, each Regional Partner was also asked to identify whether they knew of any documentation, programmes or responsible departments that deal with the key concept in question. This information was used in later analysis of how each key concept fit in to each Regional Partner's policy and implementation framework.



Table 5-2: Description of rating system for key green growth concepts used in Definition Survey.

Rating	Rating Description	Explanation
4	High priority	Concept is considered one of core aspects of regional policy
3	Frequently addressed	Concept is often considered and implemented in policy
2	Of some interest	Concept is addressed in policy but is usually side-lined by other policy
1	Dormant issue	Concept has been noted previously but not much has been done
0	Not important	Concept is not addressed in policy currently nor in the near future

The types of information requested were as follows:

- Documentation: any action plans, policy documents or any other documentation for the Region that deals with the key concept, including documents at National level that are used regionally.
- Programmes: any specific programme(s) in the Region dealing with the key concept, including programmes operated at National level that are implemented regionally.
- Responsible Department: any specific department in the Region responsible for developing and implementing policy on this key concept, including departments at National level that are represented regionally.

In total, five responses were obtained from the Regional Partners, representing each of the STRING member regions. The individual results of the surveys obtained from each Regional Partner are given in Appendix 7. Where a result was deemed by a Regional Partner as lying between ratings, a half-rating (i.e. 0.5) was provided. Figure 5-1 below presents the averaged results of the key concept rating, showing the mean of rating values for each key concept.

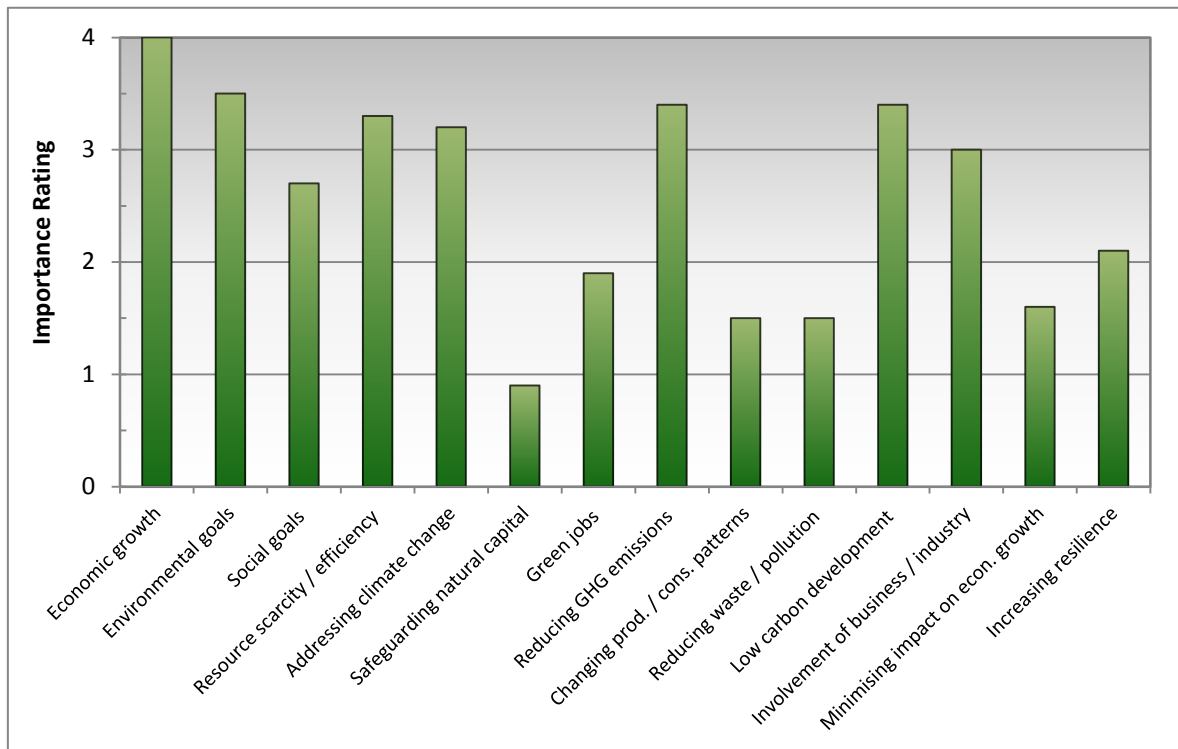


Figure 5-1: Averaged importance rating per key concept across the five Regional Partners.

## 5.4 Analysis of Results

### 5.4.1 Definitions in Literature Review

The review of key concepts from the literature showed that the three pillars of sustainability featured prominently in definitions. This is unsurprising as green growth is considered a sub-component of sustainability aimed at implementing policy aligned with sustainability goals (OECD, 2011). However, discussions within documents that define green growth relate primarily to actions that address sectoral environmental and economic concerns. While social issues are frequently mentioned in green growth definitions, they are either not discussed as a separate issue or not mentioned entirely. Clearly, addressing environmental problems is likely to see concomitant improvements in certain wider social concerns, such as gender equality, minimising health risks, behavioural changes and poverty alleviation. As such, it makes sense to incorporate social issues within a definition. This notwithstanding, ambiguity regarding the consideration of social issues in a definition is important as it was often not clear in the reviewed documents exactly what social goals are to be achieved. It is consequently recommended that if the Advisory Group chooses to state that consideration of social issues is part of the STRING Region green growth definition, the exact issues to be addressed should be clearly laid out, either within the definition or later in the document.

Similar themes of key concepts aligned with either economic growth or environmental issues are present throughout all the identified definitions. To elaborate, each definition contained at least one additional key concept that either related to economic growth in some form (e.g. green jobs) or actions to address environmental problems (i.e. GHG emissions reductions). Importantly, none of the identified definitions focused directly on a particular economic sector (i.e. transportation, agriculture). Definitions also did not contain any key concepts that directly conflicted with other concepts. What can be drawn from these observations is that to remain in keeping with existing definitions, any potential green growth definition should avoid specifying economic sectors within which green growth should be pursued.

### 5.4.2 Key Concepts Identified from Consultation

From the results, it is useful to examine the ratings given for the first three key concepts that represent the pillars of sustainability (economic, environmental and social issues) separately from the other key concepts, as responses to these key concepts provide a broader context within which the other more specific concepts are described. Of the three pillars, one clear and obvious result from the consultation was that ‘fostering economic growth’ was considered most important to all Regional Partners (4 for all partners). ‘Addressing environmental goals / risks’ was also ranked as being highly important on average (3.5), although only Region Sjælland gave a notably lower rating (2). Nonetheless, Region Sjælland does possess a Climate Strategy that addresses various environmental issues as part of a wider set of ‘action programs’ for identified economic sectors. Environmental issues are also reflected in climate strategies and regional development plans for the other Regional Partners. Consequently, both ‘economic growth’ and ‘addressing environmental issues’ can be considered to be key green growth concepts within the STRING Region.

The final pillar, ‘accounting for social goals’, was given a relatively lower average importance rating (2.7) as compared to the other pillars. There are varying ways to interpret this result. Firstly, a cohesive theme for social issues does not appear specifically within Regional Partner strategies (concerning both climate and business) and regional development plans, which may explain why this pillar is given less priority. In addition, the perception from the various Regional Partners is that many important social issues (such as gender equality) are fairly well addressed from both national and regional perspectives. On the other hand, many of the

sectoral actions contained within the strategies and development plans allude towards addressing certain social issues, such as improving access to health care and increasing dialogue between policy makers and the wider community. Given that seeking improvements in social issues can be considered an on-going process, it is argued that the key concept of social issues could be incorporated into a green growth definition in order to account for the social benefits that the various sectoral actions identified by each Regional Partner may realise.

From a general perspective, there was much variation in the individual ratings given by each Regional Partner to the remaining key concepts. Environmental issues relating to ‘addressing climate change’, ‘reducing GHGs’ and ‘low carbon development’ rated quite highly in the consultation on average (3.2, 3.4 and 3.4 respectively). ‘Resource scarcity / efficiency’ was also highly rated (3.3), although in discussions this concept appeared to be equated primarily with energy efficiency in buildings. These results are broadly in line with EU2020 goals on ensuring that climate change is addressed at member state and regional levels. Consequently, the aforementioned concepts could comprise a part of a green growth definition.

Of lesser relative importance was the concept of resilience (2.1). Discussions on resilience determined that regional documentation did not discuss resilience in terms of the concept as defined in the literature (see Holling, 1973; 2001). Instead, the concept is more interpreted in the context of ensuring that existing systems were made resilient to climate change impacts. On this basis, resilience is not considered of enough importance to the Regional Partners to be included in the definition. Other environmental key concepts rated with low importance included the safeguarding of natural capital / assets (0.9) and reducing waste / pollution (1.5). Given such low priority, these key concepts are also scoped out.

Several key concepts were more directly related to economic concerns. Issues relating to green jobs, minimising impacts on economic growth and changing production and consumption patterns were rated as being of lower importance in the consultation (1.9, 1.6 and 1.5 respectively). These key concepts are consequently not considered important in the context of the green growth definition. However, the ‘involvement of business / industry’ in achieving green growth was rated with high importance (3). This result reflects the fact that ‘greening business’ features prominently within the various strategies and plans of the Regional Partners. As a result, this key concept is considered relevant for a green growth definition.

## **5.5 A Green Growth Definition for the STRING Region**

### **5.5.1 Initial Preparation of Definition**

In order to ensure a definition for green growth for the STRING Region is accepted by all Regional Partners (and inter-regional bodies), the definition must fulfil a number of criteria. The overall purpose of the criteria is to ensure that the definition satisfies the broad objective of achieving green growth in the STRING Region. These criteria are defined as follows:

- Be in keeping with existing definitions for green growth in the literature,
- Align complementarily, as far as possible, with the overall policy objectives of each Regional Partner, national government and the EU,
- Align with the types of policy objectives proposed in the literature for green growth, and
- Clearly set out the broad strategic directions that are required to achieve green growth.

For the definition to fulfil the above criteria, it should also cover, either explicitly or implicitly, each of the key concepts identified as being of importance to the Regional Partners during consultations on the development of a green growth definition (Section 5.4.2). Key concepts that were identified in this analysis fit into two categories, comprising the following:

- Pillars of sustainability:
  - Fostering economic or GDP growth / development,
  - Addressing environmental goals / risks,
  - Accounting for social goals,
- Specific key concepts:
  - Resource scarcity / efficiency,
  - Addressing / adapting to climate change,
  - Reducing GHG emissions,
  - Low carbon development,
  - Involvement of business / industry.

Given the separation of key concepts, it was recommended to adopt a two-part definition – the first to provide a general definition for green growth that integrates the broad sustainability objectives, and the second to relate to the specific key concepts identified in the analysis. To this end, the following initial definition of green growth for the STRING Region was proposed:

“Achieving ‘green growth’ means putting in place policies and strategies in identified economic sectors that encourage environmentally and socially responsible economic development. Within the STRING Region, this translates as addressing climate change by reducing harmful emissions, using energy and resources efficiently, and supporting business and industry in innovating and implementing green, low carbon approaches.”

## 5.5.2 Consultation with Stakeholders

### 5.5.2.1 STRING Comments

Preliminary consultation regarding the definition with the STRING Partnership (Jacob Vestergaard, 19 April 2012, pers. comm.), provided the following comments:

“The priorities [in the proposed definition] are clearly expressed with economic growth as number one - so maybe you could ad[d]ress the need for growth and the need for a reaction to reduce climate change. That in turn feeds a STRING answer/strategy where we support/encourage economic growth sectors that reduces emissions and show social responsibility[. Also,] refer[er]ence to EU2020 might be a good idea in the definition - at the end showing that we are in compliance.”

In response, two definitions were prepared as follows:

*(Version 1 - without EU2020):*

“The term ‘green growth’ recognises the need for economic growth that is balanced with environmentally and socially responsible economic development. Within the STRING Region, this means putting in place policies and strategies in identified economic sectors that address climate change by reducing harmful emissions, using energy and resources efficiently, and supporting business and industry in innovating and implementing green, low carbon approaches.”

*(Version 2 - with EU2020)*

“The term ‘green growth’ recognises the need for economic growth that is balanced with environmentally and socially responsible economic development, above and beyond compliance with European policy requirements (i.e. EU2020). Within the STRING Region, this means putting in place policies and strategies in identified economic sectors that address climate change by reducing harmful emissions, using energy and resources efficiently, and supporting business and industry in innovating and implementing green, low carbon approaches.”

From these, Mr. Vestergaard indicated that the former, non-EU2020 iteration was suitable for submission to the other partners (19 April 2012, pers. comm.). This definition was sent to the

identified Regional Partner representatives on 7 May 2012 and participants were given two weeks to respond with comments. Responses were received from Region Skåne and Schleswig-Holstein within the allocated time period.

### **5.5.2.2 Region Skåne Comments**

Region Skåne responded with comments in two emails presented in abridged versions as follows (Peter Askman, 8 & 16 May 2012, pers. comm.):

*Region Skåne – Green Growth Definition Email 1:*

“The graph in the summary paper may give the impression that we regard some of the issues less important. That is not the case, we just have not focused on them due to the character of our activities. They may be more relevant for other players (in some way ‘dormant’ for us), but with that said, we [do not] regard them as unimportant from a holistic view! Anyway, I don’t fully understand the purpose of the importance rating, I cannot see how it contributes in a constructive way to the concept. I would also like to underline that social issues are high on the agenda in Region Skåne and are specifically addressed [in regional documentation].”

*Region Skåne – Green Growth Definition Email 2:*

“My main objection to the definition is that it is too narrow, focusing on the ... climate – energy – low carbon approach. You need to consider generally the preservation of ecosystem services in the definition. [The term] ‘is balanced’ is not adequate, it’s a hollow phrase, green wash language, not usable. ‘[U]sing energy and resources efficiently’ should be included, but it does not necessarily mean that you [cover the issue] from the view of available natur[al] resources. However, if you include something like ‘...economic growth that takes account of the limited natural resources and the vulnerability of ecosystem services in a long term perspective’ - it makes sense.”

The above comments raised several key issues with the definition. The first was that the process of identifying common key concepts for the STRING Region can result in certain green growth concepts appearing to be of less importance at the individual Regional Partner level. This is a problem of interpretation. The nature of the approach utilised is that an ‘averaged’ importance value at the STRING level is developed from each of the survey responses of the Regional Partners. These values are intended to represent importance at the STRING level only. In response to the initial email, it was decided to provide a clearer explanation of the purpose and interpretation of the importance rating in the Stakeholder Action Plan to be sent to the Advisory Group members after thesis submission.

The second issue was that social issues are considered important to Region Skåne but the representative felt that efforts to address social concerns in the region were not well communicated within the green growth definition. The problems associated with addressing individual social concerns within the context of green growth in the present study have been raised previously in this thesis and form a defined limitation of the study. These problems had also been communicated to Advisory Group members in the initial Briefing Paper. Further, the comment appeared to be made in order to underline Region Skåne’s efforts within the social policy arena, rather than to argue for additional clarification within the definition. Consequently, it was decided that the problems relating to addressing social issues within the context of green growth would be re-explained in the Stakeholder Action Plan.

The final issue was related to perceived ‘narrowness’ of the green growth definition in focussing primarily on climate, energy and low carbon concepts. Region Skåne argued to widen the scope of the definition to include the preservation of ecosystem services and minimisation of natural resource use. However, in the key concepts survey, the region declined to provide an importance rating for the key concept ‘Safeguarding natural assets / capital’, under which ecosystem services and natural resource conservation would be included

(Appendix 5e). The same key concept was further accorded low overall importance by the other Regional Partners (see Figure 5-1).

At the same time as perceiving the definition as being too narrow, Region Skåne also viewed the use of the wording ‘balancing’, in relation to balancing economic growth with environmental and social concerns, as being too vague for the definition, to the point of ‘greenwashing’. The fact that the word ‘balancing’ is vague was arguably a valid point. However, the purpose of the definition is to ensure that green growth objectives can be related back to the original definition. Region Skåne’s proposed alternative (‘economic growth that takes account of the limited natural resources and the vulnerability of ecosystem services in a long term perspective’) would mean that social issues in the definition may be completely disregarded, despite social concerns being rated as highly important to both Region Skåne and the other Regional Partners. As a result, it was decided to consult the Advisory Group within the Stakeholder Action Plan on the form that these concepts should be included.

### 5.5.2.3 Schleswig-Holstein Comments

Schleswig-Holstein responded with a number of comments in the following abridged version of their reply email (Stefan Musiolik, 18 May 2012, pers. comm.):

*Schleswig-Holstein – Green Growth Definition Email:*

“1) I still have severe doubts whether it is helpful to use the phrase ‘green’ growth strategy. From my point of view this should be changed. Unfortunately this problem hasn’t been tackled in the Green Growth Definition Paper from 3rd May 2012. In that respect I share the point of view of Stefan Herms (Senate Chancellery Hamburg) who recently pleaded in the same direction: “I think a perspective like ‘smart growth’ or ‘potential for smart growth and cooperation in the region’ would be more in the interest of our region and better to sell (which means: building consensus, that this regional cooperation bears perspective) for Hamburg (Stefan Herms, [e]mail May 3rd).

2) I very much appreciate the link [in the definition] to the EU2020 strategy because this is the central framework for the cohesion policy after 2013. The question ... is how to create sustainable growth and higher competitiveness through cross border projects. To give the STRING activities more focus and direction, it is necessary to define key objectives more clearly and set out how they are to be achieved ... in order to be more successful in gaining EU-funding within the next funding period 2014 – 2020. The outcome of the [GGS] should help us to find those areas of common strength and interest and to deduce key projects ... for the next EU funding period.

3) I personally underline your conclusions under the headline ‘synthesis of results’: “Clearly the three pillars of sustainability (economic, environmental and social issues) were considered important by the majority of participants.” That means a wider understanding of green / smart / sustainable growth which cannot be reduced to pure environmental matters.”

There are three key comments present in the above comments on the green growth definition. The first relates to the use of ‘green’ in the term ‘green growth’. This was an issue raised during the face-to-face meeting held in March. The argument then, as now, was that the participants in German-speaking regions feared that the word ‘green’ would relate the concept of green growth to the German Green Party, which may cause other political parties to distance themselves from taking actions in case these are later associated with the Green Party. Nonetheless, it would be difficult to change the wording of green growth as it is an established term that is in use by the OECD and UNEP. Further, the proposed alternatives may not be appropriate. ‘Smart growth’ is already used in the literature to refer to an existing theory of ‘compact cities’ that consider community design and development, environmental protection and public health (Smart Growth Network., 2006), and in the context of the EU2020 growth strategy refers primarily to research and development, innovation and education. Similarly, the

literature review has already shown that ‘sustainable growth’ is poorly defined in the literature, although EU2020 essentially treats sustainable growth as equivalent to green growth. In comparison, the term ‘green growth’ neatly covers both the smart growth and sustainable growth sub-components of EU2020. Given the above discussion, it was decided to consult with the entire Advisory Group on the overall wording to be used to describe ‘green growth’ within the Stakeholder Action Plan to be sent after thesis submission

The second issue raised was that key green growth objectives needed to be defined, and that actions to be taken to achieve these objectives should be clearly set out. This has proven to be a common point of agreement throughout discussions with the Regional Partners. However, such objectives need to be developed in the context of an agreed green growth definition and set of focus sectors, and are to be the subject of a future study. To address this, the need for consensus on the definition and sectors is to be explained in the Stakeholder Action Plan.

The final comment brought up by Schleswig-Holstein was that it was considered important to mention social issues within the context of green growth. This is effectively the same as the second comment raised by Region Skåne in the previous section, and actions taken to address this concern are described there.

### **5.5.3 Outcome of Consultations**

No final green growth definition was agreed within the thesis timeframe, although discussion on the issues raised during the consultation is expected to result in the definition being agreed within the weeks following thesis submission. Nonetheless, it was clear in the context of the work undertaken in this iteration that there were broad similarities in the types of key green growth concepts that the Regional Partners were interested in pursuing. This was especially true of regarding the inclusion of the three aspects of sustainability within the definition. While discussions on reaching final consensus on the definition were on-going at the time of thesis submission, no real barriers to the successful completion of the task were discerned.

There are also a number of lessons to be learned from the activities undertaken during the consultation. Firstly, the approach of developing a list of key concepts for later discussion, as opposed to developing the key concepts in consultation with stakeholders, required less time from the participants and ensured that the key concepts that were discussed were already articulated in existing literature. Further, no participant pointed out any additional key concepts during the consultation. This may indicate that the key concepts identified in this study were broadly representative of those that could potentially be raised by the participants, although it should be noted that participants may also have felt unknowledgeable on the topic or simply chosen not to contribute for social, political or other reasons.

A second lesson was that face-to-face consultations were extremely useful in securing participation in the survey. Three of the five Regional Partners had responded to the survey prior to the meetings. However, it was a relatively simple procedure to quickly carry out the survey in person, and it served a dual purpose of helping to identify any regional documentation relating to each concept. Possession of the three survey responses was also useful in that it provided a frame of reference for discussion during the meetings, and any misunderstandings or mistakes from participants could quickly be addressed in the meeting.

One of the negative outcomes of the consultation was that the feedback period for comments on the definition itself proved to be too short to allow for sufficient discussion and consensus. Potentially this could have been addressed with a further follow-up face-to-face meeting with each Regional Partner, although resources to carry this out were not available.

## **6. Identification of Green Growth Sectors**

### **6.1 Purpose**

There are numerous sectors and sub-sectors within which policy actions to foster green growth may be pursued. A ‘sector’ is any defined sub-division of an economic area of activity. The purpose of this section is to identify those sectors that are relevant to green growth within the literature and of interest to the Regional Partners that should be subjected to further policy analysis.

A secondary objective is to develop a common and agreed suite of sectors for the STRING Region within which green growth may be applied. While many sectors are known by a generally-agreed name (i.e. Agriculture), there are a number of sectors that are referred to by a variety of names by different actors. These sectors in turn may contain sub-sectors which also tend to have divergent naming conventions that may not always be equivalent. For example, the ‘Farming’ sub-sector can take in any crop or livestock activity, while the ‘Food’ sub-sector is related only to those crops and animal products destined for human consumption. In addition, there can be some cross-over between certain sectors. For instance, the ‘Construction’ sector is often referred to as part of the ‘Buildings’ sector despite construction activities occurring within other sectors. Similarly, the ‘Infrastructure’ sector covers activities in numerous sectors, including Buildings, Energy, Transport, Waste and Water (Institution of Civil Engineers, 1996). Aligning and agreeing upon sectoral naming conventions in the STRING Region permits better measurement and comparison of the sectors within and between the Regional Partners.

### **6.2 Identification of Focus Sectors**

#### **6.2.1 Sectors Identified in the Literature**

A review of the literature on green growth and related terms (green jobs, low-carbon growth) was carried out to identify any mention of particular sectors where green growth could be achieved. The purpose of this task was to develop a list of potential focus sectors for green growth that were indicative of the sectoral categorisations present in the literature. The review excluded regional documentation (i.e. policy and strategic documents) that are addressed in the following section.

A ‘potential focus sector’ in this context is taken to refer to any distinct division of an economy or sphere of activity within which green growth may be pursued. Beneath these sectors, any relevant sub-sectors have been identified. ‘Sub-sectors’ refers to those sectoral divisions that are specifically mentioned in the context of the overall sector. Sectors and sub-sectors examined included existing sectors which may be targeted with green growth policies (i.e. agriculture), as well as recent and emerging green growth sectors that purport to encourage environmentally-sound economic growth (e.g. cleantech).

Table 6-1 presents the results of the review, which are given in full with references to individual documents in Appendix 8. In total, 17 potential green growth sectors and 34 sub-sectors were identified from the 22 documents reviewed.



Table 6-1: Potential green growth focus sectors that were identified during the literature review.

Potential Focus Sectors	Sub-sectors	No. Docs. Present*	Potential Focus Sectors	Sub-sectors	No. Docs. Present*
Agriculture		13	Ecosystem services & biodiversity		1
	<i>Farming</i>	2	Extractive (mining, natural resources)		3
	<i>Food</i>	1	Forestry (wood processing)		10
	<i>Fruit and Vegetables</i>	1	Fisheries		4
	<i>Land (land-use, land-use change)</i>	2		<i>Aquaculture</i>	1
	<i>Livestock</i>	1	Industry (industrial)		13
	<i>Organic Agriculture</i>	2		<i>Manufacturing</i>	6
Buildings		11		<i>Materials efficiency</i>	1
	<i>Commercial</i>	2	Infrastructure		1
	<i>Energy Efficient Buildings</i>	2		<i>Cities</i>	1
	<i>Heating</i>	1	Rural development		1
	<i>Residential</i>	5	Services		6
	<i>Retrofitting</i>	1		<i>Environmental Consultancy</i>	1
Construction		7	Technology (high-tech, env. technologies)		3
Business		2		<i>Cleantech</i>	5
	<i>Banking</i>	1		<i>Pollution Abatement</i>	1
	<i>Env. Goods and Services</i>	3		<i>ICT</i>	1
	<i>Small &amp; Medium Enterprises</i>	1	Tourism (eco-tourism, travel)		4
Energy		15	Transport (transportation)		17
	<i>Biodiesel (ethanol)</i>	3		<i>Public Transport</i>	1
	<i>Electricity (power)</i>	4	Waste (waste management, disposal)		8
	<i>Nuclear</i>	1		<i>Recycling (remanufacturing, recovery)</i>	5
	<i>Renewable Energies</i>	12	Water (water services, water management)		8
	<i>Energy Efficiency</i>	3		<i>Freshwater (provision, catchments &amp; irrigation)</i>	3
	<i>Solar</i>	2		<i>Sanitation</i>	2
	<i>Wind</i>	3			

Note a) – Potential focus sectors and sub-sectors that have been identified with the adjectives “green”, “sustainable” or “low-carbon” (i.e. green buildings) have been shortened to their base sector name (i.e. buildings) for the purposes of this exercise.

Note b) – Words in brackets are considered synonymous with the identified sector / sub-sector and count towards the total of documents.

\* No. of Docs. Present – Number of documents in the literature review where potential green growth focus sectors were identified.

## 6.2.2 Sectors Identified in Regional Documentation

Regional documentation, in the form of policies, plans and strategies, were reviewed in order to identify potential green growth focus sectors explicitly or implicitly referred to in administrative documents. The objective of this task is to generate a list of potential focus sectors of importance to each Advisory Group member.

Table 6-2 below summarises the potential focus sectors drawn from relevant regional documentation. A focus sector may be either explicitly mentioned by name in a document, or implicitly referred to through a course of actions that would materially affect the development of the focus sector. Identified focus sectors have been categorised according to the sectoral naming conventions identified in Section 6.2.1 to maintain consistency. A more detailed overview of the documentation reviewed and the focus sectors identified within regional documentation is given in the following sub-sections.

Table 6-2: Summary of focus sectors drawn from policies, plans & strategies of each Advisory Group member.

Potential Focus Sectors	Advisory Group Member*						
	Hov (D)	Sja (D)	S-H (G)	Ham (G)	Ska (S)	Ore	STR
Agriculture (food, foodstuff)		X	X	X	X	X	
Buildings	X	X	X	X	X		
Business	X	X					
Construction	X	X					
Education	X	X	X			X	X
Energy (biogas, energy efficiency, heating, renewables, wind)	X	X	X	X	X		X
Environment (climate, open land)	X	X	X	X			
Forestry			X				
Governance (regional co-operation, administration)		X		X			
Health & Medical (life science, medical devices, pharmaceuticals)	X	X			X	X	X
Industry (manufacturing)	X	X		X	X		X
Media				X	X		
Mining (natural resources)		X	X				
Public sector (procurement, city training)	X	X			X		
Research (science, materials science)		X			X		X
Services				X	X		
Technology (cleantech, products, information and communications technology, mobile communications)	X	X			X	X	
Tourism (cultural resources)		X	X	X	X	X	X
Transport (logistics, maritime, mobility)	X	X	X	X	X	X	X
Urban development (towns, cities)	X	X	X	X	X	X	X
Waste	X		X				
Water		X					

Note: Words in brackets signify those sub-sectors or related keywords which are related to the overall potential focus sector.

\* Key: Hov = Region Hovedstaden, Sje = Region Sjælland, Ham = Hamburg, S-H = Schleswig-Holstein, Ska = Skåne, Ore = Öresund Committee, STR = STRING Partnership.

### 6.2.2.1 Region Hovedstaden

Region Hovedstaden has adopted sustainable growth as one of the core principles guiding its policy development. The newest iteration of the 'Regional Development Plan' (*Den Regionale Udviklingsplan*) for 2012 highlights four key areas within which the region intends to pursue growth: business, education, climate and transport. Actions under the 'climate' heading include being climate ready vis-à-vis rising water levels and other climatic uncertainties, promoting green transport (with focus on cycling), increasing renewable energy sources, energy-efficient buildings and green procurement. Other issues of interest include entrepreneurship, innovation, research and supporting business.

The 'Business Development Strategy' (*Erhvervsudviklingsstrategien*) 2011-2013, developed by the Capital Region Growth Forum (*Hovedstadsregionen Vækstforums*), identifies six areas considered particularly important with regard to ensuring growth, comprising health technology, attractive city with good transport connections, innovation and research, talent and skills, business clusters and entrepreneurs. The strategy specifically addresses the need for 'green solutions and sustainability', with sectoral references to energy efficiency, cleantech, construction, transport, industry and waste management.

'Fingerplan 2007' is an urban planning document for the capital, inceptioned in 1947, that encourages growth to occur along defined 'fingers' radiating out from the city centre while identifying the need for green space between each finger. The plan is mostly concerned with environmentally-sound urban development, with focus on transport, construction and building sectors.

Region Hovedstaden and the Local Government Regional Council (*KKR Hovedstaden*) on 7 September 2011 also entered into a regional transport agreement called 'Investing in the Future' (*Investeringer i Fremtiden*) in which the region and municipalities agreed on necessary investments in infrastructure. However, no mention is made in the document of the environmental benefits or the sectors that would benefit from improving transport connections.

### 6.2.2.2 Region Sjælland

Region Sjælland explicitly identifies focus sectors in several documents. Primary among these is the 'Regional Development Strategy' (Dan.: *Den Regionale Udviklingsstrategi*), which establishes strategies and visions for various issues, including population, education, environment and sustainability, infrastructure / public transport and rural / remote areas. A strong focus is put on consideration of the environment and using innovation to drive environmental improvements and economic growth. Sectors identified as being of particular interest comprise construction, manufacturing, cleantech, energy, environmental, pharmaceutical, medical devices, transport, food, agriculture and tourism.

The 'Regional Climate Strategy' (*Den Regionale Klimastrategi*) of 2008, developed jointly by published by Region Sjælland and the Local Government Regional Council (*KKR Sjælland*), identifies a number of distinct areas that require action to address climate change. Areas highlighted as requiring specific actions include energy, agriculture, industry and technology, transport, towns and buildings, open land (relating to adaptation to climate change and biodiversity), health and governance.

The Sjælland Growth Forum (*Vækstforum*) in 2010 produced a 'Business Development Strategy' (*Erhvervsudviklingsstrategi*) for 2011-2014. This strategy is focused primarily on the types of actions the Growth Forum will take to encouraging economic growth in both existing

and emerging sectors. Sectors identified as being of interest in the strategy include energy, environment and health. Innovation, research and development, entrepreneurship, education and co-operation with other regional centres are also targeted in the strategy.

The Region is responsible for the planning and mapping of natural resources, and to this end has prepared a 'Mining Plan' (*Råstofplan*). The current plan for 2008 identifies sand, gravel, stone and clay and limestone and chalk as the main resources of interest in the region. Some 35% of the mined resources that are produced are exported, primarily to other regions in Denmark. The plan notes relationships between the mining sector and numerous other areas, including transport, energy, agriculture, cultural resources, cities, water resources and the environment. A new version of the Mining Plan (2012-2023) is currently under preparation and shall be released mid-2012.

A 'Strategy for Health Innovation in Region Sjælland' (*Strategi for Sundhedsinnovation i Region Sjælland*) was established in 2011 by the Regional Council of Region Sjælland. This strategy combines the responsibility for operation and development of health services in regional development, focusing on concept development, prototyping and commercialization in co-operation with private companies. The major focus is on the health sector and although no direct reference to environmental considerations is present in the strategy, the strategy does acknowledge links to other sectors including buildings, technology / IT and procurement.

Region Sjælland have also developed in 2011 a 'Draft Policy on Public-Private Co-operation' (Danish: *Politik for Offentlig-Privat Samarbejde - Udkast*). The purpose of the policy is to focus on and prioritize future co-operations between Region Sjælland and private companies (Region Sjælland, 2011). While the draft policy document does not specifically focus on green growth or environmental issues, it does identify buildings, procurement and health as being focus sectors. It also emphasises the need for innovation to be central to public-private co-operation.

### **6.2.2.3 Schleswig-Holstein**

Schleswig-Holstein has two key policy documents that drive growth in the region. The 'Regional Development Plan' (Ger.: *Landesentwicklungsplan*) of 2010 incorporates sustainability concepts within its remit; however, a large component of the plan relates to dealing with a declining and aging population, with significant focus on the urban development and infrastructure required to accommodate such a change. Highlighted sectors for the region include buildings, tourism, wind and renewable energy, transport and infrastructure, education, energy efficiency, natural resources and maritime industry.

The second document, the 'Integrated Energy and Climate Strategy' (*Integriertes Energie- und Klimakonzept*), covers such sectors as renewable energy, energy efficiency, heating, biomass and biogas, forestry, agriculture and waste management. While the focus is overwhelmingly on energy, the strategy recognises the links and opportunities that addressing climate change entails.

Both of the above policy documents have been developed based on the analyses and objectives produced in two reports produced in 2009: the 'Climate Change Report' (*Klimaschutzbericht*), and the Sustainability Report (*Nachhaltigkeitsbericht*). These reports contain recommendations in sectors that are broadly parallel with those presented in the key policy documents.

#### 6.2.2.4 Hamburg

Hamburg has put significant emphasis on addressing climate change in recent years, which has been formalised in the ‘Hamburg Climate Action Plan 2007-2012’ (*Hamburger Klimaschutzkonzept 2007-2012*). The plan centres on the reduction of GHG emissions, to be achieved through reductions in the following 12 areas:

1. Energy supply;
2. Energy savings;
3. Renewable energy;
4. Energy efficiency increase;
5. Energy networks;
6. Adaptation to climate change;
7. Modernisation of buildings;
8. Industry and plant technology;
9. Role-model function of Hamburg’s administration;
10. Mobility (transport);
11. Research for climate change;
12. Communication of climate change and awareness raising.

Buildings are one of the key sectors within which GHG emissions reductions have been targeted. In July 2008, Hamburg passed the ‘Hamburg Climate Change Ordinance’ (*Klimaschutzverordnung*), a regulation aimed at the reduction of energy requirements, energy efficiency and increased use of renewable energy in the building sector (Hamburg Municipality, 2008). The industry sector has been targeted under the partnership programme ‘Enterprise for Resource Protection’ (*Unternehmen für Ressourcenschutz*), with subsidies supporting voluntary investment in energy and resource efficiency in enterprises.

Although it has a relatively low area of agricultural land, Hamburg has an EC-approved Rural Development Plan, named ‘City Land River - Plan of the Free and Hanseatic town of Hamburg for Rural Development for the period 2007-2013’ (*Stadt Land Fluss - Plan der Freien und Hansestadt Hamburg zur Entwicklung des ländlichen Raums für den Zeitraum 2007-2013*), which aims to increase competitiveness, maintain and improve the environment and habitat quality, and secure the structural development of agriculture and land protection in the context of a diverse and lively cultural landscape (EC, 2010a). The service sector in Hamburg is also noted to be a large component of the economy (EC, 2010a).

#### 6.2.2.5 Region Skåne

In Skåne, the ‘Regional Development Programme 2009-2016’ (Swe.: *Regionalt Utvecklingsprogram för Skåne*) was recently passed into law and serves as the principal steering document for addressing environmental and social concerns. Sustainability is a key aspect of the document, with action promised in the following areas:

- Development of environmentally-friendly products and knowledge;
- Use of climate-friendly purchasing methods in the public sector;
- Switch of power supplies to sustainable forms of energy;
- Transition to biogas, preferably in combination with electric hybrids, in the transport sector;
- Sustainable urban development that includes investments in public transport and improved insulation of buildings that are constructed in a sustainable manner;
- Invest in nutritious local foods in order to minimise long-distance transportation of foodstuffs.

Innovation is another key regional policy objective, with much focus put on innovation within business and industry. To this end, the region has produced an ‘International Innovation Strategy for Skåne 2012-2020’ (*En Internationell Innovationsstrategi för Skåne 2012-2020*) with a vision to become Europe’s most innovative region by 2020. This strategy finds the greatest potential for innovation in the region within the areas of personal health and smart, sustainable cities and regions. Sectors where innovation potential is noted as being strongest include materials science, food, media, mobile communications, tourism, logistics, packaging, cleantech, city training and life sciences.

#### **6.2.2.6 Öresund Committee**

The Öresund Committee produced an ‘Öresund Regional Development Strategy’ (Dan. / Swe.: *Øresunds Regional Udviklings Strategi / Utvecklings Strategi*), which provides a vision and strategy for achieving the numerous potentials of the Öresund Region as a border region. While the document identifies the creation of a common labour market as its key goal, it identifies four themes under which this can be pursued:

- Knowledge and innovation,
- Culture and events,
- A diverse yet cohesive labour market,
- Accessibility and mobility.

The strategy identifies several strategic sectors under each of the above themes, which include life science, clean technology, information and communication technology, foodstuffs, tourism, healthcare, education, transport and infrastructure. The development of a green corridor is also highlighted as an integral part of the strategy. However, the document does not go into any great depth on broader environmental or sustainability actions to be undertaken in the identified sectors.

Beyond the above strategy, the Öresund Committee is developing an ‘Öresund Regional Climate & Cleantech Strategy’ which will comprise a mapping exercise for specific sectors aimed at aiding with the pooling of resources across the Öresund Region (A.R. Rosenquist, 23 March 2012, pers. comm.).

#### **6.2.2.7 STRING Partnership**

From 2009 to 2011, the STRING Partnership made a declaration, action plan and agreement detailing a common vision for the STRING Region and the key areas of action that the Partnership will focus on in the future. Sustainable regional development and innovation are key themes present throughout these documents. The ‘Lübeck Declaration’ of 2009 identified several focus areas for future co-operation, including transport and infrastructure, science and research, tourism, labour market and social responsibility, sustainable development and climate protection, culture and education, and co-operation and information. Sectors that were recognised as being key strengths in the STRING Region included transport, materials science, life science, tourism, education, renewable energy and the maritime industry. The ‘STRING Action Plan 2010’ expanded upon the focus areas identified in the declaration by listing a number of key actions and projects to be undertaken in the context of the STRING co-operation. However, no additional sectors are identified in this document.

The ‘Zealand Agreement’ of 2011, building upon previous agreements, highlighted a number of the most competitive sectors within the STRING Region for actions to be taken. The agreement also specifically noted the need for green growth along the STRING corridor. The competitive sectors identified comprise the following:

- Material science,
- Life science,
- Cleantech,
- Transportation and logistics,
- Food industry,
- Media industry,
- Tourism.

## 6.3 Consultation on Focus Sectors

### 6.3.1 Presentation of Identified Sectors

Potential focus sectors identified as being of importance in the previous Sections 6.2.1 and 6.2.2 were presented to the Regional Partners in order to determine which sectors were of most overall importance in the STRING Region. Consultation with the Öresund Committee and STRING was not carried out within the timeframe in order to ensure that sectors of importance to the Regional Partners were identified first. A list of sectors was made that amalgamated the main sectors identified in the previous two sections, using sub-sectors as examples of the types of sectoral activities (presented in Table 6-3). A total of 20 sectors were identified from the 24 documents reviewed.

Using this list, a Sectoral Survey was carried out with representatives from each of the Regional Partners that asked each person to:

- a) Identify any of the sectors given in the list presented in Table 6-3 that were currently active within their specific region,
- b) Of these, provide a rating from 1 to 5 as to the relative importance of the sector to the regional economy (1 being least important, 5 being most important, n/a being not present),
- c) Identify any sectors that are considered to be key strengths in the region, and
- d) Identify any sectors that are important to their region but have not been mentioned.

A link to the online survey was sent in an email on 7 May 2012 to each of the Regional Partners. Three weeks were allocated for responses to be submitted, with reminder emails sent several times during this period. However, unfortunately only Region Skåne responded with a completed survey. Schleswig-Holstein also responded, although this was to excuse themselves from participating in the survey at this point as follows (Stefan Musiolik, 18 May 2012, pers. comm.):

“The elections in Schleswig-Holstein from 6th May [may] affect the political will to implement green/smart/sustainable policies ... because there [may] be a new coalition consisting of Social Democrats, Green Party and Danish minority party. The new Minister-President will probably be elected on 12th June. Just now the coalition negotiations take place. That’s the reason why it is not possible for us in Schleswig-Holstein to answer your questions concerning the identification of key sectors for the moment.”

Table 6-3: Summary of key economic sectors identified by representatives from each Regional Partner.

Potential Focus Sector	<i>Sub-sectors / Related Keywords</i>	Potential Focus Sector	<i>Sub-sectors / Related Keywords</i>
<b>Agriculture</b>	<i>Farming, food, foodstuff, fruit and vegetables, land, land-use, land-use change, livestock, organic agriculture</i>	<b>Industry</b>	<i>Industrial, manufacturing, mining<sup>3</sup>, materials efficiency</i>
<b>Buildings</b>	<i>Commercial, energy efficiency, heating, residential, retrofitting</i>	<b>Public sector</b>	<i>Administration, city training, governance<sup>4</sup>, procurement, regional co-operation</i>
<b>Business</b>	<i>Banking, environmental goods and services, media<sup>1</sup>, small and medium enterprises</i>	<b>Research</b>	<i>Materials science, science</i>
<b>Construction</b>		<b>Services</b>	<i>Environmental consultancy</i>
<b>Education</b>		<b>Technology</b>	<i>Cleantech, environmental technologies and products, high-tech, ICT, mobile communications, pollution abatement</i>
<b>Energy</b>	<i>Biodiesel, biogas, electricity, energy efficiency, ethanol, heating, nuclear, power, renewables, solar, wind</i>	<b>Tourism</b>	<i>Cultural resources, eco-tourism, travel</i>
<b>Environment</b>	<i>Climate, ecosystem services and biodiversity<sup>2</sup>, open land</i>	<b>Transport</b>	<i>Logistics, maritime, mobility, public transport, transportation</i>
<b>Forestry</b>	<i>Wood processing</i>	<b>Urban &amp; Rural Development<sup>5</sup></b>	<i>Cities<sup>6</sup>, towns</i>
<b>Fisheries</b>	<i>Aquaculture</i>	<b>Waste</b>	<i>Recycling, recovery, remanufacturing, waste management, waste disposal</i>
<b>Health and Medical</b>	<i>Life science, medical devices, pharmaceuticals</i>	<b>Water</b>	<i>Freshwater provision, catchments &amp; irrigation, sanitation, water services, water management</i>

Note – The sector ‘Infrastructure’ identified in the literature review has been removed as it covers numerous sectors already addressed individually in the table (i.e. energy, transport, waste etc.), and was only referred to once in the review.

1 – The ‘Media’ sector identified in the regional documentation is considered to be a sub-sector of the ‘Business’ sector.

2 – The sector ‘Ecosystems services and biodiversity’ from the literature review has been reclassified as a sub-sector of the Environment sector identified in the regional documentation, as the former is considered a component of the latter.

3 – The ‘Mining’ sector identified in regional documentation has been reclassified under the ‘Industry’ sector as the latter term is taken to refer to primary (extractive) & secondary (manufacturing) industrial activities, and due to the low presence of mining activity in the STRING Region.

4 – The sector ‘Governance’ identified within the regional documentation has been reclassified as a sub-sector of the ‘Public Sector’ heading identified in regional documentation, as this is considered to better reflect the constituent sub-sectors.

5 – The ‘Rural Development’ sector has been merged with the ‘Urban Development’ sector as they both cover issues of development relating to planning and infrastructure.

6 – The ‘Cities’ sub-sector has been removed from under the Infrastructure sector identified in the literature review and left in place under the Urban Development sector as identified in the regional documentation.



Hamburg also responded with similar reasoning (Rieke Marsden, 22 May 2012, pers. comm.):

“...[R]ight now the Senate Chancellery is re-evaluating the different STRING projects and our involvement within them. Probably we will be able to say more next week.” “Hamburg has always been very active in STRING ... I think [the Senate Chancellery] are just bringing together the various perspectives and determining who will be in charge of what, so it’s more a matter of work flow organization really.”

At the time of submission of the thesis, no response had been heard from the remaining Regional Partners.

### **6.3.2 Outcome of Consultations**

Given that responses from the remaining Regional Partners were pending at the time of thesis submission, it was not possible to analyse and obtain a consensus on the green growth sectors for the STRING Region. However, it is clear from the review of policy documentation that there are numerous synergies between the sectors mentioned in these documents. Participants also made it clear verbally in consultations that the fact that a given sector was not specifically mentioned did not preclude it from being important in the eyes of their region. This is important as it indicates a willingness on the part of stakeholders to compromise on the sectors to be included in the final GGS.

Despite not having been able to undertake an analysis of the responses of the sectoral survey, several key lessons can be discerned from this part of the consultation process. As with the previous consultation on the definition, developing a list of potential sectors was beneficial in minimising the amount of time spent in consultation with stakeholders. However, the three week feedback period allocated in this round of consultations was not sufficient for stakeholders to undertake the survey. Two key factors contributed to this outcome. Firstly, it appears that political factors (i.e. elections in Schleswig-Holstein, Senate Chancellery meetings) made certain participants reluctant to respond to the survey. Secondly, the fact that face-to-face meetings were not held in this round of consultations may have contributed to the overall lack of progress on identifying green growth sectors. In order to speed up this iteration, these meetings could have been carried out at the same time as the second set of proposed face-to-face meetings for the consultations on the definition.

## 7. Discussion of Action Research Approach

### 7.1 Evaluation of Identified Criteria

Critical reflection of the success of the AR approach is a key step in the process. To this end, a suite of evaluation criteria for each iteration were developed in the AR Action Plan presented in Table 2-1 (Section 2.1.2.2) that aimed to determine whether the approach has been successful or otherwise. These are examined under the headings below. The overall finding of the criteria evaluation is that time constraints were primarily responsible for preventing successful completion of the definition and sectoral identification tasks.

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#### *Iteration 1 (Task A) – Literature Review*

1. Concepts of and case for green growth present in literature identified.
2. Overlaps with related concepts determined.
3. Criticisms of green growth identified.
4. Use of green growth concepts in context of administrative frameworks relevant to STRING (international, national and regional levels) examined.

Given that the literature review provided an in-depth review of each criterion, all criteria are considered to have been successfully met. The theoretical underpinnings behind green growth set the context for defining how green growth relates to other concepts that stakeholders may already be familiar with. While different researchers tend to put emphasis on the importance of different theoretical frameworks behind green growth, the theories identified were broadly similar in their objectives. Deconstruction of the green growth concept highlighted the fact that the focus of ‘green’ actions was primarily on addressing climate change, while the ‘growth’ aspect was considered to be a tool for improving quality of life that can be harnessed to drive future improvements in environmental conditions. Numerous overlaps with related concepts were identified that help to place green growth in the context of related environmental objectives. Criticisms of green growth revolved around fears that investing in green growth may undermine broader efforts to implement sustainability and to address fundamental societal changes. Finally, the need and mechanisms for green growth were noted to be well-defined at an international level, and while the concept is not directly addressed at national and regional levels, numerous aspects of green growth have already been tackled and there is a framework for further efforts to be made.

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#### *Iteration 2 (Task B) – Stakeholder Engagement*

1. Purpose and scope of stakeholder engagement defined.
2. Planning for stakeholder engagement carried out.
3. Resources for engagement identified and mobilised.
4. Engagement of stakeholders carried out as per plan.
5. Steps are taken to review and improve upon stakeholder engagement process.

The AA1000SES standard provided a clear procedure for undertaking stakeholder engagement that matched well with the AR approach and criteria adopted in this study. The purpose and overall scope of engagement were clearly defined for the study period. A logical planning of the engagement was carried out that eventuated in the scope of consultation being further limited to Advisory Group members. Resources for engagement were identified based on discussions with STRING representatives. However, despite few actual resource

requirements being identified, it became clear in later iterations that time constraints could have been better addressed at this stage of the process. This did not affect the overall implementation of the plan, which was followed throughout the process. The review of the process highlighted a number of key lessons learned that can be applied to later iterations. Given the above, all criteria except those of 3) are considered to have been adequately met.

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#### *Iteration 3 (Task C) – Green Growth Definition*

1. Key concepts present in existing green growth definitions identified from literature.
2. Concept of green growth introduced to participants.
3. Common vision and definition for green growth developed.

Time constraints resulted in all but the final criteria being addressed in this iteration. The information obtained during the literature review in Iteration 1 contributed to the identification of key green growth concepts, and a coding methodology was utilised to develop a list of key concepts. This was distributed to the participants and consultations were held to ensure that the identified concepts were representative of the activities of each Regional Partner. The fact that stakeholder feedback took a longer amount of time to finalise than initially anticipated meant that Criteria 3) could not be fully completed within the study timeframe.

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#### *Iteration 4 (Task D) – Sectoral Identification*

1. Sectors of interest identified from literature and from regional documentation.
2. Regional Partners consulted to confirm sectors of importance to own region.
3. Sectors of common importance to STRING Region identified and consensus reached.

A similar situation to that observed in Iteration 3 above occurred during this iteration, with Criteria 2) and 3) remaining incomplete at the end of the allocated study time period. The literature review produced a preliminary suite of sectors within which actions to foster green growth have already been proposed. The consultation with each Advisory Group member also identified numerous regional documents that specified sectors of importance to each region. An amalgamated list permitted the identified sectors to be presented to Regional Partners; however, time constraints meant that discussion on sectors of importance was ongoing at the time of thesis submission. Consequently, without agreement on sectors of importance to each Regional Partner being reached, Criteria 3) could not be completed.

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## **7.2 Reflections on Application of Overall Action Research Approach**

Given the social and political context of the STRING Region within which the development of the GGS must take place, AR provides a participative qualitative methodology for achieving consensus on green growth that arguably would be difficult to achieve using a more conventional quantitative experimental research approach. However, it is clear from the present undertaking that the development of a GGS is a complex and multi-faceted endeavour that takes place over a longer timeframe than is typical for other AR projects. Indeed, Zuber-Skerritt and Perry (2002) note that a Masters-level AR project needs only to progress through one major cycle (or several minor cycles) of planning / acting / observing / reflecting, in order to demonstrate mastery of the research method. While the author's view at the outset of the project was that the selected iterations undertaken in the thesis would constitute several

minor cycles (especially given the high level of engagement and access to stakeholders), it is clear that the volume of time required was somewhat underestimated.

A number of positive and negative aspects of the AR approach were noted during the GGS development process. One positive aspect is that the role of the author as a participant and driver of action in the process was central to the success of the study. The researcher must balance the role duality of being an 'insider' in that they work together as an actor with the participants to achieve a given outcome, as well as an 'outsider' who is an external facilitator bringing new and potentially challenging concepts to bear in an existing system (Williamson, 2002). Fortunately, the AR approach has proven to be especially useful in the specific context of the STRING Region, as problems relating to the 'insider / outsider' dilemma are lessened due to the existing political desire of the Regional Partners to implement environmental policies and realise economic growth.

Another positive aspect was that political desire for working participatively towards addressing environmental and social issues was observed at all administrative levels in the STRING Region. Despite this, one of the key issues was that it proved difficult in the limited timeframe afforded during this study to achieve the objectives of the iterations attempted in this thesis (i.e. a final agreed green growth definition and list of focus sectors). This was primarily due to the way in which the consultation process unfolded. The approach of visiting each Advisory Group member in developing a common definition was far more successful at quickly generating a list of key concepts than the approach of using email and surveys to identify sectors of common interest in consultation with Advisory Group members. While the results of the study carried out to date are expected in the near future, future iterations of the process need to better account for time constraints by putting more resources into face-to-face meetings. This will be especially important when expanding the approach to include the wider Stakeholder Group, which could be addressed by utilising workshops or other group meetings to present facts and undertake consultations.

The AR approach has arguably been successful at increasing the awareness of green growth within the Regional Partners. Meetings with each partner noted that the concept of green growth had been raised in some form in the recent past within their individual administrations. Although this has not yet progressed to the point where green growth has been specifically implemented in any individual regional documentation, this study is the first in a series of steps that eventually aim to achieve this outcome. Further, all Regional Partners expressed a desire for the development of a GGS for the STRING Region which provides more concrete examples of the types of policy and strategic actions that could be taken at a regional level. It is therefore expected that further pursuit of green growth by the STRING Partnership will drive the incorporation of green growth into the strategic documentation of Regional Partners. From a STRING perspective, this would ideally result in such documentation using a STRING GGS to link their regional development (and other) strategies with the other Regional Partners in order to maximise environmental, social and economic gains.

Another issue encountered was extending participation to wider stakeholders beyond members of the Advisory Group. A pragmatic approach was adopted of obtaining consensus from the Advisory Group in the initial development of a definition and list of focus sectors prior to wider consultation. This was primarily done to ensure higher-level political support for the concept and to comply with the study timeframe. On the other hand, there are several risks in such an approach. Firstly, it misses an opportunity for early engagement and wider dissemination of the green growth concept with important interest groups (i.e. NGOs, universities, businesses etc.). Secondly, these groups could potentially have provided valuable

inputs and differing perspectives on how green growth should be approached. Lastly, potential Stakeholder Group members may perceive that most of the ‘important’ decisions on green growth have already been taken, and this may lead to a lower level of involvement in later consultations.

While some aspects of the AR approach have been successful, one of the problems encountered was that it has proven difficult to encourage deeper political engagement (and financial commitment) from STRING partners. Again, this is related to the limited timeframe of the study, although the fact that higher-level political representatives were not involved in this study also may contribute. Nonetheless, limiting consultation to civil servants in the regional administrations was an early decision in this study, as the development of a definition and identification of sectors requires knowledge of key aspects of regional policy that higher-level political actors typically delegate to civil servants. Another problem was that the AR process did not result in increased communication between Regional Partners apart from that carried out as part of the development of the definition and sectoral identification. The main reason for this was an (understandable) lack of administrative desire within the STRING Partnership to extend and finance consultation at a faster pace than has already been agreed at the STRING level.

## **7.3 Wider Applicability of Action Research Approach**

### **7.3.1 Advantages of Approach**

The AR approach to developing a GGS promulgated in this study could certainly be employed in other administrative contexts. The proposed approach, with its focus on fostering alignment and communication between the identified Regional Partners, clearly has the most relevance to other inter-regional associations. However, a similar version of the process could also be scaled to apply at regional or national administrative levels in the EU, as well as at an EU-wide level. It could feasibly also be employed within other international, non-EU national and federal contexts.

There are several factors that make the use of AR in the development of a GGS suitable for application in other contexts. Firstly, central to the AR approach is that the researcher is a participant and the process is collaborative but researcher-driven. Discussion of the benefits of researcher participation is given under Section 7.2 above. Beyond this, the fact that the researcher is a key driver of the collaboration process is important as stakeholders typically do not have an in-depth understanding of the issues relating to green growth, but do hold varying political and personal views on the most appropriate method to achieve green growth. The AR approach therefore allows the researcher to take into account a variety of social, political and cultural responses to new or different ways of addressing problems. Issues that can be better managed in the AR paradigm may include conflict, confusion, projections, defences against anxiety, infra- and interpersonal processes, group dynamics, organisational cultures, values, norms and the relationship between structure and process, among numerous other potential problems (Ottosson, 2003).

A second factor is that the overall GGS Development Framework is complementary to existing policy development processes in other contexts. The framework utilises AR’s cyclical, iterative process of planning, acting, observing and reflecting, and couples this with a progressive series of steps that starts with defining the basis for green growth and works towards more specific delineation of sectors, policy objectives, indicators and implementation (Figure 7-1). The flow of the steps has been designed so that each step informs the next in towards a specific outcome – in this case, the provision of a GGS that is tailored to the needs

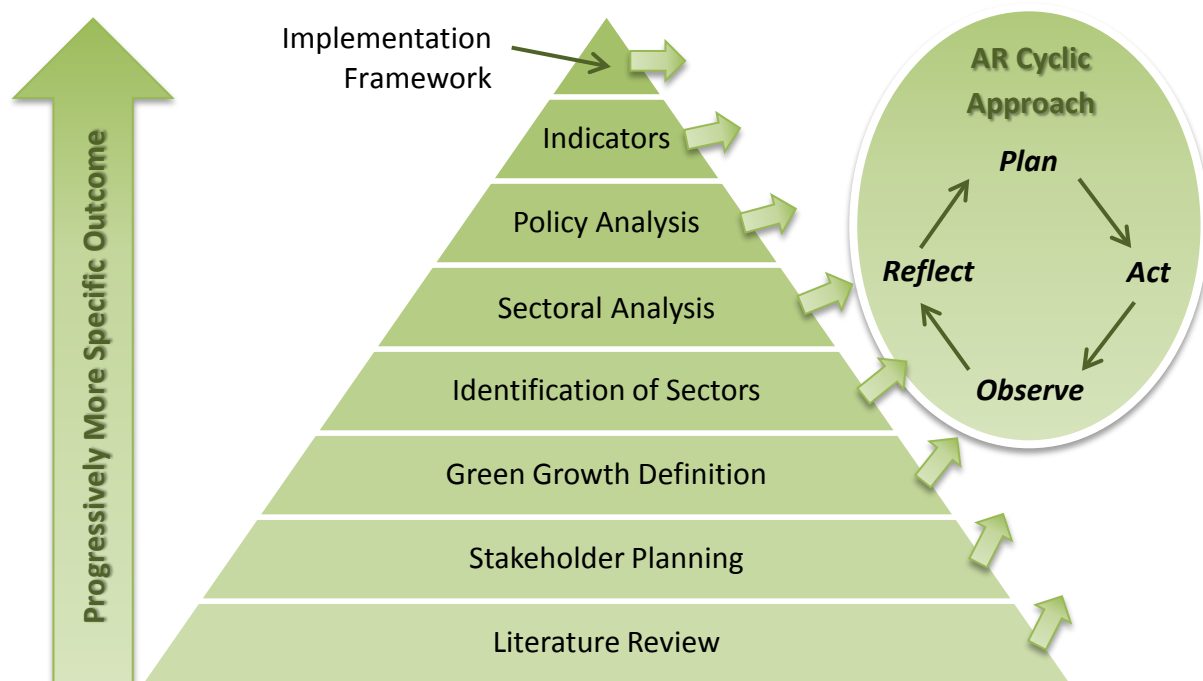


Figure 7-1: Steps in the Action Research approach used in this study to develop a Green Growth Strategy.

of a given administrative entity. In this way, the researcher can both develop an increasingly detailed picture of the problem situation and at the same time move closer to a solution to this problem (Davison *et al*, 2004). It is also useful in ensuring that a consensus is built and agreed upon during each individual task, which makes the likelihood of participants raising fundamental problems in later tasks very low. Such a logical approach can be used in any administrative framework and corresponds to the various policy-making processes employed at national and EU levels in Europe (Richardson, 2006).

Thirdly, the AR approach provides for a great deal of flexibility in terms of the how each step can be fulfilled. As AR takes place in co-ordination with varying organisational actors and emergent organisational circumstances, the researcher seldom has complete control over interventions, thus making it very difficult to draw up definitive plans for intervention (Davison *et al*, 2004). As such, the researcher has scope to assess the situation and to choose an appropriate methodology for achieving the objective(s) of a given step that addresses the two goals of AR: solving a practical problem within an organisation, and generating new academic knowledge and understanding (Zuber-Skerritt & Perry, 2002). This means that the researcher is not constrained to a single methodology that may not be suitable for a given organisational situation.

Finally, the AR approach is focussed on ensuring participation at both an administrative level as well as from a wider stakeholder perspective. AR holds that collaboration between participants is key to successful organisational change (Brydon-Miller *et al*, 2003), whilst recognising that the researcher is participating in a ‘soft’ organisational system with political viewpoints and group dynamics that differ based on the organisational context. Effective stakeholder engagement is therefore crucial to the success of AR. To this end, planning for stakeholder engagement takes place early in the AR approach, and is fundamental to each step of the process. Further, the fundamental separation of stakeholders into a core Advisory Group and wider Stakeholder Group in the study permits a clear evolution of the green

growth concept from an administrative discussion that progresses into the involvement of wider stakeholders. Although time limitations in the present study prevented the process from progressing from a purely administrative discussion into wider stakeholder involvement, the use of such an approach is intended to increase the likelihood of stakeholder buy-in and later acceptance of the findings and recommendations of the GGS.

### **7.3.2 Disadvantages of Approach**

Despite these benefits, there exist several barriers that must be addressed if the AR approach to developing a GGS is to be successfully implemented in other administrative contexts. Primary amongst these is the risk of a lack of engagement by disinterested stakeholders. In the present study, it was fortunate that almost all administrative-level participants were highly enthused by the idea of green growth and the development of a GGS. However, in other contexts the concept of green growth may receive a lukewarm or even hostile reception when introduced to stakeholders. Clearly, there are numerous approaches and responses that a researcher can adopt to heighten the chance of stakeholder buy-in. Researchers need to have good emotional skills, appropriate experience and knowledge, and good personal skills for the work (Ottosson, 2003). Beyond this, one approach that worked well in this study was to communicate the expected benefits of green growth in a way that highlights the potential direct benefits to a given region. An example used was to explain how the primarily urban regions of Copenhagen and Hamburg could use their small agricultural sector as a springboard to try out novel agricultural approaches that, should they be successful, could be disseminated to the more rural regions. This highlighted the fact that sectors of low perceived relevance to a region could prove more valuable to economic growth than previously thought.

Zuber-Skerritt and Perry (2002) recommend that the researcher gains moral (preferably written) support from a director-level representative to undertake an AR project within their organisation, even where that person may not directly be part of the AR process. Although this was possible to achieve within the STRING Partnership, it highlights the fact that one of the preconditions of successfully developing a GGS is that there needs to be in place a unifying organisation that has agreements in place for co-operation between the various entities. This could be in the form of an inter-regional association like the STRING Partnership, or already exist at regional or national administrative levels.

A further disadvantage is that the qualitative nature of the AR approach means that change is difficult to measure in the early phase of GGS development. Time constraints in the political process encountered within the present study make it difficult to demonstrate much progression towards the goal of implementing a GGS for the STRING Region. While the development of a green growth definition and suite of sectors are useful and necessary precursors to the GGS, the full AR process for developing a GGS needs considerably more time in order to demonstrate success. It is important to allow a suitable amount of time in the AR process: this time is necessary both to build a relationship with the participants and then to plan, execute, observe and reflect upon the actions (Davison *et al*, 2004). In the present study, approximately six months has yielded a working definition and list of sectors. Given that a GGS would take an additional three to six months to prepare and agree, and at least one year further for the Regional Partners to implement any policy recommendations, it is recommended that a minimum timeframe of two years is devoted to the use of AR in the overall GGS development process so that success or otherwise can be judged.

## 8. Conclusions

### 8.1 Research Question and Study Objectives

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*Research Question* – “How can a participative and iterative approach be applied in the development of a Green Growth Strategy that caters for varying stakeholder needs and objectives?”

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This thesis has generated a novel framework for the development of a GGS that uses a participative and iterative AR approach as a basis for stakeholder engagement. The proposed GGS Development Framework was designed to deliver progressively more specific outcomes that contribute towards the completion of subsequent tasks. This was paired with an AR approach that permitted the author to actively participate in and guide the GGS development process. The overall assessment of this thesis is that the GGS Development Framework and the use of the AR approach is well suited for the development of a GGS. The case study within the STRING Region showed that the AR approach succeeded in generating initial conditions for green growth to be implemented, identifying opportunities to align the regional objectives of the various administrative bodies, and facilitating stakeholder engagement with the concept of green growth. More specific conclusions have been presented below as responses to the three Study Objectives identified at the start of this thesis.

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*Study Objective 1* – Determine whether a participative and iterative method is suitable for generating the conditions that ensure green growth objectives are implemented.

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The AR approach adopted in this thesis was very well suited towards achieving the objective of generating conditions for the successful implementation of green growth objectives. AR provides a participative and qualitative methodology for achieving consensus that would arguably be difficult to replicate using a quantitative experimental research approach. The methodology adopted of utilising the key study tasks as a basis for applying the four cyclical AR steps (planning, action, observing and reflection) provided a logical framework for ensuring stakeholder participation towards achieving consensus on green growth that largely mirrors policy-making processes used in the regions. Similarly, the iterative nature of the cyclical AR steps allow for issues flagged during consultation to be addressed effectively at each task so that the participants arrive at a consensus prior to the commencement of the proceeding task. This is intended to avoid the problem of stakeholders raising fundamental concerns at later stages of the process.

The flexibility of the AR approach is a key advantage in that it does not prescribe to a single distinct research methodology in each of the iterations. AR allows the researcher to account for a variety of social, political and cultural responses to new or different ways of addressing problems in an organisation. It is consequently possible to quickly reframe the methodology so that a more appropriate approach can be utilised for achieving the objective of a given task.

In the context of the STRING Region, the study observed that political desire was present at all administrative levels for working participatively towards addressing environmental and social issues. However, the main issue encountered was ensuring that stakeholders remained engaged with the process without requiring an excessive stakeholder time commitment. Another problematic issue was involving wider, non-administrative stakeholders in GGS



development process prior to establishing political contact and setting a clear frame of reference. Balancing these issues proved difficult due to a number of administrative and political factors, as well as study time constraints. Nonetheless, the AR approach permitted the researcher to quickly adapt to problems and offer solutions that accounted for the varying views held by stakeholders. On balance, it was clear that the overall GGS Development Framework worked well in engaging with the identified stakeholders and fostering conditions for the implementation of green growth objectives in the region.

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*Study Objective 2* – Examine the policy directions of the various administrative bodies operating within the STRING Region and align these with green growth objectives and wider EU goals.

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The case study within the STRING Region found that the policy directions of the administrative participants were in general well aligned with the policy directions of the EU broadly, those of other regional and inter-regional administrations and the objectives of green growth. The development of a literature review and planning on stakeholder engagement were central to the success of later consultations on the development of a green growth definition and identification of sectors. Further, the consultative approach on the definition and sectoral identification was important in ensuring that regional objectives can be appropriately aligned in later stages of the GGS Development Framework process.

One of the key points arising from this study was that all participants expressed a desire for the GGS to reflect and support on-going efforts to implement the EU2020 growth strategy. While the various administrations did put emphasis on slightly different key concepts and sectors based primarily on their perceived and desired core competencies, the tasks undertaken in this thesis found that these emphases were on balance fairly similar across the STRING Region. Further, the research undertaken found that the Regional Partners have already gone some way to address a number of issues in regional documentation that would be covered within a GGS. Finally, participants indicated a willingness to compromise on the types of issues to be covered in the final GGS. Consequently, the finding of this thesis is that there is a solid basis for aligning policy related to green growth in the STRING Region.

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*Study Objective 3* – Facilitate the involvement of potential stakeholders in the development of the GGS for the STRING Region.

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From the outset, consultation with and the involvement of stakeholders in the development of the GGS was considered central to the overall premise of this study. The AR approach and the use of the AA1000SES standard for stakeholder engagement were selected specifically to achieve this objective. The limited timeframe for the study, coupled with uncertainty regarding the level of involvement of wider stakeholders, meant that the initial focus of consultation focussed on regional administrative bodies within the STRING Region. While potential broader stakeholder groups were not consulted in this study, future iterations have been predicated on the idea of expanding the process to include wider participation. Members of the Advisory Group also noted the importance of wider consultation on the GGS. Despite this limitation, stakeholder consultation was broadly successful in the development of the green growth definition, although issues relating to time management and ensuring full engagement from each of the Advisory Group members were noted.

## 8.2 Future Research

There are several key research opportunities that stem from the work undertaken in this study, both in terms of the STRING Region and in wider application of the approach in other administrative settings. In the context of the GGS for the STRING Region, there remain a number of further iterations that were not completed in the short timeframe allocated for the study. This is to be the subject of a future study to be undertaken by the author on behalf of the STRING Partnership. The study will focus on analysing the identified green growth sectors, identifying potential green growth policies, establishing a suite of indicators and developing an Implementation Framework for the GGS. Each of these tasks will be carried out in consultation with stakeholders as per the AR approach.

A further study would be to assess the overall effectiveness of the AR approach in aiding in the development of the GGS for the STRING Region. As the present study lacks an economic analysis, it would be of much interest to attempt to quantify the potential gains and losses associated with the identified green growth policies. The study would be especially important in the context of evaluating the extension of stakeholder consultation to the wider Stakeholder Group, who to date have not been approached to contribute to the GGS. It would also be useful to assess the effectiveness of the indicators selected and the timeframes proposed in the Implementation Framework. Such a study would serve to validate whether the proposed AR approach is suitable in the development of a GGS.

Finally, assuming the AR approach is deemed suitable after it has been applied to the entire GGS development process, a future study could seek to utilise the GGS development framework in different administrative settings. These may include other inter-regional associations in Europe, national governments, regional administrations, or even an EU-wide strategy. Given the enthusiasm for the rhetorical use of 'green growth' present in the OECD, UNEP and various governments internationally, a high demand for such studies is anticipated.

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[00158349\\_20111207171314/Rendered/PDF/WPS5872.pdf](#) (Date accessed: 14 February 2012).

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Williamson, G.R. (2002). Action research: politics, ethics and participation. *Journal of Advanced Nursing*, 40(5), 587-593.

Zuber-Skerritt, O., & Perry, C. (2002). Action research within organisations and university thesis writing. *The Learning Organization*, 9(4), 171-179.



## **Appendices**

## Appendix 1 – Boundary of Disclosure Documents

Boundary of Disclosure Agreement  
Green Growth Strategy for the Fehmarnbelt Region

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# BOUNDARY OF DISCLOSURE AGREEMENT

## FULL DISCLOSURE OF INFORMATION IN STAKEHOLDER CONSULTATIONS

The CONSULTANT, *Adrian Mill*, has been commissioned by the *Femern Belt Logistic Platform* (the CLIENT) to undertake the development of a *Green Growth Strategy for the Fehmarnbelt Region* (the 'PROJECT').

As part of the PROJECT, the CONSULTANT shall represent the CLIENT in stakeholder consultations relating to the development of the Green Growth Strategy. A 'stakeholder' in this instance refer to as any persons or groups who are directly or indirectly affected by the PROJECT, as well as those who may have interests in the PROJECT and / or the ability to influence its outcome, either positively or negatively.

The stakeholder engagement process shall be undertaken in accordance with the principles outlined in "AA1000 Stakeholder Engagement Standard 2011", produced by AccountAbility.

Under Section 4.1.3: "Establish and communicate boundaries of disclosure", the standard states:

*The owners of the engagement shall establish the boundaries of disclosure of the engagement and shall clearly communicate these boundaries to its stakeholders. Boundaries of disclosure specify what information the owners of the engagement will share with its stakeholders and what information stakeholders may share outside of the engagement process.*

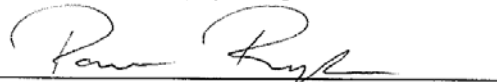
Effective engagement depends upon a shared understanding of issues. This works best when all participants have access to the same information.

For the purposes of this PROJECT, a principle of 'Full Disclosure' will be adopted, whereby any information obtained by the CONSULTANT may be shared with an identified stakeholder, and all correspondences shall be recorded and attributed wherever possible.

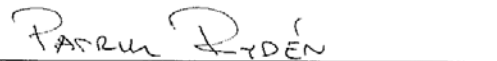
### ACKNOWLEDGEMENT:

By signing this Boundary of Disclosure Agreement, you assert that you are of suitable seniority to provide consent for the requirements this document, and that the CONSULTANT shall not be held responsible for any issues that may arise as a result of abiding by the agreement.

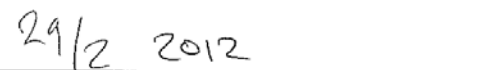
Signature:



Printed Name:



Date Signed:



# Appendix 2 – Consultation Matrix

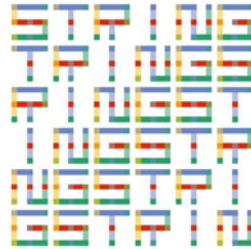
CONSULTATION MATRIX - FEHMARNBELT REGION											Last Edited: 27 May 2012	
Stakeholder Category	Stakeholder Organisation	Country	Region	Consultation Group	Contact Name	Position / Affiliation	Other Affiliations	Contact Information				
Project Proponent	Femern Belt Logistics	Inter-regional	Inter-regional		Patrick Ryden	Managing Director	Lund University					
Regional Association	STRING	Inter-regional	Inter-regional	Advisory	Marianne Jakobsen	Project Co-ordinator	Roskilde University					
Regional Association	STRING	Inter-regional	STRING	Advisory	Jacob Vestergaard	Managing Director						
Regional Association	Oresund Committee	Inter-regional	STRING	Advisory	Rebecca Rosenquist	Project Co-ordinator						
Regional Administration	Region Hovedstaden	Denmark	Hovedstaden	Advisory	Finn Lauritzen	Managing Director						
Regional Administration	Region Sjælland	Denmark	Sjælland	Advisory	Henrik Madsen	Regional Development Manager						
Regional Administration	Region Sjælland	Denmark	Sjælland	Advisory	Rene Linnée	Regional Development Manager						
Regional Administration	Region Sjælland	Denmark	Sjælland	Advisory	Dorthe Poulsen Macka	Operations Manager						
Regional Administration	Hamburg	Germany	Hamburg	Advisory	Blarne Rasmussen	Co-ordinator, Sustainable Zealand						
Regional Administration	Hamburg	Germany	Hamburg	Advisory	Dr. Rolf-Barnim Foth	Head of Urban Development and Tourism						
Regional Administration	Hamburg	Germany	Hamburg	Advisory	Beatrice Marx	Head of Marketing						
Regional Administration	Schleswig-Holstein	Germany	Schleswig-Holstein	Advisory	Stefan Mastolik	Head of Unit Baltic & North Sea Affairs						
Regional Administration	Schleswig-Holstein	Germany	Schleswig-Holstein	Advisory	Eileen von Elster	Baltic Sea and North Sea Affairs						
Regional Administration	Schleswig-Holstein	Germany	Schleswig-Holstein	Advisory	Dr. Diemar Fahret	Basic Issues of Sustainable Development, International Affairs						
Regional Administration	Schleswig-Holstein	Germany	Schleswig-Holstein	Advisory	Christa Häckel	Department of Economic and Regional Policy						
Regional Administration	Region Skåne	Sweden	Skåne	Advisory	Per-Olof Persson	Director of Inter-regional Development						
Regional Administration	Region Skåne	Sweden	Skåne	Advisory	Peter Askman	Environmental Strategist						
Regional Administration	Region Skåne	Sweden	Skåne	Advisory	Gudmundur Kristjánsson	Deputy Director						
Regional Administration	Region Skåne	Sweden	Skåne	Advisory	Tomas Pettersson	Business Development	Business Region Skåne					

Telephone1 (Mob)	Telephone2 (Office)	email	Address	Initial Contact	Invite Date	Involvement	Date sent BP1	Survey1	Meeting	Date sent BP2	Comment 1	Comment 2
+46 462220369	+46 73398619	<a href="mailto:Patrick.Ryden@oresund.lu.se">Patrick.Ryden@oresund.lu.se</a>		06-feb-2012	05-Mar-2012	Yes	05-Mar-2012		27-Mar-2012	07-May-2012		
+45 29669079	+45 5787 5851	<a href="mailto:marianne.jakobsen@oresund.org">marianne.jakobsen@oresund.org</a>		06-feb-2012	05-Mar-2012	Yes	05-Mar-2012			07-May-2012		
+45 2082 3459		<a href="mailto:jvs@regionsjaelland.dk">jvs@regionsjaelland.dk</a>	Regional Udvikling, Alléen 15, 4180 Sorø, Denmark	18-Nov-2011	05-Mar-2012	Yes	05-Mar-2012		28-Mar-2012	07-May-2012		
+45 20440325	+45 33268910	<a href="mailto:aar@regionsjaelland.dk">aar@regionsjaelland.dk</a>	Nyregade 28, Copenhagen, Denmark	05-Mar-2012	05-Mar-2012	Yes	05-Mar-2012		23-Mar-2012	07-May-2012		
+45 2960 6536	+45 3866 5515	<a href="mailto:henrik.madsen@region.dk">henrik.madsen@region.dk</a>	Regiongården, Kongens Vænge 2, 3400 Hillerød	05-Mar-2012	05-Mar-2012	Yes	05-Mar-2012		28-Mar-2012	07-May-2012		
+45 308 44 372	+45 5787 5751	<a href="mailto:renel@regionsjaelland.dk">renel@regionsjaelland.dk</a>	Regional Udvikling, Alléen 15, 4180 Sorø, Denmark	05-Mar-2012	05-Mar-2012	Yes	05-Mar-2012		19-Mar-2012	07-May-2012		
+49 40 423312810		<a href="mailto:dpm@regionsjaelland.dk">dpm@regionsjaelland.dk</a>	Regional Udvikling, Alléen 15, 4180 Sorø, Denmark	25-Mar-2012	25-Mar-2012	Not to date	05-Mar-2012		22-Mar-2012	07-May-2012		
+49 40 423812623		<a href="mailto:rolf.barnim.foth@sk-hamburg.de">rolf.barnim.foth@sk-hamburg.de</a>	Regional Udvikling, Alléen 15, 4180 Sorø, Denmark	25-Mar-2012	25-Mar-2012	Not to date	05-Mar-2012		23-Mar-2012	07-May-2012		
+49 40 428402584		<a href="mailto:riete.madsen@bmvil-hamburg.de">riete.madsen@bmvil-hamburg.de</a>	City Hall, D - 20095 Hamburg, Germany	07-Mar-2012	20-Mar-2012	Yes	07-Mar-2012		20-Mar-2012	07-May-2012		22-May-2012
+49 171 2207714	+49 431 9882110	<a href="mailto:Beatrice.Marx@bsu-hamburg.de">Beatrice.Marx@bsu-hamburg.de</a>	Alter Steinweg 1-3, 20459 Hamburg	20-Mar-2012	20-Mar-2012	Yes	07-Mar-2012		20-Mar-2012	07-May-2012		
+49 431 9887101		<a href="mailto:stefan.musolik@stk-landsh.de">stefan.musolik@stk-landsh.de</a>	Stadthausbrücke 8, 20355 Hamburg	20-Mar-2012	20-Mar-2012	Yes	07-Mar-2012		20-Mar-2012	07-May-2012		18-May-2012
+49 431 9882132		<a href="mailto:eileen.vonelster@stk-landsh.de">eileen.vonelster@stk-landsh.de</a>	Düsterbrookweg 104, D-24105 Kiel, Germany	09-Mar-2012	09-Mar-2012	Yes	09-Mar-2012		20-Mar-2012	07-May-2012		18-May-2012
+49 431 9884413		<a href="mailto:christa.haackel@wiml-landsh.de">christa.haackel@wiml-landsh.de</a>	Mercatorstraße 3, D-24105 Kiel	09-Mar-2012	09-Mar-2012	Yes	09-Mar-2012		20-Mar-2012	07-May-2012		23-May-2012
+46 406753226	+46 46171000	<a href="mailto:per-olof.persson@skane.se">per-olof.persson@skane.se</a>	Düsterbrookweg 94, 24106 Kiel	06-Mar-2012	06-Mar-2012	Yes	06-Mar-2012		26-Mar-2012	07-May-2012		
+46 443093293		<a href="mailto:Peter.Askman@skane.se">Peter.Askman@skane.se</a>	Dockplatsen 26, Malmö, Sweden	26-Mar-2012	07-May-2012	Not to date	06-Mar-2012		26-Mar-2012	07-May-2012		08-May-2012
+46 406239728		<a href="mailto:Tomas.pettersson@skane.se">Tomas.pettersson@skane.se</a>	J A Hedlunds Väg, 291 891 Kristianstad	07-May-2012	07-May-2012	Not to date	06-Mar-2012		15-Mar-2012	07-May-2012		

## Appendix 3 – Stakeholder Engagement Plan

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**STRING**

# **STAKEHOLDER ENGAGEMENT PLAN**

*For the Development of a Green Growth Strategy for the STRING Region*

Author: Adrian Mill

Submitted on 24 May 2012 as part of the requirements of the  
AccountAbility Stakeholder Engagement Standard (AA1000SES) 2011

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## 1. **INTRODUCTION**

The purpose of identifying and engaging with stakeholders on the development of a GGS for the Fehmarnbelt Region is to develop and expand support for strategic green growth objectives. The process used for the identification of stakeholders is based on the AccountAbility Stakeholder Engagement Standard (AA1000SES) 2011 developed by AccountAbility, a global think tank and consultancy focussed on sustainability in organisations.

The standard sets out three main considerations for stakeholder engagement, centred around defining the purpose of stakeholder engagement, the scope of engagement and who needs to be involved in the engagement, including ownership, mandate and stakeholders. This approach, along with guidance provided in the companion document “From Words to Action: The Stakeholder Engagement Manual” has been used as the basis for the identification of stakeholders and the development of a stakeholder engagement plan.

A Stakeholder Engagement Plan has consequently been prepared as per the requirements of AA1000SES that presents the following information:

- The mandate for the engagement;
- The purpose and scope of the engagement;
- The owners of the engagement, their roles and responsibilities;
- The methodology for and results from identifying stakeholders;
- The methodology for and results from profiling and mapping stakeholders;
- The pre-engagement activities;
- The engagement level(s) and methods;
- The boundaries of disclosure.

## 2. **OVERVIEW OF STAKEHOLDER ENGAGEMENT METHODOLOGY**

The overall methodology employed in stakeholder identification and engagement in this document reflects the requirements of AA1000SES as follows (Figure 1):

1. Carry out strategic thinking on the stakeholder engagement process:
  - a. Identify the purpose of stakeholder engagement;
  - b. Define the scope of engagement;
  - c. Delineate the mandate for engagement and ownership of the process.
2. Analyse and plan the engagement:
  - a. Develop a list of potential stakeholders based on an initial review of potential interest groups and preliminary discussions with key stakeholders;
  - b. Carry out stakeholder prioritisation and assign stakeholders to prioritisation group;
  - c. Determine engagement levels and method(s) for engagement;
  - d. Establish and communicate boundaries of disclosure;
  - e. Establish a set of indicators;
  - f. Draft an engagement plan.
3. Prepare for engagement:

- a. Mobilise resources;
- b. Build capacity;
- c. Identify and prepare for engagement risks.
- 4. Implementation (put the plan into practice):
  - a. Invite stakeholders to engage;
  - b. Brief stakeholders;
  - c. Engage with stakeholders;
  - d. Document the engagement and its outputs;
  - e. Develop an action plan;
  - f. Communicate engagement outputs and action plan.
- 5. Act, review and improve on the process:
  - a. Monitor and evaluate the engagement;
  - b. Review of the process;
  - c. Follow up on action plan;
  - d. Report on engagement.

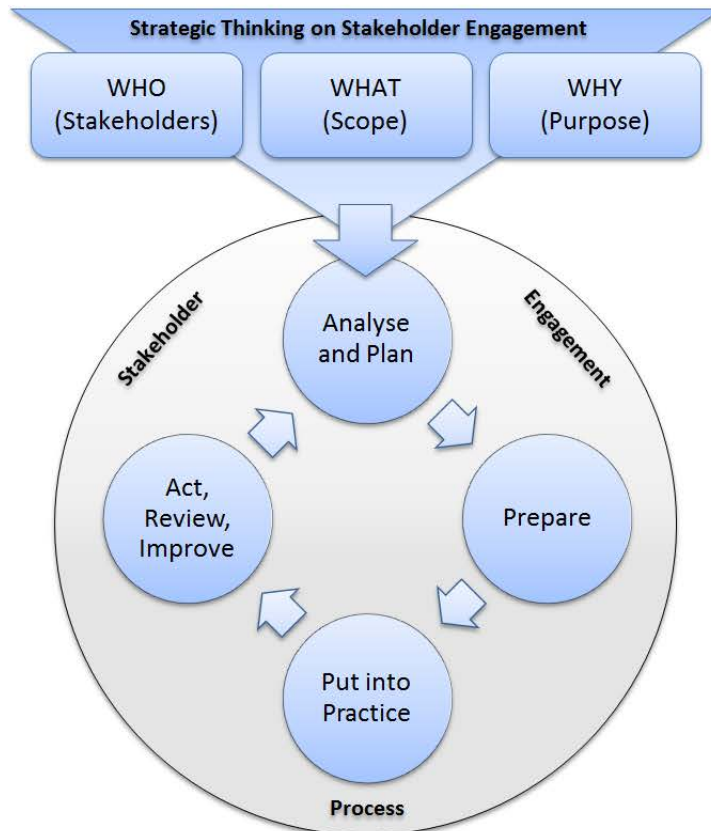


Figure 1: Stakeholder engagement process as defined in AA1000SES 2011.

A key aspect of the methodology is the separation of stakeholders into groups of similar level of involvement in the development of a GGS. To simplify this process, two groupings were adopted: an 'Advisory Group' of core stakeholders made up of representatives from the Regional Partners, STRING and the Öresund Committee; and a 'Stakeholder Group' of wider stakeholders from the private, public and academic sectors. As per AA1000SES 2011, an iterative process was adopted whereby each step of the engagement methodology was regularly reviewed with the core stakeholders in the Advisory Group to determine whether these factors required updating based on stakeholder feedback.

## **2.1 PURPOSE**

The primary purpose of undertaking stakeholder engagement on the development of a GGS for the STRING Region is to develop and expand support for strategic green growth objectives. Stakeholder "buy-in" to the concept of green growth is important from several perspectives. At the policy-maker level, buy-in to the concept is crucial if regional co-operation on green growth is to be achieved. Beyond this, policy-makers are more likely to implement policy that addresses green growth objectives if other stakeholders, including fellow regional policy-makers and other stakeholders active in the region, also support green growth objectives. This of course relies on stakeholders having a functional understanding of what green growth is and how it relates to their activities. It further assumes that stakeholders are made to feel generally positive about the concept and that they trust the organisation that is engaging with them.

Involving stakeholders in decision-making is also intended lead to a sense of co-ownership of the process, increasing the likelihood of stakeholder compliance with proposed policy changes. Said another way, the more stakeholders feel as if they have a voice in decisions affecting them, the more chance that they will abide by whatever requirements are selected. However, stakeholders will only behave in this manner insofar as the GGS adequately reflects the objectives of individual stakeholders. The engagement process must therefore clearly address all stakeholder feedback and communicate how each feedback has been resolved or otherwise in the strategy.

Finally, stakeholder engagement helps to develop an understanding of what the various stakeholders want the strategy to achieve, and from this tailor a suite of policy instruments that suits the majority of stakeholders. Stakeholders are likely to support policy that directly benefits them, or at minimum has no impact on their operations. Having a variety of stakeholder views can help in developing a policy framework that maximises benefits and minimises detriment to stakeholders. Further, the engagement process helps to determine what changes in policy each set of stakeholders are willing to accept. For instance, the removal of perverse fuel subsidies may initially be viewed negatively by many businesses as it is perceived to translate to increased operational costs and thereby increased costs to their customers. However, businesses may be more amenable to the idea if, for example, they are guaranteed subsidies to cover the additional costs, or if the removal of subsidies takes place over a defined time period. Canvassing and addressing stakeholder views is consequently an important element of the engagement process.

## 2.2 SCOPE OF ENGAGEMENT PROCESS

The scope of stakeholder engagement was limited to the development of a GGS for the STRING Region. The engagement process focussed on stakeholders located within the regional entities that make up the STRING Region.

The timeframe of the GGS covers both current concerns as well as long-term strategic issues associated with the implementation of green growth policies. Consequently, stakeholder engagement was aimed at addressing issues relating to green growth in the near-term and long-term.

## 2.3 MANDATE AND OWNERSHIP

The initial mandate for the stakeholder engagement process was initially given by the STRING Partnership on 18 November 2012. Due to various administrative issues, ownership of the process was passed on 17 February 2012 to the 'Femern Belt Logistics Platform', a cluster initiative project operated by Region Sjælland with the overall aim of supporting businesses in the region. The process was finally returned to the STRING Partnership on 19 April 2012.

## 3. ANALYSE AND PLAN THE ENGAGEMENT

### 3.1 LIST OF POTENTIAL STAKEHOLDERS

The table below gives a list of the potential stakeholders in the development of a GGS for the STRING Region. The list presents the various categories of stakeholder and identified subgroups with similar perspectives. Stakeholders are limited to those entities present within the STRING Region or within which the STRING Region operates.

Table 1: List of potential stakeholders in the green growth strategy.

Stakeholder Category	Subgroups of Similar Perspectives	Organisations
Government policy-makers	Supra-national administrations	European Union
	National administrations	Denmark
		Germany
		Sweden
	Regional administrations	Region Hovedstaden
		Region Sjælland
		Hamburg
Schleswig-Holstein		
	Region Skåne	
Municipal administrations	All municipalities present within STRING Region	
Inter-regional organisations	Inter-regional organisations within the STRING Region	STRING Partnership
		Öresund Committee
	Inter-regional organisations that	SCANDRIA



Stakeholder Engagement Plan: Green Growth Strategy for the STRING Region  
May 2012

Stakeholder Category	Subgroups of Similar Perspectives	Organisations
	include the STRING Region	TransBaltic Other EU-level organisations
Academic institutions	Universities within the STRING Region	<i>Regions Hovedstaden &amp; Sjælland</i> University of Copenhagen Roskilde University Technical University of Denmark IT University of Copenhagen Copenhagen Business School
		<i>Hamburg &amp; Schleswig-Holstein</i> University of Hamburg Hamburg University of Technology University of Kiel University of Applied Sciences Wedel University of Flensburg
		<i>Region Skåne</i> Lund University Malmö University Kristianstad University The Swedish University of Agricultural Sciences
		Other university colleges within STRING Region
		Other universities outside of STRING Region
	Advanced vocational training institutions	<i>Denmark</i> Arbejdsmarkedsuddannelser
		<i>Germany</i> Fachoberschule Berufsaufbauschule
	<i>Sweden</i> Kvalificerad Yrkesutbildning	
	Inter-regional academic bodies	Öresund University (now defunct)
Non-Governmental Organisations (NGOs)	Environmental / sustainability groups	* See note
	Social justice groups	
	Growth groups	
	Political groups	
Associations	Trade or industry associations	* See note
	Unions	
Businesses	Companies headquartered in the STRING Region	* See note
	Companies headquartered external to STRING Region but operating within the region	
Media	Regional and local media	* See note
	International media	
Community Groups	Anti-Fehmarnbelt Link citizen groups	* See note
	Pro-Fehmarnbelt Link citizen groups	

\* Note: Potential stakeholder organisations in these categories have not been listed as there are a huge number of organisations and later stakeholder consultation in this study has not included these stakeholder groups.

### 3.2 STAKEHOLDER PRIORITISATION

Due to large number of stakeholders to be consulted, stakeholders were separated into two key groups (Figure 2). The first, the Advisory Group, comprised a 'core' group of representatives from each of the Regional Partners (Region Hovedstaden, Region Sjælland, Hamburg, Schleswig-Holstein and Region Skåne) and the two main inter-regional associations within the STRING Region (STRING and the Öresund Committee). These participants were selected as they are directly involved in the development of regional policy within the STRING Region.

The second, the Stakeholder Group, was a wider group that included all other relevant identified stakeholders. This separation was made in order to ensure that selected definitions and policy given to the wider Stakeholder Group were in line with regional and national regulatory frameworks and broader regional policy directions.

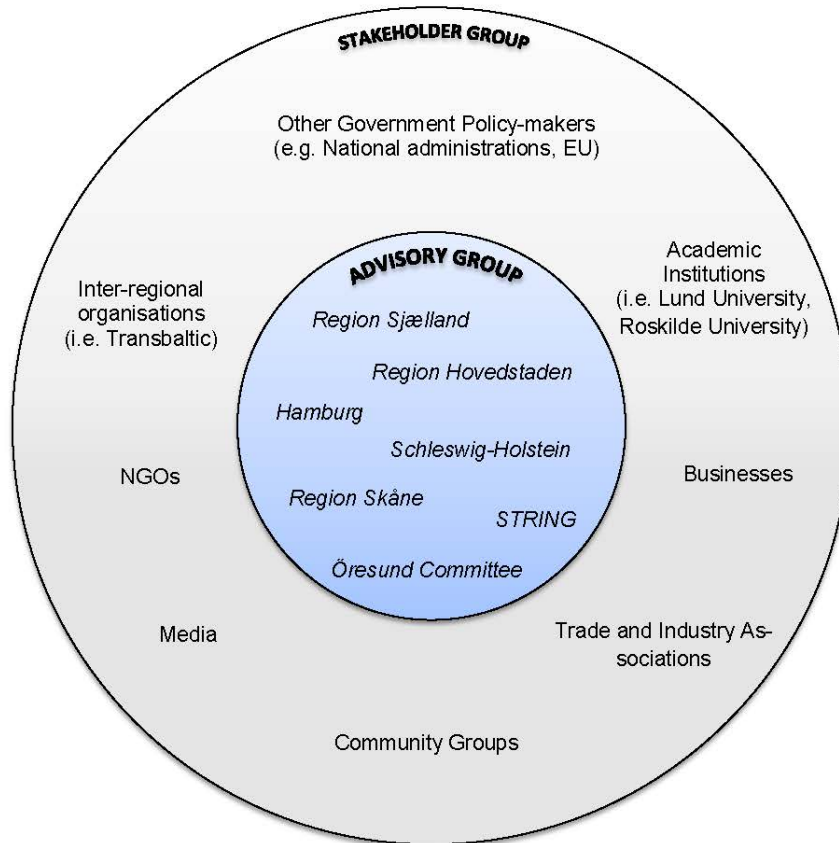


Figure 1: Graphical representation of stakeholder prioritisation.

### **3.3 LEVELS AND METHODS FOR ENGAGEMENT**

The purpose of this task is to define the nature of the relationship that the STRING Partnership aims to develop with stakeholders. It was decided to separate the stakeholder consultation process into two parts – one for the Advisory Group, and a second for the Stakeholder Group. As a result of the limited timeframe available for consultation, the scope of engagement in this study was limited to members of the Advisory Group.

The available methods for engagement were constrained by the geographic spread of stakeholders as well as the limited timeframe afforded in the development of the strategy. The methods that were selected are as follows:

- Pre-engagement activities:
  - Review of unsolicited information (primarily Advisory Group member websites);
  - Tracking of information (primarily media reports and from discussions with Regional Partner representatives and other contacts);
  - Creating awareness (discussions with various potential stakeholders either via phone or face-to-face at conferences or other meetings);
- Advisory Group:
  - Direct consultation in person at Advisory Group member offices.
  - Online surveys.
  - Provision of briefing papers.
  - Phone calls and email.

A series of workshops was also planned but was unable to be held due to conflicting Advisory Group member schedules.

### **3.4 BOUNDARIES OF DISCLOSURE**

Based on discussions with Jacob Vestergaard (Managing Director of the STRING Partnership) and Patrik Rydén (Managing Director of Femern Belt Logistics Platform), a policy of full disclosure was adopted, with clear attribution of the comments and responses from each stakeholder. Appendix 1 shows the scanned documents from each representative giving permission for full disclosure. Each Advisory Group representative was informed of the boundaries of disclosure during face-to-face meetings. However, the representatives all made it clear that any opinions given during meetings were those of the individual participants and did not constitute an official political declaration.

### **3.5 INDICATORS**

Indicators allow an organisation to measure and evaluate the progress towards achieving quality stakeholder engagement, to identify areas for improvement and to demonstrate the value added through engaging with stakeholders.

The following indicators were developed on the basis of informal discussions with Advisory Group representatives (Table 2). Measurement of the indicators is predicated on the full documentation of each interaction with a stakeholder (i.e. via email, phone, letter etc), recorded in an appropriate database – in this case, a Consultation Matrix (Appendix 2).

Table 2: Stakeholder engagement indicators.

Indicator	Justification	Measurement Method
Proportion of initial responses	Measures the number of responses in light of the number of invitations for stakeholder involvement sent. Used to determine whether further stakeholder outreach is needed.	Count of any correspondence from each stakeholder regarding involvement (or decline) in engagement process.
Number of participants	Provides comparison between personnel resources put towards participation in process. Used to determine whether enough variety in perspectives	Count of the number of participants identified by each of the involved Advisory Group organisations.

**APPENDICIES**

**APPENDIX 1 – DISCLOSURE AGREEMENTS**

Boundary of Disclosure Agreement  
Green Growth Strategy for the Fehmarnbelt Region

**BOUNDARY OF DISCLOSURE AGREEMENT**

FULL DISCLOSURE OF INFORMATION IN STAKEHOLDER CONSULTATIONS

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Under Section 4.1.3: "Establish and communicate boundaries of disclosure", the standard states:

*The owners of the engagement shall establish the boundaries of disclosure of the engagement and shall clearly communicate these boundaries to its stakeholders. Boundaries of disclosure specify what information the owners of the engagement will share with its stakeholders and what information stakeholders may share outside of the engagement process.*

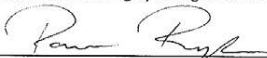
Effective engagement depends upon a shared understanding of issues. This works best when all participants have access to the same information.

For the purposes of this PROJECT, a principle of 'Full Disclosure' will be adopted, whereby any information obtained by the CONSULTANT may be shared with an identified stakeholder, and all correspondences shall be recorded and attributed wherever possible.

**ACKNOWLEDGEMENT:**

By signing this Boundary of Disclosure Agreement, you assert that you are of suitable seniority to provide consent for the requirements this document, and that the CONSULTANT shall not be held responsible for any issues that may arise as a result of abiding by the agreement.

Signature:

  
\_\_\_\_\_

Printed Name:

*Parum Ryden*  
\_\_\_\_\_

Date Signed:

*29/2 2012*  
\_\_\_\_\_

**APPENDIX 2 – CONSULTATION MATRIX**

See attached spreadsheet.

## Appendix 4 – Briefing Papers

### Appendix 4a – A Green Growth Strategy for the STRING (Fehmarnbelt) Region

5<sup>th</sup> March, 2012

## BRIEFING PAPER:

### A Green Growth Strategy for the Fehmarnbelt Region

*This Briefing Paper provides key policy-makers with a rationale for the development of a Green Growth Strategy for the 'Fehmarnbelt Region', an inter-regional association comprising Regions Sjælland and Hovedstaden in Denmark, Schleswig-Holstein and Hamburg in Germany, and Region Skåne in Sweden. The paper is intended to provide a synopsis of green growth and its relevance to the region, and to introduce the need for a common definition for green growth.*

#### WHAT IS GREEN GROWTH?

The concept of 'green growth' has emerged in response to the on-going financial crisis as a way to encourage economic growth whilst ensuring that environmental and social considerations are taken into account. Central to the green growth agenda is the understanding that environmental and economic objectives can be synergistic. This is all the more apparent in the context of northern Europe, where clean energy alternatives have generated significant economic growth and employment opportunities, while helping member states meet their national and international environmental commitments.

Similar to the proposed Green Transportation Corridors initiative, green growth has a wider remit that covers agriculture, energy, buildings and numerous other economic sectors. However, infrastructure development is an important element of green growth. As the EU and its member states attempt to kick-start growth by investing heavily in infrastructure, it is important that such infrastructure does not lock Europe into unsustainable patterns of transportation, energy usage and goods production. That means investment in the right kinds of infrastructure – for example, alternative energy sources, cleaner transport options and more efficient production systems – which in turn generate green jobs.

Investing in the right kinds of infrastructure is also heavily dependent on having the right policies and decision-making frameworks in place to support green economic growth. Just as strong economic growth is supported by good economic policy, so green growth requires a suite of supporting policies that encourage environmentally-sound development while discouraging environmentally-damaging economic activities.

Policy-makers must therefore develop and put in place a balanced suite of policies to encourage green growth. But **which policies are the most appropriate for ensuring responsible economic growth?** What is required is a Green Growth Strategy that provides a clear set of policy directions and instruments for achieving green growth. The purpose of this document is to provide an overview of the project and identify some of the central issues associated with green growth to key policy-makers in each of the Regional Partners.



Regions covered by the Fehmarnbelt Region.

#### THE FEHMARNBELT REGION

The Femern Belt Logistics Platform, in association with the STRING Partnership, are developing a Green Growth Strategy for the "Fehmarnbelt Region", a preliminary name for an inter-regional co-operation comprising Regions Sjælland and Hovedstaden in Denmark, Schleswig-Holstein and Hamburg in Germany, and Region Skåne in Sweden.

The basis for the formation of the Fehmarnbelt Region is the proposed development of the 'Fehmarn Belt Fixed Link', a proposed tunnel beneath the Fehmarnbelt (Dan.: Femernbælt), an 18km-wide passage between the German island of Fehmarn and the Danish island of Lolland. The other important linkage in the region is the existing Öresund Bridge that connects the Danish capital Copenhagen to the Swedish town of Malmo in Skåne.

Once the Fehmarn Belt Fixed Link is constructed, the two connections will form a key transportation corridor linking northern Germany to Sweden via Denmark. A core objective of the Fehmarnbelt Region and a number of regional co-operations is to ensure that this linkage becomes a "green" transportation corridor, aimed at reducing environmental and climate impacts from transport while increasing safety and efficiency. A Green Growth Strategy is central to this purpose.



**STRING** III  
Southwestern Baltic Sea  
Transregional Area  
Implementing New Geography

REGION  
SJÆLLAND





**femern**  
belf LOGISTICS

### A GREEN GROWTH STRATEGY FOR THE FEHMARNBELT REGION

The overall objective of the Green Growth Strategy is to develop a common vision for green growth in the Fehmarnbelt Region. This means producing a common definition for green growth, as well as identifying the most appropriate policy instruments for supporting green growth within and between the Regional Partners. To this end, representatives from each Partner will be nominated to an 'Advisory Group' responsible for guiding the development the Green Growth Strategy.

The main output of the project will be a White Paper for Green Growth in the Fehmarnbelt Region that will present strategic policy recommendations optimised for environmentally-sound economic growth in a number of key sectors. The White Paper shall be supported by an Implementation Framework that will provide a "roadmap" of concrete policy actions as well as identify milestones to assess overall policy progress towards green growth.

### DEVELOPING A COMMON DEFINITION

While there is still discussion on how the term green growth should be defined, most experts agree that green growth requires a set of targeted government policies which promote the right kinds of growth, while discouraging the wrong kinds of growth. Green growth has been adopted as a key strategy by the EU and numerous international organisations, including the OECD and UNEP. However, each has developed its own definition for green growth.

A key objective of the green growth strategy is to develop a definition for green growth in the Fehmarnbelt Region. Developing a definition is important as it communicates a summary of the core issues to stakeholders and sets the scope for what is to be achieved. The definition may potentially be used as a basis for a green growth definition for the individual regions or countries involved, or even in wider regional co-operations (i.e. STRING, Scandria, TransBaltic etc).

The Advisory Group plays an important role in this activity. Each representative is asked to respond to a short survey designed to determine the most important key concepts and sectors for each regional administration.

### STAKEHOLDER ENGAGEMENT

A central element of this study is the involvement of stakeholders in the development of the green growth strategy. The purpose of stakeholder consultation is to develop and expand wider support for strategic green growth objectives. Stake-

### ABOUT THE PROJECT

The Green Growth Strategy project was commissioned by the Femern Belt Logistics Platform in February 2012 to support the development of a green transport corridor for the Fehmarnbelt Region. The author of this paper, Adrian Mill, is an environmental consultant with over 10 years' experience in environmental assessment, policy development and research. For more information, please contact Adrian Mill on +44 7957 705560.



The Oresund Bridge, a key component of the transport corridor.

holder engagement is intended to foster a sense of co-ownership and increase the likelihood of stakeholder satisfaction with proposed policy changes by determining what stakeholders want the strategy to achieve and what changes they are willing to accept. Potential stakeholders to be included in a 'Stakeholder Group' comprise representatives from NGOs, businesses, industry associations, local authorities or other regional co-operations. The Advisory Group would aid in identifying potential stakeholders. Stakeholders will contribute in developing and selecting green growth policies.

The preliminary consultation process timeline as it relates to the Advisory Group is as follows:

ACTION	DATE
1. Advisory Group to respond to survey	mid Mar 2012
2. Individual meetings with Advisory Group members	late Mar 2012
3. Advisory Group to provide list of potential stakeholders	early Apr 2012
4. Preliminary Framework to Advisory Group for review	mid Apr 2012

### NEXT STEPS

The next step is for the Advisory Group to undertake the online survey. The data from this will be analysed and the results reported to the Advisory Group in late March. The data and discussion will generate a working definition and list of sectors for later dissemination to the Stakeholder Group. Additional information will be provided on the following steps in email and phone communications to each Regional Partner representative.

The survey (approx. 5-10 minutes) can be taken at:

<http://www.surveymonkey.com/s/BSNJKPS>





Appendix 4b – Summary of Green Growth Consultation

7<sup>th</sup> May, 2012

# Summary of Green Growth Consultation

## A Green Growth Definition for the STRING Region



This Briefing Paper proposes a working definition for ‘green growth’ in the STRING Region based on consultations with representatives from the five regional partners (Region Hovedstaden, Region Sjælland, Hamburg, Schleswig-Holstein & Region Skåne). This paper presents the working definition and the rationale behind its development for review and agreement by key policy-makers within participating regional administrations. The proposed definition is as follows:

“The term ‘green growth’ recognises the need for economic growth that is balanced with environmentally and socially responsible economic development. Within the STRING Region, this means putting in place policies and strategies in identified economic sectors that address climate change by reducing harmful emissions, using energy and resources efficiently, and supporting business and industry in innovating and implementing green, low carbon approaches.”

### WHY DEVELOP A GREEN GROWTH DEFINITION?

A green growth definition that can be used by regional administrations and inter-regional associations within the STRING Region is important from numerous perspectives. Developing a clear definition helps to summarise the core issues that green growth aims to address, to set the scope for what is to be achieved and to communicate these objectives to stakeholders. More generally, the definition is intended to clearly set out the strategic policy directions that the regional administrations plan to undertake in order to realise green growth.

However, to be successful these policy directions must be aligned with existing policy objectives at EU, national and regional levels, as well as with the goals of relevant inter-regional bodies. Fortunately, political will to incorporate green growth objectives already exists at these levels. Sustainable growth, smart growth and inclusive growth are central priorities of Europe’s “EU 2020” growth strategy, and these priorities are clearly aligned with green growth. Nationally, Denmark, Germany and Sweden already prescribe to an agenda that, directly or indirectly, aims to achieve aspects of green growth within their economies. Further, each regional administration within the STRING Region is tasked at the national

level to pursue growth, and these administrations have indicated in strategic documentation that environmentally and socially responsible growth is central to their economic objectives. Lastly, both STRING and the Oresund Committee aim to implement green or climate-friendly growth within their respective regions.

### APPROACH

The following approach was adopted in developing a green growth definition:

1. Identify green growth definitions in the literature and distinguish key concepts from the definitions.
2. Consult Regional Partner representatives on which key concepts are relevant to each regional administration.
3. Synthesise the results and determine which key concepts are of common interest to the Regional Partners to warrant inclusion in a green growth definition.

The following page summarises the key findings from the development of a green growth definition. A more detailed description of the approach and findings will be provided in the forthcoming “Preliminary Framework for a Green Growth Strategy” document.



Aspects of green growth present within the EU 2020 growth strategy.

**DEFINITIONS AND KEY CONCEPTS IN THE LITERATURE**

It is generally agreed in the literature that green growth requires a set of targeted government policies which promote environmentally-sound growth while discouraging environmentally-damaging growth. Nonetheless, no universal definition for green growth exists that can be directly utilised. Various definitions have been developed by international organisations such as the OECD and UNEP. Although the use of an existing definition is possible, initial discussions with Advisory Group representatives identified the need to take into account the unique conditions present within the Regional Partners, and to solicit wider stakeholder views on green growth.

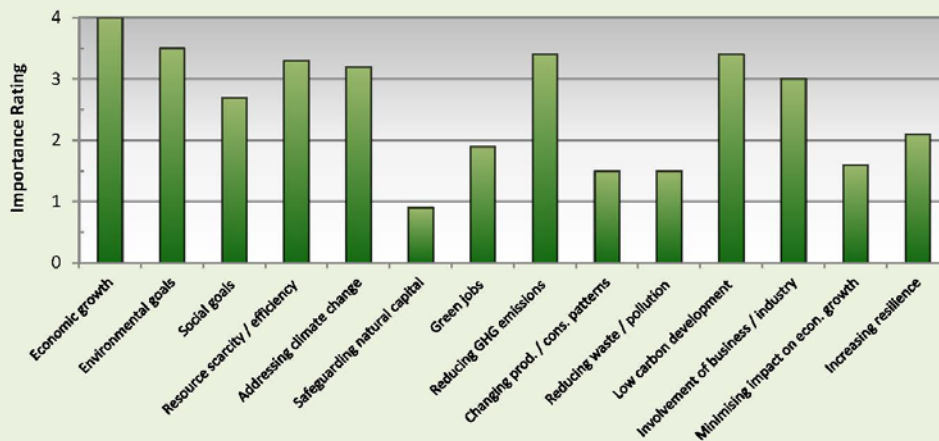
To facilitate this, existing green growth definitions were deconstructed into the 'key concepts' that could potentially be used in a definition for the STRING Region. Ten definitions for green growth were identified in the literature, from which 14 key concepts were distinguished (see graph below).

**CONSULTATION WITH REGIONAL PARTNERS**

The Regional Partners were asked to rate the identified key concepts in order to determine the perceived relevance and policy priority of each key concept within the context of the STRING Region's overall policy objectives. The rating scale was based on the relative importance of each key concept as follows:

Rating	Rating Description	Explanation
0	Not important	Concept is not addressed in policy currently nor in the near future
1	Dormant issue	Concept has been noted previously but not much has been done to implement
2	Of some interest	Concept is addressed in policy but is usually side-lined by other policy
3	Frequently addressed	Concept is often considered and implemented in regional policy
4	High priority	Concept is considered one of core aspects of regional policy

The below graph presents the results of the consultation based on the averaged ratings across the Regional Partners.



Key concepts and their average ratings, drawn from the individual ratings provided by each Regional Partner during the consultation.

**SYNTHESIS OF RESULTS**

Clearly, the three 'pillars' of sustainability (economic, environmental and social issues) were considered important by the majority of participants. Social issues were prioritised lower on average as social issues are not specifically addressed within regional policy and development plans. Although the regional partners indicated that many important social issues (such as gender equality) are considered well addressed from both national and regional perspectives, participants generally recognised a need to incorporate social goals as part of green growth.

Other more specific key concepts that were judged to be of importance to the Regional Partners included resource scarcity and efficiency, addressing climate change, reducing greenhouse gas (GHG) emissions, low carbon development and the involvement of business and industry. Consequently, each of these key concepts has been included in the proposed green growth definition for the STRING Region.

**NEXT STEPS**

The next step in developing a Green Growth Strategy is to come to a consensus regarding the proposed green growth definition. Each of the Advisory Group members is asked to review the green growth definition from the context of individual regional objectives, and provide comments if there are any concerns or overlooked issues that should be considered.

Advisory Group members are also asked to identify the importance of various economic sectors within which green growth may be pursued. This will be carried out through consultation with nominated representatives to confirm their policy and strategic documentation, and a simple survey. The Preliminary Framework document shall contain a summary of the key issues already addressed to date and the sectors to be examined in the strategy, for review and approval by the Advisory Group. After this, a plan for wider consultation with stakeholders in the region shall be developed, and finally work shall begin on the Green Growth Strategy.

## Appendix 5 – Minutes of Meetings

### Appendix 5a – Region Hovedstaden (Denmark)

Green Growth Strategy for the Fehmarnbelt Region  
Initial Meeting - March 2012

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#### Minutes of Meeting – Region Hovedstaden – 10am 22 March 2012

**LOCATION:** *Region Hovedstaden (Regionsgården, Kongens Vænge 2, Hillerød)*

**PRESENT:**

*Henrik Madsen (HM)*

*Adrian Mill (AM)*

- AM gave a short overview of his professional and educational background, as well as how he became involved in developing a green growth strategy (GGS).
- AM presented the project and its goals.
- HM gave overview of role of the Regional Development Department in Region Hovedstaden (R-H). Focus is on business development and regional development. Also addresses broader sectoral development issues (i.e. influencing planning) related to education and infrastructure, and provides a growth forum.
- HM noted that R-H is not an authority, and is more focussed on policy and strategy. Also R-H has no direct taxation powers.
- HM pointed out two main documents at regional level that are related to GG:
  - Regional Climate Strategy – 5 key pillars: climate ready, green transport, renewable energy, energy efficiency, climate-friendly public procurement.
  - Business Development Strategy (BDS) – general strategy (i.e. not focussed on GG). Strategy was co-financed by R-H & Sjælland. Focussed on cluster competencies (i.e. smart grids, biofuels). HM offered to email AM the PDF of this document in English.
- HM remarked that it appears that each region and national level is developing or has developed some form of strategy that considers or includes some form of GG. Noted that the BDS uses the word “green” in title.
- HM noted that political interest existed at national level in GG – new centre-left government.
- AM explained the objective of developing a policy matrix.
- HM recognised that national policy tends to drive regional strategy, and that a strong focus was on the “triple-helix” approach. Described “Power Lab” concept with Danish Technical University as an example of GG that related with national “Green Labs” initiative. “Gate 21” is another concept linking energy and environment that focusses on development and pilot projects.
- HM identified the use of wording “White Paper” and “Strategy” may not be appropriate. Proposed “Discussion Paper” or similar term to be used instead.
- AM responded that all issues relating to wording were open for discussion and proposed to mention this issue in later group discussions.
- HM pointed out that any approach to GG needs to be more structured – noted that GG is used in a rhetorical sense generally at present in R-H. AM agreed and pointed out that the purpose of this exercise is to define GG and provide more structure.

- HM noted that planning practices regarding floods, climate change and other issues varied between regions and municipalities.
- HM gave an overview of how the transport systems in R-H are not well aligned and operated by different companies (DSB, Movia, Metro).
- HM noted that the Environment Department was not really involved at strategic level, was focussed more on soil contamination issues.
- AM requested that a contact person be identified who would collect and pass on any relevant policy or strategic documentation. HM agreed to identify someone in the near future.
- AM noted that any discussion at the current meeting was considered the opinion of each person present (i.e. not official) and that future reporting would discuss issues in broader context and in general terms of regional direction.
- AM asked whether R-H would permit the use of their logo in future reporting. HM responded that he felt it was inappropriate to use each region's logo and that only STRING and Femern Logistics Platform logos should be used. AM proposed to mention this issue in later discussions.
- HM agreed that he and any identified colleagues would be kept CC'd in future emails.

## Appendix 5b – Region Sjælland (Denmark)

Green Growth Strategy for the Fehmarnbelt Region  
Initial Meeting - March 2012

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### Minutes of Meeting – Region Sjælland – 10am 23 March 2012

**LOCATION:** *Regional Udvikling (Alleen 15, 4180 Sorø)*

**PRESENT:**

*Rene Lonnee (RL)*

*Rebecca Rosenquist (RR)*

*Adrian Mill (AM)*

- AM gave a short overview of his professional and educational background, as well as how he became involved in developing a green growth strategy (GGG).
- AM presented the project and its goals.
- RL noted that different approaches towards implementing green growth objectives existed in each regional administration.
- RL gave overview of Region Sjælland (R-S) policy documentation:
  - Various policy documents (RL provided hard copies).
  - Most are quite recent.
  - Regional Development Plan issued Dec 2011.
  - Climate Strategy had been produced by regional council.
- AM asked whether economic growth and environment were considered in separate documents or together within each document. RL replied that these were mostly separate and was unsure how much each document informed the development of the other.
- RL pointed out that there is no specific GGS for R-S.
- AM explained the objective of developing a policy matrix.
- RL gave overview of how R-S developed policy:
  - R-S put forward a set of overall visions for to work towards: includes employment, innovation, linkages between metropolises.
  - Growth Forums were established using 'triple helix' approach. Each forum has sectoral focus. Main forums: Energy / Cleantech; Tourism; Medical / Hospitals; Agriculture + Food.
  - Each forum produces strategic recommendations and policy directions on each sector (or even more strategically) that R-S funds. Growth Forums responsible for implementing strategy.
- RL noted that energy efficiency is a strategic goal. Gave example of hospitals using sustainable practices & buildings.
- RL identified that public procurement is not an explicit strategic goal but was being pursued as part of Growth Forum initiatives. AM noted that one of the purposes of the GGS would be to help to identify these implicit goals and to recommend ones that should be made explicit in policy documentation.
- RR made mention of the Oresund Committee and how they are in the process of developing something similar to a GGS, and that this may have overlaps with a GGS. Already have produced an overall Oresund Regional Strategy, in the process of developing specific Ore-

sund Regional Climate & Cleantech Strategy – a mapping exercise for specific sector aimed at aiding with pooling of resources.

- RL noted that a GGS for the Fehmarnbelt Region would be very useful to R-S as it would help with identifying projects with stakeholders – similar to what already occurs with Centre of Advanced Technology (CAT). Would also be useful in identifying potential new areas for growth.
- AM used an example of agricultural practices in Schleswig-Holstein vs R-S to illustrate potential GG avenues that a GGS would identify.
- RL stressed that there is a strong need to define GG:
  - Don't want a STRING-level definition that doesn't represent wider OECD and other international definitions. Need to make GG definition relevant to higher-level and broader stakeholders.
  - Need to hold consultation with broader stakeholders (i.e. industry associations, NGOs etc).
  - AM replied that this was exactly the approach that was intended to be adopted in the development of a GGS.
- RL noted that GG indicators are very important in the GGS process. Also need to be sure that indicators match across Fehmarnbelt Region and with higher-level bodies (i.e. OECD). AM responded that this was indeed the case and that it was envisioned that indicators would be part of GGS.
- RL specified that the process should end with a White Paper that held firm recommendations. AM said that the overall process was up for discussion but that it was envisioned that this would occur.
- RR asked if the GGS would contain a sectoral breakdown. AM responded that this was the proposed approach.
- AM noted that any discussion at the current meeting was considered the opinion of each person present (i.e. not official) and that future reporting would discuss issues in broader context and in general terms of regional direction.
- AM requested that a contact person be identified who would collect and pass on any relevant policy or strategic documentation. RL agreed to identify someone within the following week.
- AM asked whether R-S would permit the use of their logo in future internal project reporting documents. RL agreed with provision that it was used in conjunction with STRING logo, with all other logos to be placed underneath. Need to be clear regarding participation and who was leading project.
- RL reiterated need to be clear on 'inspiration' behind GG definition, with relevance to other higher-level and broader stakeholders.
- AM proposed that RL, RR and any identified colleagues would be kept CC'd in future emails.

## Appendix 5c – Hamburg (Germany)

Green Growth Strategy for the Fehmarnbelt Region  
Initial Meeting - March 2012

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### Minutes of Meeting – Hamburg - 11am 20 March 2012

**LOCATION:** *Hamburg Metropolitan Region (Alter Steinweg 1-3)*

**PRESENT:**

*Dr Rolf-Barnim Foth (RBF)*

*Rieke Marxen (RM)*

*Beatrice Marx (BM)*

*Adrian Mill (AM)*

- RBF outlined the general policy directions that Hamburg is pursuing.
- AM gave a short overview of his professional and educational background, as well as how he became involved in developing a green growth strategy (GGS).
- AM presented the project and its goals.
- RBF, RM & BM noted that there is no GGS in any form for Hamburg. However, Hamburg has in place a regional development programme covering the next 3 years.
- AM gave several examples of how GGS would serve to align environmental and economic policy.
- BM noted that the “Climate Protection Concept” (Hamburg Climate Action Plan<sup>1</sup>) for Hamburg contained a number of environmental policy directions that relate to green growth.
- RBF noted that it has proved difficult to engage with other regional partners (especially in Denmark and Sweden), and that the only real forum for discussion has been within STRING.
- RM pointed out that a recent survey found that Hamburg residents consider their region to consider the environment in economic activities.
- RBF identified several sectors and cluster policies that Hamburg was actively pursuing that were synergetic with green growth (wind energy, electric cars, green port). These were fairly recent – e.g. wind cluster is 1 year old.
- RM pointed out that several north German states had met and made a joint decision on focusing on wind energy.
- RBF noted that Hamburg is part of Danish cleantech cluster.
- RBF noted that recently-elected mayor of Hamburg appears more likely to consider environmental issues – Mayor identified “engineer-based environmental protection” with may be analogous with green growth.
- AM asked to identify a contact person to identify relevant green growth policy. RBF & BM indicated that Elke Pavelczyk in Political Planning may be appropriate.
- RBF made the clarification that any discussion at the meeting was not an official political view and instead represented the informed opinions of the various meeting participants.
- BM offered to assist with identifying relevant regional environmental policy and co-ordinating with appropriate contacts in Ministry of Urban Development and Environment.<sup>2</sup>

- All agreed that they would be kept CC'd in future emails.

BM additional point - As Rolf-Barnim Foth and Rieke Marxen are part of the Economics Ministry and have better contacts to the Political Planning Department, BM would like to refer to them for those contacts.<sup>3</sup>

1 – Amended 20 Mar 2012, by request BM

2 – Amended 20 Mar 2012 - Point altered to incorporate fact BM can co-ordinate contacts with Ministry of Urban Development and Environment but not with other Ministries, by request BM. Original wording: BM offered to assist with identifying relevant regional environmental policy as well as with co-ordinating with appropriate contacts in Political Planning and the Economics Ministry.

3 – Amended 20 Mar 2012, by request BM.



## Appendix 5d – Schleswig-Holstein (Germany)

Green Growth Strategy for the Fehmarnbelt Region  
Initial Meeting - March 2012

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### Minutes of Meeting – Schleswig-Holstein – 3pm 20 March 2012

**LOCATION:** State Chancellery of Land Schleswig-Holstein (Düsternbrooker Weg 104)

**PRESENT:**

Stefan Musiolik (SM)

Dietmar Fehnert (DF)

Christa Häckel (CH)

Eileen von Eisner (EVE)

Adrian Mill (AM)

- AM gave a short overview of his professional and educational background, as well as how he became involved in developing a green growth strategy (GGS).
- AM presented the project and its goals.
- SM noted that any discussion at the current meeting was the opinion of each person present and that direct quoting of discussion would need to be approved by higher political authorities.
- AM reiterated that the meeting is to provide a preliminary indication of S-H policy directions and willingness to engage in GG process.
- SM drew attention to the fact that the S-H state secretary had spoke of GG previously. Also director of Baltic Development Forum discussed GG and smart growth.
- SM highlighted that EU2020 goals (inclusive growth, smart growth, sustainable growth), and particularly sustainable growth, should be key to the discussion – meeting EU2020 will be the requirement for cohesion policy after<sup>1</sup> 2013 and a GGS should help to attain this. Also important for obtaining EU financing at regional level. AM proposed to mention this in Preliminary Framework report.
- DF raised doubts as to how GG and sustainability interacted – concerned that GG would not achieve sustainability goals.
- DF pointed out that it has proven hard enough to implement sustainability in S-H, and was unsure how much easier GG would be.
- CH noted that supporting the social aspect was important. S-H has looked towards improving human resource development as well as family-friendly actions (i.e. flexible working hours).
- CH mentioned “short distance traffic” concept – a plan for Fehmarnbelt.
- CH specified that there was no existing of fixed GGS for S-H, although there was some co-operation.
- EVE noted that there were some completed and upcoming fairs / conferences that were related to GG
- AM asked all present to identify any key sectors of interest to S-H.
  - Renewables (especially wind and biogas), Power grid improvements.
- DF pointed out that agriculture approaches in Denmark varied greatly from S-H (e.g. restricted use of pesticides in DK compared to S-H).

- SM proposed that a GGS should focus on core strengths of Fehmarnbelt Region. Identified Health, Science & Education; Energy; Labour Mobility; Tourism; Green Transport Corridor.
- SM noted that agriculture, while important to consider, was not a key core area in his view.
- SM proposed to provide a study that highlighted this.
- SM identified a programme (“Landesentwicklungsplan 2010/ Regional Development Plan 2010”)<sup>2</sup> by the Ministry of Interior that would be useful to identify policy. Also referred to the “S-H 2030 strategy” which shall be presented by the Chamber of Industry and Commerce in Schleswig-Holstein in summer 2012.
- SM stressed that a GGS should provide “hints” on which approaches / actions were available and should be implemented to achieve GG. The GGS should also identify common fields or projects to focus on. AM proposed to mention this in Preliminary Framework report.
- AM went through key GG concepts to preliminarily identify overall importance of various concepts to S-H.
- DF highlighted that a problem is that each region has different administrative structures and planning procedures that present a barrier to achieving GG. AM proposed to mention this in Preliminary Framework report.
- DF noted that the Dept of Agriculture had identified a suite of 39 sustainability indicators but that data collection had not commenced properly to date. AM proposed to mention the potential use of the indicators in Preliminary Framework report.
- EVE identified several programmes and strategies that might be relevant to GG. These were required at German Federal level and implemented by S-H on its own initiatives.
  - Strategy to reuse brownfield sites for construction in order to reduce use of greenfield sites.
  - Sustainable procurement.
- SM identified a potential problem may be the use of the word “green” in the German language translation of “green growth” may present a political barrier as it may link the GGS to the Green Party, which other political parties may not wish to occur. Proposed alternatives such as “smart growth” and “sustainable growth” to alleviate this problem. AM proposed to mention this issue in Preliminary Framework report.
- AM requested that a contact person be responsible for collecting relevant policy and programme information. EVE kindly agreed to be responsible and to provide information after a separate discussion with the S-H representatives.
- SM pointed out that elections would be held on the 6<sup>th</sup> May which could potentially alter the political landscape.
- All agreed that they would be kept CC’d in future emails.

1 – Amended 6 April 2012, by request SM. Original wording: ‘– meeting EU2020 will be the requirement for cohesion policy after 2013 and a GGS should help to attain this’

2 – Amended 6 April 2012, by request SM. Original wording: SM identified a programme (“Land Programme”) by the Ministry of Interior that would be useful to identify policy. Also identified “S-H 2030” document.

## Appendix 5e – Region Skåne (Sweden)

### Minutes of Meeting – Region Skåne – 11am 26 March 2012

**LOCATION:** *Region Skåne Offices (Dockplatsen 26, Malmö)*

**PRESENT:**

*Per-Olof Persson (PP)*

*Peter Askman (PA)*

*Adrian Mill (AM)*

- AM gave a short overview of his professional and educational background, as well as how he became involved in developing a green growth strategy (GGS).
- PP & PA gave an overview of their respective departments.
- PP indicated that there is a strong priority given to GG and environment from Baltic and Swedish perspectives.
- PA noted that a big part of his unit revolved around maritime planning.
- PA pointed out that it is important to link GG to planning processes. Complicated structures in place – different administrative levels in Sweden, trans-national interactions, different sectoral policies etc. Important to link various strategies and policies.
- PA also noted that it is important to note cultural differences and establish links that account for these differences.
- AM expressed desire to use experience from involvement in Oresund Region to drive development of GGS.
- AM presented the project and its goals.
- PA asked if the overall approach was independent of the Fehmarnbelt fixed link. AM replied that GGS would be multi-sectoral but interest in GG had been driven by link and STRING.
- AM asked what Region Skåne would like to see in a GGS.
- PA identified the need for concrete results and recommendations – lots of visions to date, little implementation. Need to involve business and other stakeholders. Can link stakeholder engagement to existing meetings schedules within other programmes.
- PA noted that Region Skåne has been working on structures to foster GG objectives – meetings, trainings, dissemination of information etc. Stakeholder engagement is part of Environmental Strategy document – one of key objectives to foster co-ordination.
- AM gave example of need to engage stakeholders and barriers to GG – Danish concrete company's fear of green 'stealth' taxes.
- PA noted that Region Skåne had similar green tax system.
- AM presented the idea of developing a Policy Matrix comparing and contrasting each region's policy frameworks.
- AM gave example of how GGS might look – discussed agriculture and wind power.
- PP mentioned that Fehmarnbelt area would soon have huge investment in wind power.
- PA pointed out that there seemed to be a lack of co-operation between industrial associations across borders. PP also identified lacking co-operation with Danish clusters.

- AM noted that any discussion at the current meeting was considered the opinion of each person present (i.e. not official) and that future reporting would discuss issues in broader context and in general terms of regional direction.
- PA put forward that there is potential that big industry (i.e. in wind sector) are setting the agenda.
- AM went through key GG concepts to preliminarily identify overall importance of various concepts to Region Skåne.
- PP noted that different strategies were used in variety of sectors. Gave examples of beer cans in Sweden vs glass in Germany, differences in use of biogas and natural gas in each country. AM pointed out that scope exists to align certain strategies.
- PP identified language as a key issue.
- AM asked whether Region Skåne had a similar system to the 'Growth Forum' system in Region Sjælland. PP replied it was not the same but similar – clusters (e.g. Ideon, incubators) can inform policy but Region Skåne implements.
- AM requested that a contact person be responsible for collecting relevant policy and programme information. PA kindly agreed to be regional contact. PA also to identify representative from business development department.
- PP pointed out that it was odd that Region Sjælland logo was used while other STRING partners were not.<sup>1</sup>
- All agreed that they would be kept CC'd in future emails.

1 – Amended 27 March 2012, by request PP. Original wording: PP asked that Region Skåne logo be used only if all other regional logos are used.

## Appendix 5f – Öresund Committee

### Minutes of Meeting – Oresund Committee – 1pm 26 March 2012

**LOCATION:** Oresund Committee Offices (Nørregade 7B, 3rd Floor, Copenhagen)

**PRESENT:**

Finn Lauritzen (FL)

Adrian Mill (AM)

- AM gave a short overview of his professional and educational background, as well as how he became involved in developing a green growth strategy (GGS).
- AM presented the project and its goals.
- FL noted that there were synergies with Green Transport Corridor project. Need for green, fast, reliable transport in region. Useful to improve labour flows. Need for change of modes from car / truck to rail, high speed trains etc.
- FL pointed out that political priority may be on green issues, but there were numerous obstacles. One barrier may be potential differences in political approaches between Oresund Region and German regions.<sup>1</sup> Need for GG to transform business - drive changes in activities to be more environmentally-friendly.
- AM gave example of how GGS might look – discussed agriculture and wind power.
- FL pointed out that no climate strategy existed for Oresund Region, although environmental aspects were addressed under other documents. No real climate objectives at Oresund level – need to define (example of each region aiming to be ‘fossil-free’). AM noted that GGS could help with this.
- AM asked whether the Oresund Region had identified any environmental or GG objectives. FL replied that no specific objectives had been set out for Oresund Region.
- FL noted that politicians in the Oresund Region wanted to be leaders on environmental objectives:
  - CO2 to be lower than others,
  - Strong in green buildings / energy efficiency,
  - Copenhagen focus on biking,
  - GG – politicians seem to agree can be done,
  - Focus on generating employment and economic growth through environmentally-friendly activities – services, cleantech, new products / ideas.
- AM asked what was the Oresund Committee’s contribution to facilitating such a transition towards leading on environmental issues.
- FL identified the development of a Political Working Group who would be responsible for Environment and GG. In process of being established – end May, to begin work after summer. No political power – will provide more sectoral overview (e.g. how to green public procurement).
- FL gave example of lack of co-ordination at business level – e.g. of international industry conference where very few Swedish business representatives attended.

- FL noted that there existed a very good political connection between politicians in Copenhagen and Malmö, however this was not so prevalent in business. Nonetheless some examples exist – gave example of Medican Valley life science park.
- AM asked whether a GGS would be useful to OC. FL replied that it would.
- AM proposed to keep FL CC'd in future emails.

1 – Amended 30 Mar 2012 – removed word “asymmetry” and made context clearer. Original sentence: “Potential asymmetry between Oresund Region and German regions”. Changed by request FL.

## Appendix 6 – Key Concept Coding from Green Growth Definitions in the Literature

The following is a list of definitions for green growth or synonymous concepts (e.g. green economy) that was derived from the literature. There is considerable variation in the wording used by the various agencies in defining key concepts of green growth. Given that green growth is considered a component of the overall sustainability agenda, the concept ‘sustainability’ was not considered in this coding exercise.

The following methodology was adopted based on a coding methodology presented in (Flick, 2009):

- Definitions of ‘green growth’ (and the related concept ‘green economy’) were obtained from the literature (Table 10-1),
- Important ‘constituent concepts’ related to green growth were identified from each definition (coloured items in Table 10-1),
- These concepts were then grouped together under simplified headings of concepts of similar typology called ‘key concepts’ (coloured items in Table 10-2),
- A cumulative count of key concepts present in a definition (regardless of whether mentioned once or more times in a definition) was recorded (Table 10-2).

Table 10-1: Definitions of green growth and constituent concepts identified in each.

Organisation	Definition
CDKN (CDKN, 2011)	Green growth is a relatively new concept, with varying definitions and names, many of which are focused on linking <b>economic growth</b> and <b>climate change</b> (e.g. Low Emissions Development, Climate Compatible Development). While interpretations and terminology vary, the green growth agenda aims for a number of strategic outcomes alongside <b>economic development</b> . These could include <b>responding to climate change</b> (both <b>emissions reduction</b> and <b>climate resilience</b> ), <b>loss of natural capital</b> , <b>resource scarcity</b> , and <b>addressing social or development objectives such as poverty reduction</b> .
GGL (GGL, 2011)	<b>Job creation</b> or <b>GDP growth</b> compatible with or driven by <b>actions to reduce greenhouse gasses</b> .
GTZ (GTZ, 2011)	Green Growth is a strategy for <b>promoting economic growth</b> with the goal of adding an <b>ecological quality to existing economic processes</b> and <b>creating additional jobs and income opportunities</b> with a <b>minimal environmental burden</b> . This primarily means seeking a relative or absolute decoupling of <b>economic growth</b> and <b>environmental degradation</b> , depending on the local context. It is also essential to take into account the <b>risks involved with future changes in the environment</b> , e.g. by <b>adapting to climate change</b> and <b>international obligations</b> within the framework of an <b>environmentally qualitative policy</b> .
ICC Green Economy Task Force (ICC, 2011)	The business community believes that the term “Green Economy” is embedded in the broader sustainable development concept. The “Green Economy” is described as an economy in which <b>economic growth</b> and <b>environmental responsibility</b> work together in a mutually reinforcing fashion while supporting <b>progress on social development</b> . <b>Business and industry</b> have a crucial role in <b>delivering the economically viable products, processes, services, and solutions required</b> for the transition to a Green Economy.
OECD (OECD, 2011)	Green growth means <b>fostering economic growth and development</b> while <b>ensuring that natural assets continue to provide the resources and environmental services</b> on which <b>our well-being relies</b> .
SINGG (SINGG, 2008)	Green Growth is a regional strategy for achieving sustainable development adopted by the ESCAP Ministerial Conference in 2005. Based on the “Ecological Efficiency” paradigm, Green Growth advocates <b>growth in GDP</b> that <b>maintains or restores environmental quality and ecological integrity</b> , while <b>meeting the needs of all people</b> with the lowest possible environmental impacts. It is a strategy that seeks to <b>maximize economic output</b> while <b>minimizing the ecological burdens</b> . This new approach seeks to harmonize <b>economic growth</b> and <b>environmental sustainability</b> by promoting “ <b>fundamental changes in the way</b>



	<b>societies produce and consume</b> <sup>7</sup> , as called for in the Johannesburg Plan of Implementation.
UNEP (UNEP, 2011)	A Green Economy can be defined as one that results in <b>improved human wellbeing and social equity</b> , while <b>significantly reducing environmental risks and ecological scarcities</b> .
UNEP-ROAP (UNEP-ROAP, 2012)	Greening the economy refers to the process of <b>reconfiguring businesses and infrastructure</b> to deliver better returns on <b>natural, human and economic</b> capital investments, while at the same time <b>reducing greenhouse gas emissions, extracting and using less natural resources, creating less waste and reducing social disparities</b> .
UNESCAP (UNESCAP, 2010)	Green Growth is <b>environmentally-sustainable economic progress</b> that fosters <b>low carbon, socially inclusive development</b> .
WB (WB, 2011)	Green growth is about making <b>growth processes resource-efficient, cleaner and more resilient</b> <sup>8</sup> without necessarily slowing them.

Table 10-2: Key concepts derived from definitions and number of documents each concept is found in.

Key Concept	Constituent Concepts	Document(s) Concept is Found In	#
<b>Fostering economic or GDP growth / development</b>	<ul style="list-style-type: none"> <li>- economic growth</li> <li>- economic development</li> <li>- promoting economic growth</li> <li>- existing economic processes</li> <li>- growth in GDP</li> <li>- maximize economic output</li> <li>- economic capital investments</li> <li>- economic progress</li> <li>- growth processes</li> </ul>	(CDKN, 2011; GGL, 2011b; GTZ, 2011; ICC, 2011; OECD, 2011; SINGG, 2008; UNEP-ROAP, 2012; UNESCAP, 2010; WB, 2011)	9
<b>Addressing environmental goals / risks</b>	<ul style="list-style-type: none"> <li>- ecological quality</li> <li>- minimal environmental burden</li> <li>- environmental degradation</li> <li>- risks involved with future changes in the environment</li> <li>- international obligations</li> <li>- environmentally qualitative policy</li> <li>- environmental responsibility</li> <li>- maintains or restores environmental quality and ecological integrity</li> <li>- minimizing the ecological burdens</li> <li>- environmental sustainability</li> <li>- significantly reducing environmental risks and ecological scarcities</li> <li>- natural capital investments</li> <li>- environmentally-sustainable</li> </ul>	(GTZ, 2011; ICC, 2011; OECD, 2011; SINGG, 2008; UNEP-ROAP, 2012; UNEP, 2011b; UNESCAP, 2010)	7
<b>Accounting for social goals</b>	<ul style="list-style-type: none"> <li>- addressing social or development objectives such as poverty reduction</li> <li>- progress on social development</li> <li>- our well-being relies</li> <li>- meeting the needs of all people</li> <li>- improved human wellbeing and social equity</li> <li>- human capital investments</li> <li>- socially inclusive development</li> </ul>	(CDKN, 2011; ICC, 2011; OECD, 2011; SINGG, 2008; UNEP-ROAP, 2012; UNEP, 2011b; UNESCAP, 2010)	7
<b>Resource scarcity /</b>	<ul style="list-style-type: none"> <li>- resource scarcity</li> </ul>	(CDKN, 2011; UNEP-ROAP, 2012;	3

<sup>8</sup> Resilient, in this context, refers to “increasing resilience to environmental shocks, such as natural disaster, and economic shocks, such as oil shocks, or spikes in commodity prices” (WB, 2011).

<b>efficiency</b>	<ul style="list-style-type: none"> <li>- extracting and using less natural resources</li> <li>- resource-efficient</li> </ul>	WB, 2011)	
<b>Addressing / adapting to climate change</b>	<ul style="list-style-type: none"> <li>- climate change</li> <li>- responding to climate change</li> <li>- adapting to climate change</li> </ul>	(CDKN, 2011; GTZ, 2011)	2
<b>Safeguarding natural assets / capital</b>	<ul style="list-style-type: none"> <li>- loss of natural capital</li> <li>- ensuring that natural assets continue to provide the resources and environmental services</li> </ul>	(CDKN, 2011; OECD, 2011)	2
<b>Green sector jobs / job creation</b>	<ul style="list-style-type: none"> <li>- creating additional jobs and income opportunities</li> <li>- Job creation</li> </ul>	(GGL, 2011b; GTZ, 2011)	2
<b>GHG emissions reductions</b>	<ul style="list-style-type: none"> <li>- emissions reduction</li> <li>- actions to reduce greenhouse gasses</li> <li>- reducing greenhouse gas emissions</li> </ul>	(CDKN, 2011; GGL, 2011b; UNEP-ROAP, 2012)	3
<b>Changes in production and consumption</b>	<ul style="list-style-type: none"> <li>- delivering the economically viable products, processes, services, and solutions required</li> <li>- fundamental changes in the way societies produce and consume</li> </ul>	(ICC, 2011; SINGG, 2008)	2
<b>Waste / pollution reduction</b>	<ul style="list-style-type: none"> <li>- creating less waste</li> <li>- cleaner</li> </ul>	(UNEP-ROAP, 2012; WB, 2011)	2
<b>Low carbon</b>	<ul style="list-style-type: none"> <li>- low carbon</li> </ul>	(UNESCAP, 2010)	1
<b>Involvement of business / industry</b>	<ul style="list-style-type: none"> <li>- Business and industry</li> <li>- reconfiguring businesses and infrastructure</li> </ul>	(ICC, 2011; UNEP-ROAP, 2012)	2
<b>Minimising impact on growth</b>	<ul style="list-style-type: none"> <li>- without necessarily slowing them</li> </ul>	(WB, 2011)	1
<b>Increasing resilience</b>	<ul style="list-style-type: none"> <li>- more resilient</li> </ul>	(CDKN, 2011; WB, 2011)	2

## Document List for Definitions

CDKN (Climate and Development Knowledge Network). (2011). CDKN Guide: Green Growth - Implications for Development Planning. Retrieved from: <http://cdkn.org/resource/green-growth-guide/> (Date accessed: 1 February 2012).

Flick, U. (2009). An Introduction to Qualitative Research. London, U.K.: Sage Publications, Ltd.

GGL (Green Growth Leaders). (2011). Shaping the Green Growth Economy - A Review of the Public Debate and the Prospects for Green Growth. Copenhagen, Denmark: GGL.

GTZ (Gesellschaft für Technische Zusammenarbeit - German Technical Co-operation Agency). (2011). Discussion Paper - Green Growth. Retrieved from: <http://www.enterprise-development.org/download.aspx?id=1544> (Date accessed: 22 December 2011).

ICC (International Chamber of Commerce). (2011). Ten Conditions for a Transition Toward a “Green Economy”. Paris, France: ICC Task Force on Green Economy. Retrieved from: [http://www.iccwbo.org/uploadedfiles/ICC/policy/Environment/Statements/10%20Conditions%20Green%20Economy\\_FINAL.pdf](http://www.iccwbo.org/uploadedfiles/ICC/policy/Environment/Statements/10%20Conditions%20Green%20Economy_FINAL.pdf) (Date accessed: 14 February 2012).

OECD (Organisation for Economic Co-operation and Development). (2011). *Towards Green Growth*. Paris, France: OECD Green Growth Studies, OECD Publishing.

SINGG (Seoul Initiative Network on Green Growth). (2008). *Background Document - The Green Growth Approach for Climate Action*. The 3rd Policy Consultation Forum of the Seoul Initiative Network on Green Growth: Green Growth and Sustainable Consumption and Production for Climate Action. Held 18-20 September 2008, Cebu, Philippines. Retrieved from: [http://www.greengrowth.org/download/The\\_Green\\_Growth\\_Approach\\_for\\_Climate\\_Action.Jan.Barnes.pdf](http://www.greengrowth.org/download/The_Green_Growth_Approach_for_Climate_Action.Jan.Barnes.pdf) (Date accessed: 22 December 2011).

UNEP-ROAP (United Nations Environment Programme - Regional Office for Asia Pacific). (2012). *UNEP Regional Office for Asia Pacific - Green Economy Initiative*. Retrieved from: <http://www.unep.org/roap/Activities/ResourceEfficiency/GreenEconomyInitiative/tabid/6825/Default.aspx> (Date accessed: 14 February 2012).

UNEP (United Nations Environment Programme). (2011). *Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication*. Geneva, Switzerland: UNEP.

UNESCAP (United Nations Economic and Social Commission for Asia and the Pacific). (2010). *Low Carbon Green Growth – Integrated Policy Approach to Climate Change for Asia-Pacific Developing Countries*. Retrieved from: [http://www.greengrowth.org/download/2010/LCGG\\_web.version.pdf](http://www.greengrowth.org/download/2010/LCGG_web.version.pdf) (Date accessed: 14 February 2012).

WB (World Bank). (2011). *From Growth to Green Growth - A Framework*. Policy Research Working Paper 5872. Office of the Chief Economist, Sustainable Development Network. Washington D.C., U.S.: World Bank. Retrieved from: [http://www-wds.worldbank.org/external/default/WDSContentServer/WDS/IB/2011/12/07/000158349\\_20111207171314/Rendered/PDF/WPS5872.pdf](http://www-wds.worldbank.org/external/default/WDSContentServer/WDS/IB/2011/12/07/000158349_20111207171314/Rendered/PDF/WPS5872.pdf) (Date accessed: 14 February 2012).

## Appendix 7 – Green Growth Definition Key Concepts Survey Results

### Appendix 7a – Region Hovedstaden (Denmark)

*Participants:*

- Henrik Madsen

*Survey Results:*

Topic	Importance	Docs	Progs	Dept
Fostering economic or GDP growth / development	4	X	X	X
Addressing environmental goals / risks	3-4	X	X	No dedicated
Accounting for social goals	1-2			No dedicated
Resource scarcity / efficiency	3-4	Climate Strategy	X	No dedicated
Addressing / adapting to climate change	4			
Safeguarding natural assets / capital	-			
Green sector jobs / green job creation	1-2	Business Dev Strat	e.g. hospital clustering	
Reducing GHG emissions	4	Climate Strategy		
Changing production and consumption patterns	3 e.g. Green Public Procure.	Climate Strategy		
Reducing waste / pollution	1-2 Mostly at municipal level			
Low carbon development	4	Climate Strategy	X	No dedicated
Involvement of business / industry	4 e.g. Power Lab	Business Dev Strat	Various R-H initiatives	
Minimising impact on economic growth	- (already beyond this)			
Increasing resilience (env., social or economic)	3	Climate Strategy	At Reg. & indiv. lvl	
Fostering economic or GDP growth / development	4	X	X	X
Addressing environmental goals / risks	3-4	X	X	No dedicated

## Appendix 7b – Region Sjælland (Denmark)

### Participants:

- René Lønnee

### Survey Results:

Topic	Importance	Docs	Progs	Dept
Fostering economic or GDP growth / development	4			Y
Addressing environmental goals / risks	2			
Accounting for social goals	2			
Resource scarcity / efficiency	2			Y
Addressing / adapting to climate change	4	y	y	Y
Safeguarding natural assets / capital	2			Y
Green sector jobs / green job creation	2			Y
Reducing GHG emissions	2			
Changing production and consumption patterns	3		Y	y
Reducing waste / pollution	3	y	y	Y
Low carbon development	3			Y
Involvement of business / industry	4	Y	y	y
Minimising impact on economic growth	4	y	y	Y
Increasing resilience (env., social or economic)	2			

## Appendix 7c – Hamburg (Germany)

### Participants:

- Dr Rolf-Barnim Foth
- Rieke Marxen
- Beatrice Marx

### Survey Results:

Topic	Importance	Docs	Progs	Dept
Fostering economic or GDP growth / development	4			
Addressing environmental goals / risks	4			
Accounting for social goals	4			
Resource scarcity / efficiency	4		x	
Addressing / adapting to climate change	4			
Safeguarding natural assets / capital	2-3			
Green sector jobs / green job creation	2			
Reducing GHG emissions	4			
Changing production and consumption patterns	-			
Reducing waste / pollution	-			
Low carbon development	3			
Involvement of business / industry	2			
Minimising impact on economic growth	3			
Increasing resilience (env., social or economic)	2-3			

## Appendix 7d – Schleswig-Holstein (Germany)

### Participants:

- Stefan Musiolik
- Dietmar Fehnert
- Christa Häckel
- Eileen von Eisner

### Survey Results:

Topic	Importance	Docs	Progs	Dept
Fostering economic or GDP growth / development	4			
Addressing environmental goals / risks	4			
Accounting for social goals	2	X Indicators / no goals		
Resource scarcity / efficiency	4			
Addressing / adapting to climate change	-			
Safeguarding natural assets / capital	-			
Green sector jobs / green job creation	-			
Reducing GHG emissions	3			
Changing production and consumption patterns	-			
Reducing waste / pollution	-			
Low carbon development	3			
Involvement of business / industry	2			
Minimising impact on economic growth	1			
Increasing resilience (env., social or economic)	1			

## Appendix 7e – Region Skåne (Sweden)

### Participants:

- Per-Olof Persson
- Peter Askman

### Survey Results:

Topic	Importance	Docs	Progs	Dept
Fostering economic or GDP growth / development	4			
Addressing environmental goals / risks	4	Env. Strat		
Accounting for social goals	4			
Resource scarcity / efficiency	3	Env. Strat		
Addressing / adapting to climate change	4 (focus on public procurement)	Env. Strat		
Safeguarding natural assets / capital	-			
Green sector jobs / green job creation	4			
Reducing GHG emissions	4	Env. Strat		
Changing production and consumption patterns	1-2 (different priorities for prod. vs cons.)			
Reducing waste / pollution	3 (mostly internal actions e.g. hospitals, recycling)			
Low carbon development	4	Env. Strat		
Involvement of business / industry	3 (focus on dialogue)	Env. Strat + others		
Minimising impact on economic growth	-			
Increasing resilience (env., social or economic)	2			



## Appendix 8 – Green Growth Sectors in the Literature

Sectors	Sub-sectors	Document(s)	No.
Agriculture		(B20 Working Group XII, 2011; EC, 2011; EEA, 2011; Ellis, 2009; Jaeger et al, 2011; OECD, 2011; OECD/EAP, 2009; SINGG, 2008; UNDESA, 2010; UNEP, 2008; 2009; 2010; 2011b)	13
	Farming	(EC, 2011; UNEP, 2009)	2
	Food	(EEA, 2011)	1
	Fruit and vegetables	(Ellis, 2009)	1
	Land (land-use, land-use change)	(EEA, 2011; Ellis, 2009)	2
	Livestock	(Ellis, 2009)	1
	Organic agriculture	(UNEP, 2009; 2011b)	2
Banking		(UNEP, 2009)	1
Buildings		(B20 Working Group XII, 2011; EC, 2010; G20 Working Group IX, 2010; IEA, 2009; OECD/EAP, 2009; SINGG, 2008; UNDESA, 2010; UNEP, 2008; 2009; 2010; 2011b)	11
	Cities	(UNEP, 2010)	1
	Construction	(EC, 2011; Ellis, 2009; Jaeger et al, 2011; OECD, 2011; UNEP, 2008; 2009; 2011b)	7
	Commercial	(UNEP, 2011a; 2011b)	2
	Energy efficient buildings	(UNEP, 2009; 2010)	2
	Heating	(B20 Working Group XII, 2011)	1
	Residential	(EC, 2010; 2011; Ellis, 2009; UNEP, 2011a; 2011b)	5
	Retrofitting	(UNEP, 2009)	1
Business		(EEA, 2011; Ellis, 2009)	2
	Environmental Goods and Services	(EEA, 2011; OECD, 2011; UNEP, 2008)	3
	Small and Medium Enterprises	(UNEP, 2011a)	1
Energy		(B20 Working Group XII, 2011; EC, 2010; 2011; EEA, 2011; Ellis, 2009; G20 Working Group IX, 2010; GGL, 2011a; 2011b; Global Unions, 2009; IEA, 2009; Jaeger et al, 2011; OECD, 2011; SINGG, 2008; UNEP, 2010; 2011b)	15
	Biodiesel (ethanol)	(Ellis, 2009; GGL, 2011a; UNEP, 2008)	3
	Electricity (power)	(EC, 2011; Global Unions, 2009; IEA, 2009; Jaeger et al, 2011)	4
	Nuclear	(Ellis, 2009)	1
	Renewable energies	(Ellis, 2009; Forfás, 2010; GGL, 2011a; 2011b; Global	12

		Unions, 2009; OECD, 2011; OECD/EAP, 2009; UNDESA, 2010; UNEP, 2008; 2009; 2010; 2011b)	
	Energy efficiency	(Forfás, 2010; GGL, 2011b; Global Unions, 2009; UNEP, 2008)	3
	Solar	(UNEP, 2008; 2011b)	2
	Wind	(Ellis, 2009; G20 Working Group IX, 2010; UNEP, 2008)	3
Ecosystem services and Biodiversity		(OECD, 2011)	1
Extractive (mining, natural resources)		(EEA, 2011; OECD, 2011; SINGG, 2008)	3
Forestry (sustainable forestry, wood processing)		(EC, 2011; EEA, 2011; Ellis, 2009; OECD, 2011; OECD/EAP, 2009; SINGG, 2008; UNDESA, 2010; UNEP, 2008; 2010; 2011b)	10
Fisheries		(Ellis, 2009; OECD, 2011; UNEP, 2010; 2011b)	4
	Aquaculture	(Ellis, 2009)	1
Industry (industrial)		(B20 Working Group XII, 2011; EC, 2010; 2011; EEA, 2011; Ellis, 2009; G20 Working Group IX, 2010; GGL, 2011a; Jaeger et al, 2011; SINGG, 2008; UNEP, 2008; 2009; 2011a; 2011b)	13
	Manufacturing	(EC, 2011; Ellis, 2009; OECD, 2011; SINGG, 2008; UNEP, 2010; 2011b)	6
	Materials efficiency	(UNEP, 2009)	1
Infrastructure		(OECD, 2011)	1
Rural development		(SINGG, 2008)	1
Services (domestic, service)		(EC, 2010; 2011; Ellis, 2009; GGL, 2011a; Global Unions, 2009; Jaeger et al, 2011)	6
	Environmental Consultancy	(Forfás, 2010)	1
Technology (high-tech, environmental technologies)		(Ellis, 2009; Global Unions, 2009; UNEP, 2011b)	3
	Cleantech	(GGL, 2011a; OECD/EAP, 2009; UNDESA, 2010; UNEP, 2008; 2010)	5
	Pollution abatement	(SINGG, 2008)	1
	Information and Communication Technologies (ICT)	(Forfás, 2010)	1
Transport (transportation)		(B20 Working Group XII, 2011; EC, 2010; 2011; Ellis, 2009; G20 Working Group IX, 2010; GGL, 2011a; IEA, 2009; OECD, 2011; OECD/EAP, 2009; Perkins, 2011; SINGG, 2008; UNDESA, 2010; UNEP, 2008; 2009; 2010; 2011a; 2011b)	17
	Low-carbon transport	(UNEP, 2010)	1

	Public transport	(Global Unions, 2009)	1
Travel and Tourism (eco-tourism)		(EEA, 2011; Ellis, 2009; Global Unions, 2009; UNEP, 2010)	4
Waste (waste management, waste disposal)		(Ellis, 2009; Forfás, 2010; OECD/EAP, 2009; SINGG, 2008; UNDESA, 2010; UNEP, 2009; 2010; 2011b)	8
	Recycling (remanufacturing, recovery)	(Forfás, 2010; G20 Working Group IX, 2010; UNEP, 2008; 2009; 2011b)	5
Water (water services, water management)		(EEA, 2011; Forfás, 2010; OECD, 2011; OECD/EAP, 2009; UNDESA, 2010; UNEP, 2009; 2010; 2011b)	8
	Freshwater (provision, catchments & irrigation)	(UNEP, 2009; 2010; 2011b)	3
	Sanitation	(UNEP, 2009; 2011b)	2

Note: Sectors and sub-sectors that have been identified with the adjectives “green”, “sustainable” or “low-carbon” (i.e. green buildings) have been shortened to their base sector name (i.e. buildings) for the purposes of this exercise.

### List of Documents used to Identify Sectors

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