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OECD Tourism Papers

## **Green Innovation in Tourism Services**

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The OECD is a multi-disciplinary inter-governmental organisation of 34 member countries which engages in its work an increasing number of non-members from all regions of the world. The Organisation's core mission today is to help governments work together towards a stronger, cleaner, fairer global economy. Through its network of 250 specialised committees and working groups, the OECD provides a setting where governments compare policy experiences, seek answers to common problems, identify good practice, and co-ordinate domestic and international policies.

The OECD member countries are: Australia, Austria, Belgium, Canada, Chile, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States. The European Commission takes part in the work of the OECD.

## ABOUT THE TOURISM COMMITTEE

The OECD has a long-standing expertise on tourism. Tourism is located in the OECD Centre for Entrepreneurship, SMEs and Local Development (CFE). The Tourism Committee, created in 1948, acts as the OECD forum for exchange, and for monitoring policies and structural changes affecting the development of domestic and international tourism. It actively promotes the sustainable economic growth of tourism.

Addressing the major challenges faced by the tourism industry, and maximising tourism's full economic potential, requires an integrated and multi-faceted approach to tourism policy development across many government levels and departments. In this environment, OECD members see considerable benefit in co-operating to address economic, sustainability and employment issues, and promote tourism policy performance and evaluation, innovation and liberalisation of tourism. A closer co-operation with major emerging economies is also seen as being critical to achieving a strong impact with this work.

## ACKNOWLEDGMENTS

Peter Haxton co-ordinated the project on Green Innovation in Tourism Services, in close collaboration with Alain Dupeyras. This report is intended to contribute to the *OECD Green Growth Strategy* and support the implementation of the *OECD Innovation Strategy*. It also seeks to build upon the OECD's *Innovation and Growth in Tourism*. In addition to the above publications, the report draws upon the substantial and significant work already completed, where relevant to tourism, with major sources including: the OECD's *Better Policies to Support Eco-innovation* and *Fostering Innovation for Green Growth*; and the UNEP/UNWTO chapter on *Tourism – Investing in energy and resource efficiency* within UNEP's *Towards a Green Economy*.

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All chapters benefitted from significant input and guidance from the OECD Tourism Committee, and in particular members of the informal project Steering Committee from Austria, France, Mexico, Portugal, Slovenia, Spain, and Switzerland.

## TABLE OF CONTENTS

EXECUTIVE SUMMARY .....	7
Policy orientations .....	10
CHAPTER 1 – TOURISM AND THE GREEN ECONOMY	
Introduction.....	13
The need for Green Growth .....	14
Tourism in a Green Economy .....	19
Summary of key issues and report outline .....	22
CHAPTER 2 – THE POLICY ENVIRONMENT FOR GREEN INNOVATION IN TOURISM	
Introduction.....	23
Policy issues for green innovation .....	23
Green innovation in tourism .....	29
Approaches to green innovation in OECD member countries.....	31
Summary of key issues and findings.....	44
CHAPTER 3 – GREEN BUSINESS MODEL INNOVATION IN TOURISM	
Introduction.....	47
Business models and challenges for green innovation.....	47
The Green Innovation Radar.....	49
Green business model innovation and tourism .....	52
Businesses tools to implement green business model innovation.....	56
Policy Conclusions .....	59
CHAPTER 4 – DRIVERS AND BARRIERS TO GREEN INNOVATION IN TOURISM	
Introduction.....	61
Overcoming barriers: enabling conditions.....	61
Drivers and barriers in OECD member countries .....	63
Success factors for green innovation in OECD countries .....	70
Summary of key issues and findings.....	73
REFERENCES .....	75

## Tables

Table 1.	Country approaches to supporting green innovation in tourism.....	32
Table 2.	Government departments responsible for green innovation initiatives relevant to tourism ..	43
Table 3.	Industry-led initiatives supporting green innovation in tourism.....	44
Table 4.	The 12 dimensions of innovation .....	50
Table 5.	Maturity levels for green business model innovation.....	57
Table 6.	Drivers for green innovation in tourism .....	64
Table 7.	Barriers to increased green innovation in tourism.....	65
Table 8.	Success factors for green innovation in tourism.....	70

## Figures

Figure 1.	Has your organisation's business model changed to improve sustainability? .....	48
Figure 2.	Is pursuing sustainability related strategies necessary to be competitive? .....	49
Figure 3.	Unfocussed Innovation Radar profile.....	51
Figure 4.	Focussed Innovation Radar profile.....	52
Figure 5.	Primary innovation orientations for BMI companies: classic Vs green Innovation Radar ...	53

## Boxes

Box 1.	Degrees of Innovation for Green Growth.....	25
Box 2.	Fáilte Ireland Green Tourism initiatives.....	34
Box 3.	Mexico: Green Tourism Initiatives.....	35
Box 4.	New Zealand: Green Growth Advisory Group.....	37
Box 5.	Norway: Environmental certification promoting innovation.....	37
Box 6.	Poland: The ‘Greenways’ programme.....	38
Box 7.	Portugal: Network of co-operation in tourism R&D .....	39
Box 8.	Slovak Republic: Supporting innovation with access to finance.....	40
Box 9.	Switzerland: Federal Act on the Promotion of Innovation and Co-operation in Tourism.....	41
Box 10.	Egypt: The Green Sharm Initiative.....	42
Box 11.	The Futouris e.V. sustainability initiative .....	44
Box 12.	Examples of partnership innovation .....	54
Box 13.	Green innovation profile: Boutique Hotel Stadthalle, Austria .....	55
Box 14.	Green innovation profile: COEX, Republic of Korea .....	56
Box 15.	Key business considerations for green business model innovation.....	58
Box 16.	Australia: Barriers to innovation in tourism .....	66
Box 17.	Hellenic Green Tourism programme .....	67
Box 18.	Slovenia: Recognising and Financing Innovative Tourism Projects .....	72

## EXECUTIVE SUMMARY

### *Tourism and the green economy*

The OECD's *Towards Green Growth* states that green growth is about fostering economic growth and development while ensuring that natural assets continue to provide the resources and environmental services on which our well-being relies. To do this it is necessary to foster investment and innovation, which will underpin sustained growth and give rise to new economic opportunities.

A green economy can be thought of as one that is low carbon, resource efficient and socially inclusive. In a green economy, growth in income and employment should be driven by investments that reduce carbon emissions and pollution, enhance energy and resource efficiency, and prevent the loss of biodiversity and ecosystem services.

Tourism is one of the most promising drivers of growth for the world economy and key to driving the defining trends of the transition to a green economy. Due to tourism's cross-cutting nature and close connections to numerous sectors at destination and international levels, even small improvements toward greater sustainability will have important impacts in the shift towards more sustainable, cleaner and low-carbon economic growth.

Like many other sectors, tourism faces a range of significant sustainability-related challenges. However, with growing awareness of the necessity and value of conserving unique natural, social and cultural assets, there is increasing motivation from both the private and public sectors to invest in improving tourism's sustainability.

Innovation and in particular green innovation have a fundamental role to play in improving sustainability and maximising the potential environmental, social and cultural benefits of tourism in the transition to a green economy. By adopting and encouraging the development of innovative technologies and processes, businesses can make efficiency improvements in energy, water and waste systems, while protecting biodiversity and creating the conditions for growth and sustainable development in local communities.

### *The policy environment for green innovation in tourism*

Innovation is defined as the introduction of a new or significantly improved product, process, or method, innovation encompasses a wide range of activities that can be new to a firm, to the market, or the world. As such, it is as much about successfully adopting a process or business method developed by other firms or institutions, as being the first to introduce a new product to the market.

Green innovation is a somewhat elusive concept, but can be identified by its favourable impact on the environment. It can be defined as innovation that results in a reduction of environmental impact, and/or optimises the use of resources throughout the lifecycle of related activities.

Government action is essential to shape the green innovation 'environment'. However, as for innovation in general, evidence suggests that there is no single recipe to drive green innovation. Rather,

there is a diverse range of possible approaches depending on the context; however, effective governance is at the core of the process.

The OECD Innovation Strategy identifies five principles that can help governments to use innovation (including green innovation) as a tool to improve economic performance, address societal challenges and enhance welfare: *i*) empowering people to innovate; *ii*) unleashing innovations; *iii*) creating and applying knowledge; *iv*) applying innovation to address global and social challenges; and *v*) improving the governance and measurement of policies for innovation.

In general, the innovation process has not been a matter of routine for tourism businesses, and with fundamental innovations generally not expected, innovations often become a matter of small or incremental steps. However, as a result of increased competition in the global market place, ‘process’ innovations (such as the introduction of environmental management systems and new business models, and changes to marketing and organisational methods), are becoming increasingly important, enabling tourism operators, and particularly those in developed economies, to bring costs down, leading to quality improvements, lower prices and increased profitability.

Given the increasingly central role of innovation in delivering a wide range of environmental, economic and social objectives, including increased sustainability, a more strategic, whole-of-government approach with horizontal and vertical policy co-ordination, and closer integration of multiple policies, *e.g.* in transport, energy, environment, is needed.

The importance of a co-ordinated approach to fostering green innovation in tourism is supported by the findings of the OECD country survey on green innovation in tourism. Over half of the responding countries identified initiatives supporting green innovation, which were relevant and accessible to tourism businesses, located in at least three government departments. This result clearly demonstrates the need for a co-ordinated whole-of-government approach, in order to maximise synergies and reduce duplication in the support available to tourism businesses.

Examples of the various approaches taken by countries to encourage ‘improved environmental performance and/or sustainability’, which also encourage innovative practices in the tourism sector, include:

- Development of strategies and setting of targets for improved environmental performance;
- Initiatives to enhance the capacity of tourism businesses and organisations to improve environmental performance and sustainability through innovation; and
- Establishment of advisory groups to support green growth;

#### *Green business model innovation in tourism*

The goal of increased environmental sustainability creates both challenges and new business opportunities for companies in virtually all sectors. However, the tourism industry often faces such opportunities and challenges in a more immediate way, due to its often direct dependence on the natural environment as an attraction. One such opportunity is the adoption of a more strategic approach to business model, and in particular green business model innovation.

In general, business models denote a focus on the system level or a holistic approach towards explaining how firms do business. They seek to explain both value creation and value capture and how firms differentiate their business from the competition.



Business models have the potential to generate indirect positive environmental benefits. These are associated with resource and energy efficiency and with the use of new products or technologies with improved environmental performance. A wider application of green innovation business models can also lead to societal impacts including job creation or improved quality of life.

The OECD/Nordic Innovation project<sup>1</sup> on green business model innovation (BMI) in tourism builds upon the framework of the Innovation Radar tool<sup>2</sup>, with a Green Innovation Radar<sup>3</sup> (including survey and workshops), applied to a total of 28 participating tourism companies from Austria, Denmark, Finland, Iceland, Mexico, Norway, Portugal, Russia, Republic of Korea, and Sweden.

The project aims to guide tourism companies in the practice of how to work with ‘green business model innovation’ and implement the changes necessary for the transition to more strategic green innovation. An analysis of results indicates that only 15% of participating companies demonstrate a strategic or focussed approach to business model innovation (as opposed to a figure of approximately 20% in a study including businesses from a variety of sectors), with only 7% demonstrating a ‘green’ innovation strategy.

Results also indicate that once companies embark on the journey of green business model innovation, opportunities for ‘partnership’ innovation increases substantially. Feedback from many of the companies participating in the project, indicates that in general, customers are not yet ready to pay extra for the delivery of environmentally sustainable products and services. However, many multinational companies increasingly ask for evidence of a green policy in connection with booking exhibitions and larger events. This suggests that at present, companies may find it easier to gain value capture from sustainable business offerings within business-to-business markets, and that this market will move more quickly towards implementing green business model innovation than business-to-consumer markets.

#### *Drivers and barriers to green innovation in tourism*

Many of the enabling conditions for innovation are the same whether concerned with green innovation or innovation more generally. The fundamental drivers and barriers are similar and green innovation thrives in a sound environment for overall innovation.

Examples of non sector-specific drivers include, a sound environment for innovation in general, the environmental policy framework, and the presence of clear and stable market signals or instruments addressing the externalities associated with environmental challenges. Such signals enhance the incentives for firms to adopt and develop green innovations and indicate a government commitment towards greener growth.

Some of the main drivers supporting sustainable tourism investment decisions are consumer demand changes; business actions to reduce operational costs and increase competitiveness; coherent policies and regulations for environmental protection; technology improvements; private efforts for environmental and social responsibility and natural resource conservation. However, a cross-cutting barrier is the lack of understanding of the value created from the greening of tourism.

<sup>1</sup> The Nordic Innovation (2012) report of findings, ‘Green business model innovation in the tourism and experience economy’ (available at <http://www.nordicinnovation.org/Publications>), forms the basis for Chapter 3 on Green Business Model Innovation in Tourism.

<sup>2</sup> Mohanbir Sawhney, Robert C. Wolcott and Inigo Arroniz - Jiyao Chen & Mohanbir Sawhney, [sloanreview.mit.edu](http://sloanreview.mit.edu) & [hbr.org](http://hbr.org) & Kellogg School of Management, April 1, 2006 & 2010.

<sup>3</sup> The green survey and profile of the Innovation Radar were developed by Jiyao Chen (Oregon State University) for this OECD-Nordic Green Innovation project in 2011 and as a pilot.

Of the drivers identified by countries in response to the survey on green innovation in tourism, an increased focus on environmental issues and consumer demand were considered particularly important, while information gaps and potential or perceived investment cost for businesses were the barriers mentioned most often.

From an industry perspective, results from the BMI project, were generally in line with country survey responses; although the priorities, perhaps not surprisingly, focussed more on the likely financial implications associated with implementing green innovation initiatives. For example, the driver mentioned most often by company managers was cost saving through process innovation; followed by necessity, as a result of scarce natural resources; and a general motivation and determination to go ‘green’ by the company founders. Similarly, the barriers most often mentioned were funding/money to implement changes; customer reluctance to pay extra for green services; and little or inadequate support mechanisms from government.

From the results of the country survey, there appears to be a slight incoherence between government perceptions of consumer demand as a driver for green innovation in tourism, and the industry perception (as expressed by companies participating in the BMI study), that customers are generally reluctant to pay a premium for more environmentally friendly products or services. This combined with other identified barriers relating to business/consumer information gaps and perceived investment costs for SMEs, indicate a potentially important role for governments to play in better educating the public and tourism businesses as to the environmental and financial benefits associated with adopting and supporting green innovation.

## Policy orientations

The policy mix necessary to support and encourage innovation in general, or more specifically green innovation, depends on many factors, including the fact that innovation performance and characteristics of firms’ differ within industries and across countries. Consequently, a “one size fits all” approach does not apply. A more strategic approach to fostering innovation would help to achieve the core objectives of public policy.

Based on previous work undertaken by the OECD and other international organisations, the results of the country survey on green innovation in tourism, and the findings from the BMI project, the following have been identified as potential areas of policy focus to improve diffusion, strengthen markets and change consumer attitudes to green innovation in the tourism sector:

- A more strategic approach to fostering innovation and a cleaner more sustainable environment will require horizontal and vertical policy co-ordination, and closer integration of multiple policies, *e.g.* transport, energy, and environment; which is particular important to tourism, due to its cross-cutting nature.
- Improving the overall business environment for innovation is essential to green innovation and requires implementation of a broad-based innovation strategy.
- Stable and long-term market signals, based on the pricing of the environmental externalities, are core for a strong and comprehensive strategy for green growth and for green innovation.
- Well-designed demand-side policies, such as public procurement, standards and regulation can help to support the development of markets for green innovation, in particular in areas where price signals are ineffective.

- Policies to foster green innovation will benefit from continued evaluation and monitoring, to improve their effectiveness and efficiency over time, with any changes resulting from evaluation needing to be balanced against the benefits of policy stability over time.
- Results of the country survey indicate that governments could play an important role in better educating the public and tourism businesses concerning the environmental and financial benefits associated with adopting and supporting green innovation in tourism services.
- Similarly, several barriers to green innovation identified by countries and participating companies, including information gaps, consumer reluctance, industry capacity, investment cost, budget constraints, and access to finance, align with the identified role of education and incentives as factors for success, thus highlighting potential areas of focus for government policy responses.
- The BMI project findings indicate that once companies begin to actively implement green innovation initiatives, opportunities to develop partnership innovation increase substantially. In response, governments could develop measures to strengthen business competencies necessary to develop effective partnerships and in doing so help businesses, in the short term, to more effectively monetise green investments and strengthen the green innovation ecosystem at all levels.



## CHAPTER 1 – TOURISM AND THE GREEN ECONOMY

### Introduction

The transition towards a greener economy will be a long and challenging process for tourism as for many other sectors. Tourism, as a transversal sector interacting with many other industries and services, can contribute significantly to the shift towards more sustainable, cleaner and low-carbon economic growth. Entrepreneurs and policy-makers are increasingly looking at innovation as key to improving environmental performance and achieving sustainable targets. Innovation is also essential to improve existing products and to develop more sustainable tourism products and experiences.

The OECD's *Towards Green Growth* (2011a) recognises that innovation is at the core of transforming an economy, and that innovation contributes to the establishment of new markets and the creation of new jobs. Innovation can occur in any sector of the economy, and differs widely across sectors. Today it is as much about finding new ways of doing things or using novel technologies, as breakthroughs resulting from research and development will play an increasingly important role in the shift to a greener economy.

The focus of this particular activity will be on “green” innovation in tourism services. For the purposes of this project, green innovation or eco-innovation will be defined as innovation that results in a reduction of environmental impact, intended or otherwise. The recent OECD publication, *Eco-Innovation in Industry: Enabling Green Growth* (2009), suggests that eco-innovation has the ability to seek more radical improvements than traditional forms of innovation, is multidimensional in nature (including targets, mechanisms and impacts), and that improved benchmarking and better indicators would facilitate greater understanding and make improvements achieved through eco-innovation more evident to both industry and customers.

Like innovation itself, tourism products and services can be technological or non-technological in nature, the intangible components (*i.e.* processes, methods, practices) will be considered as part of this review. The objectives of which are to:

- analyse the role of green innovation in the transition of tourism enterprises to a green economy (*e.g.* hotels, restaurants, travel agencies, tour operators);
- better understand how green innovation in tourism is supported at the national and local levels.
- identify ways to accelerate the diffusion of green innovation in the sector, including effective communication; and
- develop a range of conclusions and policy orientations to enable policy makers and industry to derive maximum benefit from the findings and recommendations of the study.

This report is intended to contribute to the OECD *Green Growth Strategy* (OECD 2011) and support the implementation of the OECD *Innovation Strategy* (OECD 2010b). It also seeks to build upon the OECD publication on *Innovation and Growth in Tourism* (OECD, 2006).

In addition, other primary sources utilised throughout the report include the OECD's *Better Policies to Support Eco-innovation* (OECD, 2011b); *Fostering Innovation for Green Growth* (OECD 2011c); and UNEP's *Towards a Green Economy* (UNEP 2011a) chapter on "Tourism – Investing in energy and resource efficiency" (UNEP and UNWTO, 2011); drawing upon the substantial and significant work already completed, where relevant to tourism.

More specifically, chapter one examines the growing focus of the international community on the need for green growth and a greener economy, followed by tourism's place in a green economy, including challenges and opportunities for tourism and the case for investing in the greening of tourism. It concludes by identifying the key issues for consideration by countries in efforts to promote a greener and more sustainable tourism sector, and briefly outlines the structure of the report.

## **The need for Green Growth**

The OECD's recently published *Towards Green Growth* argues that the world currently faces the twin challenges of needing to expand economic opportunities for a growing global population, whilst addressing environmental pressures that, if left unaddressed, could undermine our ability to seize these opportunities. It suggests that green growth is about fostering economic growth and development while ensuring that natural assets continue to provide the resources and environmental services on which our well-being relies. To do this it must foster investment and innovation which will underpin sustained growth and give rise to new economic opportunities.

### ***The importance of green growth strategies***

The need to reframe growth is becoming increasingly important due to imbalances being created by the impacts of economic activity on environmental systems.

Greening the growth path of an economy depends on policy and institutional settings, level of development, resource endowments and particular environmental pressure points. There is no "one-size-fits-all" prescription for implementing a green growth strategy. There are, however, common considerations that need to be applied in all settings. And in every case, good economic policy lies at the heart of any strategy for green growth and policy action requires looking across a very wide range of policies, not just explicitly "green", or environmental, policies.

The central feature of a green growth framework is recognition of natural capital as a factor of production and its role in enhancing well-being. Green growth should be conceived as a strategic complement to existing priorities and areas for environmental and economic policy reform, and strategies should target areas where there is clear beneficial overlap between environmental and economic policy. They should focus on finding cost-effective ways of reducing environmental pressures, to begin the transition towards new patterns of growth that will avoid crossing critical environmental thresholds.

Perceived trade-offs between economic growth and environmental protection are reduced when new measures that better capture well-being are used alongside GDP to measure progress, including the quality and composition of growth, and how this affects people's wealth and welfare. In this and many other respects, green growth is an essential component of sustainable development.

Narrower in scope than sustainable development, green growth entails an operational policy agenda that can help achieve concrete, measurable progress at the interface between the economy and the environment. Green growth strategies need to pay specific attention to many of the social issues and equity concerns that can arise as a direct result of greening the economy, and should be implemented in parallel with initiatives focusing on the broader social pillar of sustainable development.

A key element of any green growth strategy is to set incentives that will boost innovation along a growth trajectory which diverts from inefficient patterns of the past. In this context, sound economic policy, robust competition and private sector innovation remain central drivers of growth and necessary conditions for unleashing new economic opportunities.

In summary, strategies for greening growth focus on a broader concept of progress than just GDP growth and aim to provide clear and stable policy signals to investors and consumers so as to:

- Achieve economic gains from eliminating sources of inefficiency in the use of natural capital;
- Encourage innovation which can deliver high rates of balanced growth;
- Foster new economic opportunities from the emergence of new green markets and activities; and
- Ensure that eliminating inefficiencies, fostering innovation and seizing new growth opportunities avoid the risk of bottlenecks and systemic crises.

### ***Policy frameworks for green growth***

The pursuit of green growth will require a mix of measures that can collectively bolster growth, while guiding economic activity into modes of production and consumption with lower environmental impact. The key to this will be finding ways of integrating efficient natural resource use and other environmental considerations into every day economic decisions.

The experience of OECD and many emerging economies suggests that while there is no single recipe for success, there are some important ingredients. These include improving the quality of human capital through education and labour market policy, capital deepening assisted by sound macroeconomic policy, and more effective institutions that allow competition, innovation and entrepreneurship to flourish while protecting the social fabric and the rule of law.

Realising the value of the natural resource base in a way that is conducive to growth will entail modifying the payoffs to certain economic activities, adopting measures to overcome obstacles to green growth and implementing policies that directly improve environmental and economic outcomes from activity in natural resource sectors. Across the range of issues to be addressed, policy initiatives should be designed in terms of: cost-effectiveness; adoption and compliance incentives; and ability to cope with uncertainty and provide a clear and credible signal to investors. Other important criteria include effectiveness in stimulating innovation and the diffusion of green technologies, and the extent to which instruments can be designed and implemented in a way that facilitates international co-ordination.

For most countries, instruments that directly impact price signals are a necessary, though not always sufficient, condition for greening growth. The main strengths of market-based instruments are that, if well designed, they modify price signals so that they internalise externalities (*e.g.* pollution) and that all factors of production, including natural capital, are properly valued. They can thus set the right incentives for broadly based actions that reduce environmental damage with the least resource cost, and also promote and guide “green” innovation.

Regulatory policies affect the direction of growth so they are crucial elements of the green growth policy framework. As with the reform of subsidies, regulatory initiatives present an opportunity to both incentivise green growth and to improve existing arrangements. They are also needed to complement and support market-based instruments.

Particular areas where regulatory settings enable or impede green growth include: *i)* specific regulatory initiatives to encourage improved resource use, such as energy efficiency, and to reduce pollutants; *ii)* product market competition; *iii)* rules governing trade and foreign direct investment (FDI); *iv)* regulations enabling or impeding private sector voluntary initiatives; and *v)* procedural oversight to promote policy coherence and regulatory certainty.

Pricing the use of environmental resources has proven to be a powerful tool for influencing consumer and household decisions. However, behavioural studies indicate that consumers often focus on short-term costs, without fully considering longer-term factors. This suggests that efforts to highlight the cost implications of consumer choices over the product lifecycle may be needed to influence choices for consumer durables. Similarly, the construction and operation of hotels, cars, airports, and other tourism related infrastructure all consume considerable amounts of energy during their lifecycles. As such, similar efforts may also be required to influence consumer choice in the traditionally service orientated tourism sector.

While economic instruments are powerful tools, access to comprehensible and trustworthy information is central to strengthening markets for environmentally friendly products, particularly for goods and services where environmental attributes are less “visible”. The manner in which information is presented and the way that choices are framed can influence consumer decisions.

Third party certification can also improve consumer confidence in the environmental attributes of products. Governments can further address information issues by providing consumers with comparative information themselves, or by encouraging firms to do so, mandatorily or on a voluntary basis. This can help consumers reduce their search costs by making it easier for them to compare products.

Innovation has an important role to play and needs to be marshalled to help provide ways around old patterns of production and consumption and generate new sources of growth that better reflect the full value of economic activity to society. While better pricing of resource use and pollution, and smarter regulations, can help provide incentives for these shifts, more will be needed to overcome inertia.

Innovation and the resulting creative destruction mean new ideas, new entrepreneurs and new business models. It contributes to the establishment of new markets, leads to the creation of new jobs and is a key ingredient of any effort to improve people’s quality of life.

Human capital has particular significance for innovation because skilled people create and use knowledge. It spurs innovation through channels such as the generation of new knowledge, the adoption and adaption of existing technologies and ideas, and the ability to adapt to change and to learn new things.

Without innovation, it will be very difficult and very costly to address major environmental issues and, as such, innovation plays a crucial role in enabling green and growth to go hand. The beauty of innovation is that, in general, the gains of one country do not come at the cost of another, making the diffusion of new ideas or technologies generally as important as the inventions behind them.

Shifting to a greener growth trajectory requires special attention to network infrastructure such as energy, transport, water and communications networks. There is considerable potential for infrastructure investment to contribute to economic growth and prosperity because it enables trade specialisation, competition, access to new resources, the diffusion of technology and new organisational practices. Well planned infrastructure development can reduce water and air pollution and curb unsustainable land use change, further enhancing development.

Institutional and governance capacity to implement wide-ranging policy reform is an essential condition for greening growth. Governments need to be able to integrate green growth objectives into



broader economic policymaking and development planning. Developing such capacity is a key structural issue and applies as much to many OECD countries as it does to developing countries, and is not restricted to formal national level planning processes. It concerns not only policy priorities, but also the choice and design of programmes, public investments and regulation of economic activity.

Capacity development for green growth policies should take a whole of government approach. While the policy motivation for greener growth may lie in environmental concerns, green growth policies are not exclusively environmental policies. They should be core economic policies that have engaged central planning, finance and sectoral ministries as well as environment agencies in their formulation. The role and capacity of non-governmental actors in the private sector and civil society will also be important.

### ***Promoting the transition towards green growth***

Reaching an agreement on the policies on which a green growth strategy should be based is only part of the picture. There remains a broader challenge of governance and political economy. In other words, it is necessary to understand how decisions are made, and in whose interest they are made – and how reform is promoted or obstructed and why.

In designing and implementing green growth strategies governments need to find satisfactory compromises not only among conflicting objectives of different strands of society, but also within government itself. Green growth strategies cannot be implemented through a single type of policy, but getting the mix right requires a rare degree of co-ordination among ministries who may not be used to working together.

Promoting a successful transition towards green growth means: *i*) developing strategies for reform, *ii*) facilitating adjustment in the labour market; *iii*) accounting for concerns about distributional impacts on firms and households, especially those on low incomes, and *iv*) promoting international co-operation.

Greening growth will see new green sectors and activities develop, in some cases displacing other activities. Labour market, skills, and education policies can help in smoothing the transition by focussing on:

- Minimising skill bottlenecks and facilitating the acquisition of new skills required of workers in both new jobs and existing jobs.
- Ensuring that workers and firms are able to seize new opportunities arising from changes accompanying the greening of growth.
- Adapting other green growth policy, such as pollution pricing, in ways that can promote labour demand.

Global challenges require co-operation on a global scale in order to deliver public goods (climate change mitigation, biodiversity) or protect the global commons (the environment, fisheries). International co-operation is necessary because: *i*) no single country can successfully address the problems alone; *ii*) the costs and benefits of action may accrue to different countries, and individual countries may not be willing to bear the costs of addressing global challenges if they cannot appropriate the benefits; and *iii*) uncoordinated efforts of many countries to address global challenges are likely to be more costly and less successful than co-ordinated, co-operative efforts.

### ***Delivering on green growth***

Green growth encompasses a vast number of policy measures, *e.g.* fiscal reform; regulatory policy reform; changes to education, research and innovation policies; jobs strategies; climate change mitigation instruments; energy efficiency measures; competition policy in network industries. Bringing together all these elements into a cogent framework is a challenge.

Green growth strategies should establish environmental priorities, diagnose key market constraints to delivering improvements, and match these with structural economic reform priorities. At the core of green growth are constraints or distortions in the economy which inhibit returns to “green” investment and innovation. Green growth strategies should focus on the most binding constraints, identifying major environmental priorities, and investigating any overlap between structural economic reform priorities and major constraints to green growth.

Conceptually, three kinds of constraint to green growth might be addressed: government failures; market failures; and market imperfections. The resolution of government failures should be the top priority as these failures work against the cost effectiveness of other reforms and are more cost-effective to resolve than other kinds of failures. Market failures should also be accorded high priority as there is a clear rationale for policy action and, in general, clear cost-effective policy options for dealing with them.

### ***Measuring (or monitoring) progress towards green growth***

Integrating economic and environmental policies requires a matching framework, definitions and comparable data to measure progress towards green growth. Green growth involves both “greening growth” and harnessing new growth possibilities from environmental considerations. By its very nature, such a process is not easily captured by a single indicator, and a small set of measures will be needed. Also, the ambition of the indicators is pragmatic: green growth indicators are seen as markers or milestones on a path of greening growth and of seizing new economic opportunities.

Monitoring progress towards green growth requires indicators based on internationally comparable data. These need to be embedded in a conceptual framework and selected according to well-specified criteria. Ultimately, they need to be capable of sending clear messages which speak to policy makers and the public at large. *Towards Green Growth* outlines four areas chosen to capture the main features of green growth:

- Environmental and resource productivity, to capture the need for efficient use of natural capital and aspects of production.
- Economic and environmental assets, to reflect the fact that a declining asset base presents risks to growth and because sustained growth requires the asset base to be kept intact.
- Environmental quality of life, capturing the direct impacts of the environment on people’s lives, through *e.g.* access to water or the damaging effects of air pollution.
- Economic opportunities and policy responses, which can be used to help discern the effectiveness of policy in delivering green growth and where the effects are most marked.

*Towards Green Growth* presents a set of over 20 indicators, of which not all are currently measurable today. The multi-dimensional nature of green growth requires a sufficient number of indicators to do justice to the various aspects of the issue at hand, however, having too many carries the danger of losing a clear message that speaks to both policy makers and other stakeholders.

The report proposes that a small set of “headline” indicators should be selected, that are able to track central elements of the green growth concept and that are representative of a broader set of green growth issues. It also acknowledges that this process will require broad consultation and discussion because, inevitably, opinions on the most appropriate indicators will vary among stakeholders.

## **Tourism in a Green Economy**

UNEP defines a green economy as one that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities. In its simplest expression, a green economy can be thought of as one which is low carbon, resource efficient and socially inclusive. In a green economy, growth in income and employment should be driven by public and private investments that reduce carbon emissions and pollution, enhance energy and resource efficiency, and prevent the loss of biodiversity and ecosystem services. These investments need to be catalysed and supported by targeted public expenditure, policy reforms and regulation changes.

### ***The transition to a green economy***

The concept of a “green economy” does not replace sustainable development, but there is now a growing recognition that achieving sustainability rests almost entirely on getting the economy right. To make the transition to a green economy, specific enabling conditions will be required. These enabling conditions consist of the backdrop of national regulations, policies, subsidies and incentives, and international market and legal infrastructure and trade and aid protocols.

At a national level, examples of such enabling conditions are: changes to fiscal policy, reform and reduction of environmentally harmful subsidies; employing new market-based instruments; targeting public investments to “green” key sectors; greening public procurement; and improving environmental rules and regulations as well as their enforcement.

The transition to a green economy will vary considerably between nations, as it depends on the specifics of each country’s natural and human capital and on its relative level of development. To measure progress in this transition, will require the identification and use of appropriate indicators at both a macroeconomic level and a sectoral level.

UNEP’s *Towards a Green Economy* report identifies tourism as one of ten economic sectors that are key to driving the defining trends of the transition to a green economy, including increasing human well-being and social equity, and reducing environmental risks and ecological scarcities.

### ***Challenges and opportunities for tourism***

Arguably more than any other sector, tourism has the ability to impact (both positively and negatively) on the very resources upon which it depends. Tourism in a green economy refers to tourism activities that can be maintained, or sustained, indefinitely in their social, economic, cultural, and environmental contexts, or in other words, sustainable tourism.

Sustainable tourism describes policies, practices and programmes that take into account not only the expectations of tourists regarding responsible natural-resource management (demand), but also the needs of communities that support or are affected by tourism projects and the environment (supply). Making tourism businesses more sustainable not only benefits local communities, it also raises awareness and support for the sustainable use of natural resources.

The tourism industry faces a multitude of significant sustainability-related challenges. Challenges that need to be resolved through the greening of the industry include *i)* energy and GHG emissions; *ii)* water

consumption; *iii*) waste management; *iv*) loss of biological diversity; and *v*) effective management of cultural heritage.

Conversely, there are a range of trends and developments that provide particularly promising opportunities to green tourism activities. For example, tourism is one of the most promising drivers of growth for the world economy. In fact, the size and reach of the sector makes it critically important from a global resource perspective, with even small changes toward greening having important impacts. Furthermore, tourism's close connections to numerous sectors at destination and international levels means that changes in practices can stimulate changes in many different public and private actors. For example, as one of the most global of economic activities, decisions taken by tourism enterprises to green their activities can have a significant impact on supply and distribution chains (at the local, regional or international level), when suppliers and distributors are encouraged, or required to adopt similar sustainable practices.

In addition, with the spread of tourism to new destinations, primarily in developing countries, there is significant potential to support development goals, while new environmental and cultural attributes can make an important contribution to more sustainable tourism destinations.

Consumer patterns are changing, with tourist choices increasingly influenced by sustainability considerations, such as growing demand for locally produced food, products and services, which reduce transport distances and benefit local and regional economies. Such changes can be evidenced by the growing popularity of, for example, the 'slow food' movement which strives to preserve traditional and regional cuisine, and regional/local meals which source produce within a defined radius. There is also evidence to suggest that tourists actively seeking environmentally and culturally differentiated destinations are willing to pay more for this experience.

Making tourism more sustainable can create stronger linkages with the local economy, increasing local development potential and reducing poverty. The move toward more sustainable tourism has been shown in a number of destinations to enhance local development potential through mechanisms including: *i*) its ability to harness biodiversity, landscape and cultural heritage in developing countries; *ii*) the relatively labour-intensive nature of the tourism sector, with activities particularly suited for women and disadvantaged groups; *iii*) enhanced spending by tourists can benefit a wide range of supporting sectors; *iv*) tourism improves the basic common infrastructure facilities required for development of other sectors and quality of life; and *v*) tourism employs more women and young people than most other sectors.

Similarly, the Global Sustainable Tourism Council (GSTC), have developed a set of baseline criteria for tourism businesses to meet in order to protect and sustain the world's natural and cultural resources, while ensuring that tourism meets its potential as a tool for poverty alleviation. The criteria are organised around four major themes: *i*) effective sustainability planning; *ii*) maximising social and economic benefits for the local community; *iii*) enhancing cultural heritage; and *iv*) reducing negative impacts to the environment. While initially intended for use by the accommodation and tour operation sectors, the GSTC suggest that they are applicable to the entire tourism industry (GSTC, 2011).

### ***The case for investing in the greening of tourism***

Tourism in general drives significant investment. However, even small increases in investments designed to achieve a greener sector, result in very significant increases in investment flows. Examples of positive outcomes linked to investing in the move towards more sustainable tourism include, job creation, where additional employment in energy, water, and waste services, and expanded local hiring and sourcing are expected from the greening of mainstream tourism segments.

In addition, tourism's role as an effective driver of local economic development is widely recognised. Furthermore, there is growing evidence that sustainable tourism can increase both the local contribution and multiplier effect, in line with local community involvement in the tourism value chain, through the supply of products, labour, tourism services and, increasingly, "green services".

When tourism-related income grows with a substantial reorientation in favour of the poor, poverty can be reduced. Local industry, for example, can help by engaging in and encouraging the use of local companies for the provision of transport, services and food in order to generate local income and employment multipliers and contribute to alleviate local poverty. However, as with income effects, there is increasing evidence that more sustainable tourism, particularly in rural areas, can lead to more positive poverty-reducing effects.

With growing awareness of the need and value of conserving unique natural, social and cultural assets of destinations, there is increasing motivation from both the private and public sectors to invest in making tourism more sustainable. Investment in sustainable tourism offers both environmental benefits and opportunities to generate significant returns, notably in the areas of:

- **Energy** – In hotels and other accommodation there is considerable scope for investment in energy-efficient features and services. These include improvements to refrigeration, television and video systems, air conditioning and heating, and laundry. Such investments are often driven by rising energy costs; likely carbon surcharges; increasing expectations of customers; technological advances with low-carbon technology; and in some cases, government incentives.
- **Water** – Internal water efficiency and management programmes, and investments in water-saving technology in rooms, facilities and attractions reduce costs. Greater efficiency and improved management allows for the increase of number of rooms/visitors in water-constrained destinations. Investments in water-saving systems, grey water reuse and rainwater collection and management systems can help reduce the volume of water consumption by approximately one quarter per guest per night (Fortuny, et al. 2008).
- **Waste** – Lower levels of waste generation improves financial return for private sector actors, while better management of that same waste creates opportunities for jobs, and enhances the attractiveness of destinations.
- **Biodiversity** – Guest expectations that tour operators should respect and protect the natural resource base from which they benefit, are increasingly driving changes in the tourist industry. Policies of mainstream tourism are likely to change towards more effective conservation of sensitive ecosystems, driven by growing market demand and large operator programmes. Conservation and restoration provides a highly profitable, low-cost investment for maintaining ecosystem services.

Cultural heritage includes living cultures, mainstream and minority, as well as historical, religious, and archaeological sites. Investment to maintain cultural authenticity, can offer opportunities for continuation, rejuvenation or enhancement of traditions and way of life, resulting in a more sustainable tourism offer. In addition, most commentators believe that investment in cultural heritage is among the most significant, and usually profitable, investments a society, or tourism sector, can make.

In modelling undertaken by UNEP to quantify the likely effects of increased green investment in tourism, results indicated that despite a rise in the flow of tourists, green investment would lead to significant resource conservation through considerable efficiency improvements. Associated savings would result in potential avoided costs that could be reinvested in socially and environmentally responsible

local activities. In particular, spending by visitors from wealthier regions to developing countries would help to create much-needed employment and opportunities for development, reducing economic disparities and poverty.

Innovation and in particular green innovation have a fundamental role to play in maximising the potential environmental, social and cultural benefits of tourism in the transition to a green economy. By adopting and encouraging the development of innovative technologies and processes, businesses and government institutions can make efficiency improvements in energy, water and waste systems, and minimise emissions of GHG, while protecting biodiversity and creating the conditions for growth and sustainable development in local communities.

### **Summary of key issues and report outline**

The need to reframe growth is becoming increasingly important due to imbalances created by the unsustainable impacts of economic activity on environmental systems.

Green growth is about fostering economic growth and development while ensuring that natural assets continue to provide the resources and environmental services on which our well-being relies and is an essential component of sustainable development.

Promoting a successful transition towards green growth means: *i)* developing strategies for reform; *ii)* facilitating adjustment in the labour market; *iii)* accounting for concerns about distributional impacts on firms and households, especially those on low incomes; and *iv)* promoting international co-operation.

A green economy can be thought of as one which is low carbon, resource efficient and socially inclusive. In a green economy, growth in income and employment should be driven by investments that reduce carbon emissions and pollution, enhance energy and resource efficiency, and prevent the loss of biodiversity and ecosystem services.

Tourism is one of the most promising drivers of growth for the world economy and key to driving the defining trends of the transition to a green economy. With tourism's close connections to numerous sectors at destination and international levels, even small improvements toward greater sustainability will have important impacts.

Like many other sectors, tourism faces a range of significant sustainability-related challenges. However, with growing awareness of the need and value of conserving unique natural, social and cultural assets, there is increasing motivation from both the private and public sectors to invest in making tourism more sustainable. Investment in sustainable tourism offers both environmental benefits and opportunities to generate significant returns, notably in the areas of energy, water, waste, and biodiversity.

The remainder of this report will contribute to the current policy debate on how to most effectively unleash the potential of innovation in a green economy, with a particular focus on the tourism sector. Chapter 2 will examine policy issues for innovation and the role of green innovation in tourism services. In addition, it will analyse the current policy environment for green innovation in tourism in OECD countries (utilising the results from a country survey), identifying examples of good practice in supporting/facilitating green innovation in tourism.

Chapter 3 includes the findings from the joint OECD/Nordic Innovation project on green business model innovation in tourism, providing a unique industry perspective on green innovation issues, while Chapter 4 seeks to identify the major drivers and barriers to green innovation in tourism in OECD member countries.

## CHAPTER 2 – THE POLICY ENVIRONMENT FOR GREEN INNOVATION IN TOURISM

### Introduction

The notion of what innovation, and in particular green innovation, involves and the role that policies can play to help create an environment to encourage innovation has changed considerably over the past decade.

Defined as the introduction of a new or significantly improved product (good or service), process, or method (marketing or organisational), innovation can be new to a firm, new to the market or new to the world (OECD and Eurostat, 2005). It encompasses a wide range of activities, including R&D, business methods, marketing and design, and is influenced by a wide range of factors, some of which can be affected by policy (OECD, 2010b).

Green or eco-innovation is an elusive concept, and difficult to define. It can, however, be identified by its favourable impact on the environment, and has been defined by the European Commission as innovation that results in a reduction of environmental impact, and/or optimises the use of resources throughout the lifecycle of related activities (OECD, 2011b, p.29).

The policy mix necessary to support and encourage innovation in general, or more specifically green innovation, depends on many factors, including the fact that innovation performance and characteristics of firms' differ within industries and across countries. Consequently, a "one size fits all" approach does not apply (OECD, 2010b, p. 18). A more strategic approach to fostering innovation, with greater horizontal and vertical co-ordination of policies, would help to achieve the core objectives of public policy (OECD, 2010b, p. 26).

In order to obtain a more comprehensive understanding of how green innovation in tourism is supported in different countries, a country survey was distributed to OECD member and selected non-member countries. In addition to seeking information on government policies and programmes, industry initiatives and examples of good practice, the survey sought views on the key drivers, barriers, and success factors for the successful diffusion of green innovation in the sector.

Twenty-seven country responses were received by the Secretariat, with findings presented in Chapters 2 and 4. Chapter 2 examines the policy context for green innovation in tourism and current support measures in OECD member and selected non-member countries (Chapter 4 examines drivers, barriers and success factors). Based on the results of a country survey, this includes an examination of i) current policies and programmes implemented by governments at the national and sub-national level; ii) whether policies and programmes are designed specifically for tourism (and are managed by NTAs), or are more generic in nature and managed or co-ordinated by other government departments; and iii) industry led initiatives.

### Policy issues for green innovation

In today's constrained budgetary environment, it is generally accepted that governments need to find ways to do more with less. Public investment in innovation-related spending is a priority in many OECD

member countries and increased in some as part of recent stimulus packages relating to the global financial crisis. Innovation is recognised as a key driver of growth performance, and its contribution to economic growth, employment and improving living standards is likely to increase.

The OECD Innovation Strategy examined a wide range of factors determining innovation and found that a comprehensive approach to fostering innovation is needed, that considers the full spectrum of policies to create, diffuse and apply knowledge, covering both supply and demand-side policies.

A more strategic approach to fostering innovation, such as this, would help to achieve the core objectives of public policy. This would require greater horizontal as well as vertical co-ordination of policies. With appropriate policies, innovation will result in win-win outcomes and greater well-being at both national and global levels.

### ***Innovation Trends***

As outlined above, the notion of what role policies can play to encourage innovation has changed considerably over the past decade. It is also increasingly recognised that innovation is a much broader concept than R&D, encompassing a wide range of activities, including organisational change, training, testing, marketing and design. These activities can strengthen capabilities for developing innovations or the ability to successfully adopt innovations developed by other firms or institutions.

Innovation is a continuous, pervasive activity that takes place throughout the economy. Firms constantly change products and processes, collect new knowledge, and develop new ways of working. Specific types of innovation are not necessarily confined to particular sectors of the economy and at the same time, innovation is highly skewed, with a small proportion of firms accounting for the majority of inputs and outputs.

In recent years there has been an increased interest in non-technological (marketing, organisational) forms of innovation and their contribution to productivity performance, especially in countries whose industrial specialisation and structure limit the scope for technology-based (product, process) R&D activities and innovation. Non-technological innovation is also of particular relevance to service oriented sectors, such as tourism. For instance, the on-demand bicycle service in Paris, so popular with both residents and tourists, relies little on technology and heavily on a sophisticated business model and appropriate organisation.

Similarly, there has been growing recognition that innovative products, services, processes or business models can benefit the environment by reducing pressure on natural resources and/or the emission of pollutants, while continuing to foster economic development. The environmental goods and services industry is growing fast in OECD and non-member countries, and can enhance the competitiveness of other industries.

Green innovation can be associated with various concepts, such as eco-efficiency (producing more goods and services with less energy and fewer natural resources), cleaner production (continuously reducing pollution and waste at the source) and eco-design (*i.e.* the re-design of a product or process to reduce its environmental impacts throughout its life-cycle).

Most OECD countries consider green innovation to be an important element of the response to contemporary challenges, including climate change and energy security. In addition, many countries and firms see green innovation as a potential source of competitive advantage in the fast-growing environmental goods and services industry. As such, green innovation is viewed as a major driver of green growth. The OECD's *Fostering Innovation for Green Growth*, notes that innovation with the capacity to help achieve green growth can occur in different degrees (Box 1).



### Box 1. Degrees of Innovation for Green Growth

*Incremental innovation* – is the dominant form of innovation in enterprises and aims to modify and improve existing technologies or processes to raise efficiency of resource and energy use without fundamentally changing the underlying core technologies.

*Disruptive innovation* – changes how things are done or specific technological functions are fulfilled, without necessarily changing the underlying technological regime itself. Examples include the move from manual to electric typewriters and to word processors, or the change from incandescent to fluorescent lighting.

*Radical (or systemic) innovation* – involves a full-scale shift in the technological regime of an economy, and can lead to fundamental changes in the economy's enabling technologies. This type of innovation is often complex and is more likely to involve non-technological change and diverse actors. For example, the recent revolution in information and communications technologies and the associated systemic, organisational and institutional changes.

Source : Smith (2009)

### *Rationale for government intervention*

Business is the driver of innovation; however, government action is essential to shape the green innovation 'environment'. Several well-known market failures provide the rationale for policy actions to foster green innovation:

- The first are the negative externalities associated with environmental challenges. If firms and households do not have to pay for the environmental damage they inflict, there will be little incentive to invest in green innovation.
- Second, there are important market failures specific to the market for innovation, notably the difficulty for firms to fully appropriate the returns from their investments, which typically results in under-investment in innovation.
- Third, the market for green innovation is affected by specific barriers, notably the prevalence of dominant designs, technologies and systems in energy and transport markets. This can create entry barriers for new technologies and competitors due to, for example, the high fixed costs of developing new infrastructures.

Without appropriate government action, market mechanisms will fail to deliver the optimal level of green innovation at the appropriate time, with investment in green innovation likely to be insufficient and potentially misdirected.

As the complexity and cost of engaging in innovation continue to rise, firms often seek to partner to share costs, find complementary expertise, gain access to different technologies and knowledge, and collaborate as part of an innovative network. Increasingly global in nature, these networks call for individuals and institutions to take a more "open" perspective on the innovation process, in which collaboration and competition coexist.

Most OECD governments recognise that the best way to benefit from global innovation networks is to strengthen domestic innovation capabilities and develop local talent in order to foster home-grown innovation while at the same time attracting foreign talent and foreign direct investment related to R&D.

Innovation, as it is understood today requires co-ordination and new institutional arrangements that extend to a “whole of government” approach. The capacity of policy makers to develop and implement policies to support innovation in this new context will also depend on expanding the evidence base, including through the creative use of existing innovation indicators and the development of additional indicators to design and evaluate policy interventions.

The OECD *Innovation Strategy* identifies five priorities that can help governments to use innovation (including green innovation) as a tool to improve economic performance, address societal challenges and enhance welfare. The priorities for government action are discussed below.

### ***Priorities for government action***

People are at the heart of the innovation process. Empowering people to innovate relies not only on broad and relevant formal education, but also on the development of wide-ranging skills that complement formal education (OECD, 2010b, pp. 55). Universities, colleges and vocational training centres, play an important role in the innovation system, by producing and attracting the human capital needed for innovation, and by helping firms to lift their overall capacity to innovate.

The role of workplaces in fostering innovation is also crucial. The introduction of new processes, adoption of best practices, or reorganising workers’ responsibilities, can lower costs, raise productivity and ensure that the talents of individuals are being effectively utilised. Similarly, the use of material and human resources and the ability to further developing workers’ skills and knowledge in the work environment contribute significantly to a firm’s innovation and productivity performance.

Consumers today have increasing opportunities to influence the design, introduction and trajectory of new products and services in both the private and the public sector. They also have the ability to directly influence innovation and encourage the development of new technologies. Consumer policy regimes and consumer education should improve the functioning of markets by helping to equip consumers to become active participants in the innovation process and enable them to make informed choices.

The foundations that support innovative activity must be sound if firms are to participate in innovation and its benefits are to spread throughout the economy and society. A policy environment based on core framework conditions – sound macro-economic policy, competition, openness to international trade and investment, tax and financial systems – is fundamental to unleashing innovation.

To reap the benefits of innovation, governments and other stakeholders are increasingly required to undertake the investments and policy reforms necessary to provide the necessary stable foundations and an environment supportive of innovation. Access to finance is a key constraint as business-led innovation is inherently risky and may require a long-term horizon. Public-sector financing instruments to facilitate innovation include direct financial support, tax incentives (*e.g.* R&D tax credits) and credit guarantees.

Governments play a fundamental role in determining demand-side policies that can affect innovation, such as regulations, standards, pricing, consumer education, taxation and public procurement. Well-designed demand-side policies are less expensive than direct support measures, are not directed at specific firms, and reward innovation and efficiency. For example, public procurement provides important signals on future demand to the private sector, and can be particularly effective in those markets where the government is a large consumer.

Knowledge drives economies and the creation and application of knowledge are crucial to the ability of firms and countries to thrive in an increasingly competitive global economy. Investing in knowledge creation and enabling its diffusion are therefore essential to create high-wage employment and enhance productivity growth. Knowledge is a source of future and sustained growth that cannot be exhausted and is

often non-rival. Unlike any other factor of production, knowledge can be used by many firms and countries at the same time to foster sustainable economic growth.

Infrastructure is a vital complement to public and private research, and innovation also requires a supportive knowledge infrastructure. For example, broadband networks provide a platform for the development and diffusion of smart infrastructures (energy, health, transport, education). Governments should promote this symbiotic relationship and ensure that broadband is available throughout their territory.

The development of fully functioning knowledge networks and markets can have a significant impact on the efficiency and effectiveness of the innovation effort. An important contributor to building such networks and markets is the recognised ability to own certain kinds of knowledge through intellectual property rights. However, the protection of knowledge needs to be combined with policies and mechanisms that facilitate access and transfer.

A country's innovation performance depends greatly on the overall quality of governance in key areas such as science, technology and innovation (STI). Governance of innovative activity is not provided by government alone and actors from the research and business sectors, as well as other stakeholders, will need to play an important role in improving governance procedures.

Given the increasingly central role of innovation in delivering a wide range of economic and social objectives, a whole of government approach to policies for innovation is needed. This requires stable platforms for co-ordinating actions, a focus on policies with a medium- and long-term perspective, and leadership by policy makers at the highest level.

Governments have traditionally found co-ordination and coherence difficult due to departmentalised structures, which are generally ill-suited to deal with cross-cutting policy issues such as innovation. For example, fostering innovation and a cleaner environment to help guide economies towards greater sustainability requires closer integration of multiple policies, *e.g.* in transport, energy, environment. While such policies may, in some instances, be complementary, in others they may be incompatible, thus potentially reducing their overall effectiveness.

Evaluation is essential to enhance the effectiveness and efficiency of policies to foster innovation and deliver social welfare. Improved means of evaluation are needed to capture the broadening of innovation, along with better feedback into the policy-making process. This also calls for improved measurement of innovation, including its outcomes and impacts.

Innovation offers a means of addressing global and social challenges at both the global and the local level. Global challenges are by nature large-scale and complex and need to be addressed collectively by the international community. They cannot be addressed by any one nation alone nor solved by any single policy intervention. A mix of policy instruments is necessary to reach sustainable solutions.

As outlined in the joint OECD/UNEP report on *Climate Change and Tourism Policy in OECD Countries*, climate change is one such global challenge that is particularly relevant to tourism and tourism policy-makers. Tourism currently accounts for an estimated 5% of anthropogenic CO<sub>2</sub> emissions; however, under a business-as-usual approach these emissions (primarily from transport and accommodation) are projected to more than double over the next 25 years. Therefore, while tourism is currently a relatively minor emissions sector, it has the potential to be a significant contributor to emissions, and their associated environmental impacts, if the current growth in emissions continues unchecked.

The challenge presented to the international community by climate change is one that can only be addressed effectively through massive innovation. Pricing of environmental externalities, such as carbon emissions, will be an important trigger for the development and diffusion of green technologies and innovations. For example, tax policies, standards or other economic instruments can foster markets for innovation, as can the removal of environmentally harmful subsidies. Fostering the growth of new firms will be essential element in this process, as they are often the source of the most radical innovations.

In addition, non-governmental organisations, private foundations and social entrepreneurs, often driven by non-profit motives, can play an important role in catalysing innovation to solve social challenges that are insufficiently addressed by governments or the market. Companies and entrepreneurs can also seek to address social problems, primarily through the prism of corporate social responsibility (CSR); however, they can also often identify business opportunities in this area.

### ***Fostering green innovation***

The recent OECD publication, *Fostering Innovation for Green Growth*, highlights that as with innovation in general, there is no single factor or policy that will drive green innovation. In most OECD countries, both supply and demand side policies are being used to strengthen innovation. This includes public investment in research, generic incentives to strengthen private investment in R&D, more targeted measures to support specific goals or steer innovation towards given sectors, technologies or groups of firms, as well as measures to support commercialisation and demand for green innovation.

This combination of demand-side and supply-side policies is an important consideration for the policy mix. Neither supply-side nor demand-side policies are likely to be effective in isolation. Fostering innovation requires addressing the entire innovation chain. Even when countries have similar policy goals, the respective instrument mixes can be expected to differ as these mixes need to be adapted to the specific environments in which they are intended to work.

Similarly, there is a balance to be met between having a set of instruments that is sufficiently differentiated to meet the needs of complex innovations systems, while avoiding inefficiencies arising from operating too many schemes at too small a scale.

Policies to foster green innovation will benefit from continued evaluation and monitoring, to improve their effectiveness and efficiency over time, and to take advantage of new scientific insights, technologies, business processes and innovations, with any changes resulting from evaluation needing to be balanced against the benefits of policy stability over time. Other policy considerations in relation to fostering innovation for green growth include:

- stable and long-term market signals, based on the pricing of the environmental externalities, are core for a strong and comprehensive strategy for green growth and for green innovation.
- improving the overall business environment for innovation is essential to green innovation and requires implementation of a broad-based innovation strategy.
- to help lower the costs of future green innovation, open up the scope for technological breakthroughs and create new opportunities, public investment in research is needed.
- governments need to encourage the process of experimentation and creative destruction to bring about new options that can help strengthen environmental performance at the lowest cost.

- when private efforts are insufficient, government action, including support, may be required to overcome market failures and barriers in specific sectors.
- well-designed demand-side policies, such as public procurement, standards and regulation can help to support the development of markets for green innovation, in particular in areas where price signals are ineffective.
- co-operation with other countries and research centres therefore needs to be developed to gain access to relevant research and work together on the development of solutions to drive down the costs of green innovation. Openness to foreign trade and investment is therefore key to an efficient approach to address global environmental challenges.

## **Green innovation in tourism**

### ***Innovation and tourism***

Tourism has historically suffered from low productivity in the economies of the most developed countries, often resulting in difficulties to attract the necessary level of capital investment, and highly qualified staff. One of the major reasons for this weakness is that tourism is a labour-intensive industry. However, it can be argued that it is not necessarily the current rate of productivity that determines the future performance of a business, industry or economy, but rather its level of innovation.

Innovations in the transport sector have, on more than one occasion, set in motion a rapid and irreversible process of change in the field of tourism, from the construction of the first railways, to the mass production of the automobile and the global village created by the modern jet airplane. Today the countries that pioneered tourism are facing the consequences of this continuous rapid development, as distances continue to shrink. As a result of globalisation, ‘process’ innovations in tourism become critical for survival, and can enable tourism operators to bring costs down, leading to quality improvements, lower prices and increased profitability.

However, generally speaking, the innovation process has not been made a matter of routine in tourism. As the various branches of the tourism industry reach maturity, pioneering companies become less commonplace. Business opportunities are sought in new sectors (including eco-, green or sustainable tourism), and markets, however, entrepreneurship as a resource tends to decrease. In such circumstances, the “spirit of enterprise” becomes an even greater resource in the process of innovation. With fundamental innovations generally not expected, innovations often become a matter of small steps; part of a process of “feedback”. One innovation leads to another, producing slightly improved products and more efficient processes, and the innovation process becomes just another component of the investment process.

In tourism, innovative, successful competitors at the product level will soon find themselves being imitated. At the process level innovations tend to be outsourced. Imitation and outsourcing are thus important means of disseminating innovation in the field of tourism. As the focus on delivering sustainable tourism, and the move to a greener tourism economy, increases, imitation and outsourcing will no doubt continue to play a major role in the development and adoption of green innovation products and practices by tourism businesses. However, as with any kind of innovation, spill-over effects such as imitation may deprive innovators from the full benefits of their efforts.

### ***The role of green innovation***

As outlined previously, green innovation or eco-innovation, for the purposes of this project is defined as innovation that results in a reduction of environmental impact, and/or optimises the use of resources

throughout the lifecycle of related activities. In addition, it is argued that green innovation has the ability to seek more radical improvements than traditional forms of innovation.

Importantly for tourism, and other predominantly service oriented sectors, innovation to improve environmental performance is not only about new technologies. Non-technological innovation will play an increasingly important role in the transition to a green economy. Examples include the introduction of environmental management systems and new business models (a review of green business model innovation in tourism is discussed in more detail in Chapter 3), changes to marketing and organisational methods, and also innovation in social and institutional structures. Governments should foster such innovation, and in doing so, need to consider whether their framework policies are sufficiently conducive to such innovation.

On the supply-side, many of the enabling conditions for innovation and green innovation are the same, while the fundamental drivers and barriers are also similar, as confirmed by empirical work by the OECD, which found that green innovation thrives in a sound environment for overall innovation. However, the rate and pattern of green innovation is also heavily influenced by other factors, notably the environmental policy framework.

Some non-tourism specific data are available on green technology development, such as the increase in the number of patented inventions; however, much less information is available on related non-technological changes and innovation that will also be instrumental in driving green growth.

While there is some evidence that advances are being made, innovation with an environmental or green focus can face additional barriers that exacerbate existing ones. For example, when firms and households do not have to pay for environmental services or the costs of pollution, the demand for green innovation is constrained and there are fewer incentives for companies to invest in innovation.

Boosting green innovation, therefore, benefits from clear market signals, *e.g.* carbon pricing or other market instruments addressing the externalities associated with environmental challenges. Such signals will enhance the incentives for firms to adopt and develop green innovations, and help to indicate the commitment of governments to move towards greener growth. They will also enhance efficiency in allocating resources by establishing markets for green innovation, and will lower the costs of addressing environmental challenges.

A key consideration is, therefore, how and where governments should focus their efforts. In terms of how, there are three key ways that governments can lend their support to green innovation *i)* funding relevant research, whether public or private; *ii)* targeting barriers to early-stage commercial development, *e.g.* access to finance is particularly problematic for firms engaged in green innovation, due to the relative immaturity of the market; and *iii)* using demand-side innovation policies, such as standards, well-designed regulations and public procurement. Of these methods, the targeting of barriers to development and using demand-side innovation policies are likely to be most relevant to the tourism sector.

As such, there is a diversity of possible government approaches depending on the context. This diversity focuses attention on the governance arrangements around the policies to foster green innovation. In general, this requires policies with a medium- and long-term perspective, which are subject to continued evaluation and monitoring, and attention from policy makers at the highest level. Of particular importance, due to the cross-cutting nature of tourism, governance also involves co-ordination of simultaneous policy actions and consideration of possible interactions with policies with other objectives (discussed in more detail in the next section). Simply developing additional policies will not improve coherence; existing policies may have to be adjusted or phased out.

## Approaches to green innovation in OECD member countries

The promotion of innovation by the State can be controversial from the market policy perspective. There are nonetheless valid reasons for adopting an innovation-oriented tourism policy, essentially relating to market imperfections and redistribution objectives.

Innovations are a way of making sure that the economic structures of destinations will always be dynamic. Existing products and services have to be upgraded, and with diminishing natural resources, a growing focus on sustainable tourism development, and the ability to provide businesses with a potential source of competitive advantage, green innovation, is playing an increasingly important role.

Tourism locations or clusters are potentially a good breeding ground for innovations; however, due to the predominance of SMEs in tourism, businesses often lack the capacity to make the innovation process routine. In response, governments can help to create centres of excellence to pool know-how and then disseminate it at both the national and local levels, at the same time providing support for applied research and development.

Governments can also encourage private initiatives that promote co-operation between different companies and economic sectors. This is particularly important in tourism due to its cross-cutting nature, where the creation of new products and improved processes rarely occurs in isolation.

In addition to the negative externalities associated with environmental challenges and other market failures highlighted previously, the provision of government incentives for innovative projects in the area of tourism can be justified by the fact that a flourishing tourism industry helps to increase general prosperity. Government support can help to increase demand for tourism services, with the higher output creating new jobs and opportunities for growth.

## *Policies and programmes*

In a survey on green innovation in tourism, countries were asked to highlight government policies and/or programmes that currently support such innovation at the national and sub-national levels. In line with the definition of innovation outlined above, this includes all policies and programmes designed to encourage the tourism sector and/or businesses to develop or adopt products and processes which are new to the firm, market or the world (innovation), which lead to a reduced environmental impact (green innovation).

All respondent countries indicated that they currently have policies and/or programmes in place to support green innovation in tourism, in one form or another; however, there is a range of approaches to addressing the issue (see Table 1). In order to enable a comparative analysis of country approaches, for the purposes of this review, a distinction has been made between policies/programmes that have been developed by:

- National Tourism Administrations (NTAs), with a focus on enhancing green innovation capacity in the tourism sector (TI – Tourism Innovation);
- NTAs with a focus on improving environmental performance and/or sustainability (TG – Tourism General);
- Other government departments (*e.g.* Innovation, Energy, Transport, Water), but are relevant and accessible for the tourism sector and businesses (I – Indirect).

While twenty-four countries have indicated that NTAs have initiatives in place to encourage improved environmental performance and/or sustainability in the tourism sector, just over a third (eleven) of these indicated that specific initiatives are in place to enhance the capacity to innovate in order to improve environmental performance and sustainability (nine countries indicated that a National Tourism Strategy plays a role in promoting innovation in the sector). Sixteen countries highlighted that support for green innovation was also available indirectly through initiatives developed by other departments, but relevant and accessible to tourism businesses (for example, nine countries mentioned wider Sustainability Strategy initiatives as being relevant for tourism). Only three countries indicated that there are currently no tourism specific initiatives to support green innovation, but rather a non-sector specific approach to innovation and improving environmental performance (accessible by tourism businesses) is adopted.

At the sub-national level six countries indicated that there were specific initiatives in place with a focus on enhancing green innovation capacity in the tourism sector. However, seven countries suggested there were more general initiatives in place designed to improve environmental performance and/or sustainability in the sector, while only three indicated that other government initiatives at the sub-national level were developed and managed by other departments, but were relevant and accessible for the tourism sector and businesses.

**Table 1. Country approaches to supporting green innovation in tourism**

Approaches to supporting green innovation in tourism	Number of countries (at central government level)	Number of countries (at sub-national level)
Tourism Innovation (TI)	11	6
Tourism General (TG)	24	7
Indirect (I)	16	3

Source: OECD Survey on green innovation in tourism, 2011-2012

Examples of the various approaches taken by countries to supporting green innovation, at the central government level, are outlined below, with examples of specific policies and/or programmes provided.

#### *Austria*

In 2009 the Federal Minister for Economy, Family and Youth initiated a new Tourism Strategy in close collaboration with the nine Länder and all relevant tourism stakeholders. The implementation of the strategy focussed on five key issues: marketing, innovation, focused subsidies, infrastructure and business environment. Examples of specific initiatives emerging from this strategy include:

- Subsidies for innovative projects in cooperation with the Länder (so called “Innovationsmillion”); support of innovative tourism projects based on stakeholder cooperation at destination level.
- In 2009, guidelines for energy management in hotels and restaurants (*Leitfaden Energiemanagement in der Hotellerie und Gastronomie*) were published by the Austrian Energy Agency on behalf of the Federal Ministry, the Federal Economic Chamber and the Austrian Association of Hoteliers. The guidelines provide an overview of planning and refurbishment measures, applicable technologies, financing possibilities and experts/partners and provides examples of good practices.
- The Federal Ministry dedicated its national tourism award to the subject of “Energy efficiency in the hotel and restaurant sector”, while another is dedicated specifically to innovation in tourism (*Innovationspreis Tourismus*) and it is planned to be awarded from 2012.



### *Canada*

In the course of responding to the survey, Industry Canada canvassed other federal departments and while many are involved in government-wide programmes to reduce CO<sub>2</sub>/GHG (Green House Gas) emissions (for example by focussing on fleets, commuting and buildings), these initiatives were not considered to be necessarily innovative, nor impacting directly on tourism.

### *Chile*

The new Tourism Law, published in January 2010 creates the Office of the Undersecretary of Tourism, which sits within the Ministry of Economy of Chile. This gives the tourism sector a robust position in the government structure and establishes the base for stronger development of the industry.

One of the first tasks defined by the Undersecretary was to create a Tourism Strategy outlining the six key pillars that will guide the policies and efforts of the public sector. Sustainability has been identified as one of these pillars, positioning the issue as one of the key factors for the future development of tourism in Chile.

The National Tourism Service (SERNATUR) is currently pushing the sustainable agenda through the National Program for Sustainable Tourism, working in co-ordination with other public institutions and the public sector.

### *Finland*

The Ministry of Employment and the Economy (responsible for both tourism and innovation policy in Finland) published a National Tourism Strategy in 2006 and updated it in 2010, with the aim of drawing attention to sustainable development in tourism business processes and in the supply of services. The Tourism Strategy details measures for promoting sustainable development in tourism and introduces some economic instruments available for initiatives supporting green innovation. Subsidies and funding for green innovation in tourism focus on supporting sustainable development in society, enterprises, and choices for consumers.

*Tekes* is the Finnish Funding Agency for Technology and Innovation, which also sits under the Ministry of Employment and the Economy. It finances research, development and innovation, promoting a broad-based view and emphasising the significance of service-related design, business, and social innovations. *Tekes'* ongoing programmes offer funding for enterprises and research organisations, including tourism and offers programmes supporting sustainable innovations.

In Finland the development of green innovation in tourism is closely linked up to the national and regional policies for sustainable development and regulated by the legislation on environmental issues, including the Land Use and Building Act, Water Legislation, the Environmental Protection Act, the Nature Conservation Act, and Waste Legislation.

### *Ireland*

Fáilte Ireland, the National Tourism Development Authority, has developed a Natural Heritage Strategy which includes particular provision for the development of ecotourism as a niche activity. In 2006, Fáilte Ireland established an Environment Unit with three staff which, among other things, works on the development of green tourism initiatives.

More generally, the Government has identified Green Enterprise as having huge potential to help Ireland meet its economic and environmental challenges. It is widely recognised that Ireland has an

opportunity to promote jobs in Green Tourism as part of an overall strategy on the Green Economy (Box 2).

### **Box 2. Fáilte Ireland Green Tourism initiatives**

Fáilte Ireland works closely with a range of environmental agencies and bodies, such as the Environmental Protection Agency (EPA) and the Sustainable Energy Authority of Ireland (SEAI), to develop support mechanisms relevant to the tourism industry. For example, the SEAI runs a number of grant schemes that enable tourism businesses to utilise green technology within their operations, thus helping to reduce their operating costs as well as their carbon footprint. In addition, for the past five years, the Authority has had in place an Environmental Advisory Group, advising on a range of environmental and green tourism matters. Membership of the group includes: the Environmental Protection Agency; the Sustainable Energy Authority of Ireland; Comhar – the Sustainable Development Council; the Marine Institute; the Heritage Council and Dublin Institute of Technology.

Fáilte Ireland will soon launch a suite of “Green Tourism” pages on the Discover Ireland.ie website, which in addition to providing information to visitors on greening their holiday, will also provide incentives to tourism business to engage with green innovation in their own business. Once active, the link will be [www.discoverireland.ie/greenholidays](http://www.discoverireland.ie/greenholidays).

A range of additional support mechanisms are available to businesses (in all sectors) to develop environmentally sustainable business practices. These supports are available through various Government Agencies and these have been set out in an accessible way in a recent publication 'Developing A Green Enterprise'.

### *Israel*

The Ministry of Tourism’s planning and development policy is guided by environmental, cultural and social considerations, and seeks to involve other Ministries where necessary. The Ministry operates according to a set of environmental principles and programs, including:

- Integration with the landscape and environment – Every project is evaluated, inter alia, for its integration in the natural environment.
- Encouraging the use and recycling of existing structures – The Ministry encourages the establishment of tourism enterprises in buildings slated for preservation and recycling through tourism-related uses.
- Green construction – The Ministry promotes and encouraging green build elements in the construction of hotels by demanding the integration of energy and water saving systems as a condition for grant endowment.

### *Mexico*

According to the National Development Plan 2007-2012, one of the major strategic priorities guiding Mexican policy is sustainability. In this context, the Mexican government currently supports green innovation in tourism through four different programmes, which are coordinated by different agencies of the federal government:

- Clean Tourist Destination – is certification scheme which requires businesses and municipalities to work together, in relation to water and solid waste management, in order to achieve an environmental synergy between society and government (Box 3).

### Box 3. Mexico: Green Tourism Initiatives

The following examples from Mexico demonstrate an innovative approach to certification in tourism, which requires tourism enterprises to work closely with their municipalities (*Clean Tourist Destination Scheme*), and where final certification is linked to the attainment of a minimum percentage of hotels certified in a complimentary scheme (*Environmental Quality Tourism Scheme*).

#### Clean Tourist Destination

Clean Tourist Destination is another initiative of the federal government; this certification involves working in coordination with the municipality in order to obtain an integral water and solid waste management. The Federal Environmental Protection grants the Clean Tourist Destination certificate when businesses and the municipal activities mentioned above have reached the corresponding qualifications, thereby achieving an environmental synergy between society and government.

Municipalities must obtain a certification in Municipal Environmental Quality. The Federal Environmental Protection Bureau grants the certificate when a locality has achieved a certification of municipal processes in integral water management and solid waste, and has at least 75% of hotels certified under the Environmental Quality Tourism programme.

#### Environmental Quality Tourism

This is a certification Program promoted by the federal government and is granted to organisations with tourist activities (Hotels and motels, restaurants, sports facilities, recreation centres, natural areas, theme parks, spas, golf, etc.) that have demonstrated compliance with environmental legislation and self-regulation. The certification process involves:

1. Environmental audit planning
  - A verification unit (environmental auditors) which is accredited by the Mexican accreditation entity and approved by the Federal Environmental Protection Bureau must be selected.
  - The selected verification unit must prepare an audit plan, in which the audit programme is established.
  - After a review of the plan, the company must be registered in the National Program of Environmental Audits.
2. Execution of the environmental audit
  - The verification unit will conduct a comprehensive study of the processes, and of the documental evidence, to verify compliance with the legal framework for environmental implications.
  - The auditor must prepare a report mentioning its findings.
  - The auditor must then prepare a plan of action for the compliance and correction of its findings or areas of opportunity.
3. Post audit
  - An agreement with the Federal Environmental Protection Bureau is signed, in which the organisation commits itself to comply with the plan of action.
  - The follow up stage of the action plan starts, this means that, preventive and corrective actions are taken to solve the findings or opportunity areas found in the audit.
  - Once the action plan is completed, the corresponding certificate is issued for a valid term of two years.

- Sustainable Tourism Program in Mexico – Implemented by the Ministry of Tourism, its major objective is to develop tourism in a sustainable manner, with the most important step being the

implementation of a system of indicators to measure and evaluate the situation of tourist destinations in the terms of sustainable development.

- **Environmental Leadership for Competitiveness** – the objective is to promote the competitiveness of value chains and small and medium sized suppliers of large companies, through a mechanism of corporate environmental management with emphasis on eco-efficiency. The Program is co-ordinated by the Ministry of Environment and Natural Resources and involves collaborative work between public and private sectors to include the federal government and local governments, leading corporations, suppliers, chambers and associations, among others.
- **Environmental Quality Tourism** – a certification programme promoted by the federal government and granted to organisations with tourist activities that have demonstrated compliance with environmental legislation and self-regulation.

### *New Zealand*

The New Zealand Government's economic goal is to build the foundations for a stronger sustainable economy that will provide New Zealanders with jobs, higher incomes, and improved living standards. Innovation, including green innovation, is seen as being central to achieving improved returns not only to tourism, but the broader economy. Greening economic activity, including in the tourism sector, will require effective partnerships between government and broader stakeholders.

Specific policies and programmes to support green innovation in tourism in New Zealand fall into the categories of Quality Assurance, Transport and Energy, Green Credentials and Information Resources, and Research, and include:

- **Qualmark** – is a voluntary national tourism quality assurance and environmental certification programme. In 2008 Qualmark introduced mandatory environmental criteria (Responsible Tourism Criteria) across all licence categories to improve the environmental performance of the sector. The criteria consider the following aspects of business performance: energy efficiency, waste management, water conservation, conservation and the community. Qualmark has introduced an Enviro-award scheme which recognises businesses that perform well against the responsible tourism criteria. Qualmark have also introduced a tourism specific carbon calculator, the Enviro Carbon Gauge (ECG), which allows Qualmark licence holders to monitor and measure their energy use and inform decision-making when considering introducing energy efficient technology and processes.
- **Tourism Energy Efficiency Programme (TEEP)** – which concluded in June 2011, aimed to help tourism businesses introduce new equipment and processes that would improve energy efficiency and reducing costs for the businesses over time. TEEP was a partnership between the Ministry of Transport and the Energy Efficiency and Conservation Authority (EECA) and the Tourism Industry Association of New Zealand to help tourism businesses improve their competitiveness and environmental credentials through better energy management.
- **Green Growth Advisory Group** – The government appointed a Green Growth Advisory Group in January 2011 to advise it on policy options and practical interventions that support greener economic growth (Box 4).

#### **Box 4. New Zealand: Green Growth Advisory Group**

The New Zealand government appointed a Green Growth Advisory Group in January 2011 to provide advice on policy options and practical interventions that support greener economic growth.

The Advisory Group is focused on:

- How New Zealand, and in particular Government agencies, can help exporters leverage greater value in international markets from our clean, green brand;
- Opportunities for smarter use of existing technologies and innovation, as well as greater development and adoption of new technologies (including clean technology) in our productive sectors; and
- The options for small and medium sized businesses to move to a lower carbon economy while sustaining the desired level of productive growth.

The tourism sector is one of the key sectors that the Advisory Group will be providing advice on.

The concept of green growth provides a framework for aligning environmental and economic performance and the Green Growth Advisory Group will provide this advice in a report to the Minister for Economic Development and the Minister for the Environment by 20 December 2011.

#### *Norway*

The National tourism strategy of Norway, “Valuable Experiences”, from December 2007, identifies a green, sustainable direction for Norwegian Tourism. Innovation is highlighted as one of seven priority areas and sustainability one of three main goals in the Strategy. The clear linkages between sustainability and innovation give both an incentive and clear support for green measures. A new tourism strategy is under development and here green innovation will be further emphasized, now mainstreamed into all aspects of tourism development.

As part of the Sustainable Tourism 2015 project, which sits within the wider strategy, Innovation Norway activities include the provision of a skills program for sustainable tourism. The program is offered to all large and small tourism operators throughout the country. Innovation Norway also offers the environmental certification label “Green Travel” and marketing of certified green businesses through the official travel portal [www.visitnorway.com](http://www.visitnorway.com) (Box 5).

#### **Box 5. Norway: Environmental certification promoting innovation**

The “Green Travel” label directs potential guests to tourism businesses with an environmental certification (Blue Flag, Nordic Swan, Environmental Lighthouse, Ecotourism Norway and ISO 14001). About 340 enterprises are now tagged as “Green Travel” on the national travel portal as well as on the national travel App for iPhone and Android (called Visit Norway). This number is increasing every week. Many enterprises consider the value of an environmental certification to be increasing, and there is growing interest for environmental certifications in the tourism industry. Behind an environmental certification are substantial efforts in waste systems, transport, procurement, water, energy etc., and the certification process often involves innovations in energy saving solutions, waste management, transport, procurement and marketing. In addition, the development of the Green Travel marketing platform has contributed to promoting co-operation between new stakeholders.

In addition, Innovation Norway has been working on including sustainability as a criterion for a range of activities such as: when arranging major events and festivals; as criteria in prizes and awards; in regional plans for tourism; and in educational programs and in marketing and stakeholder cooperation.

### *Poland*

Ministry of Sport and Tourism, has for many years supported green innovation in tourism, including through the creation of platforms for exchange of experiences and good practices, as well as the dissemination of knowledge in the field of sustainable tourism.

The main government policy document currently shaping directions of green innovation is the strategy “Directions of tourism development until 2015”. This Strategy determines not only the necessary level of commitment from the Government of the Republic of Poland, but identifies actions that should involve all stakeholders in tourism development in Poland, including local government units, NGOs, entrepreneurs, industry organisations, and both the scientific and local communities. An example of one such community-based initiative to encourage green innovation is the Greenways programme (Box 6).

#### **Box 6. Poland: The ‘Greenways’ programme**

Greenways are multifunctional trails, developed in both urban and rural areas, for non-motorised users, typically leading along linear green corridors, historic trade routes, rivers and railways. They are managed by local people in order to encourage sustainable development and healthy lifestyle. Greenways provide a framework for community-based initiatives and projects related to nature conservation, cultural heritage preservation, sustainable tourism and mobility. Greenways seek to address needs of locals and visitors and to provide a positive contribution to the local economy.

In Poland the aims of the Greenways programme are to promote the natural and historical heritage, and development of the local community through the tourism. Foundation “Partnership for Environments” supports the development of the greenway by counselling, training and the provision of financial support for initiatives aimed at sustainable development.

### *Portugal*

Innovation and sustainability are the two main pillars of the Portuguese tourism development strategy. Under the National Strategic Plan for Tourism 2007-2015, “innovation and knowledge” was defined as one of the five strategic action lines of its implementation programme, thereby serving as the basis for tourism public policies formulation. Sustainability has a vital role to play as the basic principle of tourism policy: to promote an economically viable activity in the long-term, making optimal use of resources while respecting the environmental and socio-cultural authenticity of host communities and their values. The challenge of green innovation emerges as a consequence of this policy priority.

In terms of programmes supporting green innovation in tourism, the legislative regulatory framework for the sector establishes the legal framework for the construction, exploitation and operation of tourism facilities emphasising the role of sustainability for tourism development. Within the available financial instruments, tourism companies may obtain financing for the development of innovative and environmentally sustainable tourism projects to enhance its competitiveness, with funding available through the Innovation Incentives Scheme or the SME Qualification and Internationalization Incentives Scheme, financed mainly by EU funds.

Incentives in the above schemes focus on expenditure relating to energy efficiency (improving energy efficiency and diversification of energy sources based on renewable resources), environment (investment associated with emission control, environmental audits, waste management, noise reduction, efficient

management of water, introduction of eco-efficient technologies), as well as certification of environmental management systems under the Portuguese Quality System, eco-labelling & eco-system management.

In addition to these national instruments, Turismo de Portugal has recently launched a project to establish a network of cooperation in R&D in tourism (2011-2013), in order to mobilise the tourism research capacity of universities (Box 7).

#### **Box 7. Portugal: Network of co-operation in tourism R&D**

Turismo de Portugal has recently launched a project to establish a network of co-operation in tourism R&D, running from 2011 to 2013, in order to mobilise the tourism research capacity of universities. It is the first instrument of tourism policy developed specifically for the promotion of innovation in tourism and, in particular, of green innovation in tourism. The project is still in its early stages and therefore is not yet possible to draw conclusions about the results of the project.

Objectives:

1. Stabilise the relationship between the scientific and technological system and all the agents involved in the tourism value chain, creating the necessary communication with enterprises;
2. Boosting the achievement of an R&D agenda for sustainability and competitiveness of tourism;
3. Developing international cooperation
4. Ensure appropriate funding for R&D projects with an impact on tourism by launching specific competitions (2011-2013) and the use of other sources of funding.

This project should act upstream of innovation processes, producing knowledge in critical issues for green innovation in tourism, focusing primarily in the following areas:

1. Information and communication technologies: processes with a focus on market access, network management and virtualisation of the value chain, optimisation of management processes, enrichment and / or creation of new proposals for consumption / experience, intelligence, etc.;
2. Architecture, technology and construction materials, with particular emphasis on the adaptation of creative design, integrated
3. environmental solutions, building energy optimisation, etc.;
4. Water management and energy management, particularly regarding research solutions for profitable production and consumption and reduced environmental impact for businesses and entertainment equipment.

The network's mission will be to bring up partnership projects between the National Scientific and Technological System and enterprises able to create green innovation.

#### *Slovak Republic*

There are currently no specific government policies directly supporting green innovation in tourism at the national or regional levels. Responsibility for tourism in Slovakia lies with the Ministry of Transport, Construction and Regional Development, and while the New Tourism Development Strategy of the Slovak Republic (to 2013), does not deal directly with the issue of green innovation in tourism, the Strategy does seek to create conditions supporting sustainable tourism development.

Efforts by the government to encourage and develop innovation activities include the establishment of appropriate support instruments. One such instrument is the “Innovative Action of the Year” award granted by the Minister of the Economy of the Slovak Republic, which is responsible for innovation strategy. In addition, the government will seek to create conditions to support innovation activities in both the public and private sectors, and including the culture and creative economy (Box 8).

### **Box 8. Slovak Republic: Supporting innovation with access to finance**

The Government will establish a long-term sustainable project aimed at improving the access of smaller innovative companies to funding. In co-operation with the European Investment Fund, the Government will launch the JEREMIE initiative which is primarily focused on supporting small and medium-sized enterprises (SME). The main objective is to provide venture capital to innovative SMEs having a good business plan and an innovative idea with good commercial prospects. The JEREMIE initiative in Slovakia covers debt instruments (bank guarantees and credits) and capital instruments (venture capital) which are provided to SMEs indirectly, through selected financial intermediaries (commercial banks, venture capital fund managers). Venture capital instruments primarily concentrate on support to applied research and development and transfer of technological knowledge into practice.

### *Sweden*

The Swedish government is currently developing a national innovation strategy aiming for full implementation by 2020. The aim of the strategy is to provide the best possible conditions for people, companies, public administrations, regions and research actors to be as innovative as possible. This in order to meet the challenges, needs and demand for new or better solutions to face the challenges of the future, not least relating to sustainable development. This strategy includes tourism and how to support green innovation in tourism.

As part of the strategy, VisitSweden have developed a practical tool called “Svante”, which is available for use, free of charge, by all partner destinations. The innovative tool provides tourism businesses with an overview and structure of their climate work. It further calculates the environmental impact of the company (following the international reference standard known as the Greenhouse Gas Protocol), and helps to translate energy use into climate impacts in a transparent and comparable way. In addition it includes simulation facilities to test the effects of various measures to optimise operations in relation to climate impacts, thus encouraging businesses to consider innovative approaches and enabling them to estimate the potential benefits of such practices.

### *Switzerland*

The State Secretariat for Economic Affairs is responsible for the development and implementation of Switzerland’s tourism policy. The Swiss Federal Council passed a Growth Strategy for Switzerland as a Tourist Destination in June 2010 and, recognising the importance of sustainability for Swiss tourism, enshrined the consideration of the principles of sustainable development into the Growth Strategy for Switzerland as a Tourist Destination.

The Growth Strategy focuses on the “economic performance” dimension of sustainability, preventing negative effects on society and the environment wherever possible. It endeavours to improve resource efficiency and separate tourism growth and consumption of resources. Innovations, particularly “green innovations” are a key driver behind the sustainable development of tourism.

The Federal Council has defined four strategies directions to achieve the Confederation’s tourism policy objectives. Sustainability is a fundamental integral cross-sectional issue across the four strands of the new tourism policy and therefore plays a key role in implementation of the Growth Strategy. Sustainability has been a key component of Swiss national tourism policy for over ten years by being enshrined in the Federal Act on the Promotion of Innovation and Cooperation in Tourism (1997 Innoutour Act). The Innoutour Act only supports projects that promote the development of tourism in harmony with nature, man and the environment (Box 9).



### **Box 9. Switzerland: Federal Act on the Promotion of Innovation and Co-operation in Tourism**

Switzerland has been supporting innovative and sustainable tourism projects for over ten years with the Federal Act on the Promotion of Innovation and Cooperation in Tourism (1997 Innotour Act). The Innotour Act was recently reviewed and came into force in a revised form in February 2012. The Act now stipulates the necessary project requirements in relation to sustainability, and only projects that contribute to the improvement of resource efficiency will be supported. It is intended that Innotour will help in the medium to long-term to drive forward the separation of economic growth and the consumption of resources needed. Therefore, Swiss tourism should achieve greater value creation while using as few resources as possible. The new Innotour Act will also allow the Confederation to specify topics and spearhead relevant projects, thereby expanding the possibilities of national tourism policy to specifically promote the sustainability of tourism.

### *Turkey*

National Development Plans which cover sectoral development prospects, priorities and policies are prepared by Ministry of Development. In the 9th Development Plan (2007-2013), tourism goals and policies began to underline improved quality (both in facilities and services), environmental sustainability and a more egalitarian approach to spreading the beneficial effects of tourism, particularly to less developed areas. “The Tourism Strategy of Turkey 2023” and “Action Plan for 2013” collectively target wiser use of natural cultural, historical and geographical assets of Turkey with a balanced perspective addressing both conservation and utilisation.

Since 1994, incentives have been provided to the private sector to encourage investment in environmental protection through the use of matching grants, covering up to 50% of the costs of environmental investments, and tax exemptions. In 2008, the Ministry of Environment, in co-operation with other related institutions, initiated a study to identify and remove environmentally harmful incentives.

### *United Kingdom*

The Department for Culture, Media & Sport published ‘Sustainable Tourism in England: A framework for action’ in March 2009. This set out six key challenges that the tourism industry needs to address in areas of environmental impact and resource use, the impacts of transport, quality and accessibility, community engagement and seasonality of demand, together with a series of indicators to measure progress.

VisitEngland, the national domestic marketing body for England, has also published a Wise Growth Action Plan which sets out a number of actions that stakeholders have agreed to take to embed a sustainable approach to tourism into their operations. This includes work to promote Green Start, a one stop shop for wise growth and sustainability in business.

### *Egypt*

As the regulating body for the Egyptian tourism industry, the Ministry of Tourism (MOT) is currently active in establishing the necessary structure within both the Ministry and the tourism industry itself. Key policy areas include the establishment of a green unit within the Ministry to focus on implementing a number of projects for “Green Transformation” in the sector, and the establishment of a dedicated secretariat for the “Supreme Council for Tourism”. The Council is headed by the Prime Minister and includes a number of relevant Ministers on its board, and this high level support will help to galvanise and co-ordinate future efforts in the green transformation of tourism.

The Ministry of Tourism has also launched the “Green Sharm Initiative”. The main rationale of which is to effectively become environmentally sustainable and capitalise on ecotourism trends by adopting an holistic approach based on the four pillars of emissions mitigation, biodiversity, waste management best practices, and water conservation. These 4 pillars translate into 33 quantifiable projects to deliver a low carbon, environmental friendly city by the year 2020 (Box 10).

#### **Box 10. Egypt: The Green Sharm Initiative**

The Green Sharm Initiative is a leading example in Egypt and the Middle East, as it is a comprehensive initiative that tackles the transformation of “Sharm El Sheikh” as a global pioneer in the greening of cities, based on a holistic approach. “The Green Sharm Initiative”:

- Based on a holistic approach focusing on four key areas of “Greening”: Reduced Carbon Emissions, Sustainable Water Supply and Conservation, Effective Waste Management and healthy Biodiversity.
- The Initiative uses a 2-stage strategy:  
Stage 1: “Realistic Green” with quantifiable targets by 2020. Example:
  - Emissions:
    - Reduce destination related emissions by 36% compared to business as usual.
    - Reduce hotel energy consumption by 13% per guest night (GN).
  - Water Supply:
    - Decrease water consumption P/GN for existing hotels by 13% and new hotels by 28%.
    - Reduction in water wastage in supply network by 75%.
  - Waste Management:
    - Achieve level (3) in solid waste management best practice (level 5 is the highest standard).
    - Achieve level (2) in sewage treatment best practice (level 3 is the highest standard).
  - Biodiversity:
    - Reduce rate of degradation of coral reefs to 5% per year.

These targets are detailed in specific projects that total (33) projects of which (17) have been identified as priorities and include enabling projects that deal with issues of funding , governance, marketing, awareness, regulations and others.

#### *Indonesia*

The Ministry of Tourism and Creative Economy coordinates all tourism development in Indonesia, including green tourism, working closely with other relevant institutions that support the programme, including the Ministry of Environment, Ministry of Forestry, Ministry of Energy and Mineral Resources, and Provincial and Local Governments.

Although the concepts of the green innovation and sustainable development are still relatively new, at the policy level, the government of Indonesia puts sustainable development paradigm into tourism development and management by implementing four key principles, namely pro poor, pro growth, pro job, and pro environment. In this regard, the focus and priority of activities in developing Indonesia tourism are 1) development of the industry, 2) development of destinations, 3) development of promotion and marketing, and 4) development of resources and institutions.

Examples of government initiatives supporting green innovation in tourism include developing community-based tourism by providing incentives and support facilities to investors and local communities to develop tourism through the National Program of Independent Community Empowerment (PNPM Mandiri); and implementing a Programme of Sustainable Tourism Through Energy Efficiency with Adaptation and Mitigation Measures in Pangandaran.

### ***Government departments responsible for green innovation initiatives***

Initiatives designed to directly or indirectly increase the capacity of tourism businesses to develop or adopt more environmentally sustainable products and processes, are implemented by a range of government departments and agencies (see Table 2).

Of the twenty-seven responses to the country survey, twenty-five countries indicated that responsibility for at least one government initiative to support green innovation in tourism (with either a specific focus on green innovation or more general support for increased environmental sustainability) lies with the National Tourism Administration. Of the other government departments delivering or administering initiatives relevant and accessible to tourism businesses, eighteen were responsible for Environment policy, followed by seven for Transport, six for Innovation, five for Energy, and four each for the Economy and Food and Agriculture.

**Table 2. Government departments responsible for green innovation initiatives relevant to tourism**

Government departments responsible for:	Number of countries
National Tourism Administration	25
Environment	18
Transport	7
Innovation	6
Energy	5
Economy	4
Food and Agriculture	4

Source: OECD Survey on green innovation in tourism, 2011-2012.

Demonstrating the cross-cutting nature of tourism, over half of the countries (Australia, Austria, Finland, France, Germany, Ireland, New Zealand, Norway, Poland, Portugal, Slovenia, Switzerland, Turkey, Egypt and Indonesia), highlighted initiatives supporting green innovation in tourism that were located in at least two other government departments than the NTA. This result also clearly demonstrates the need for a whole of government approach to maximise synergies and reduce duplication in the support available to tourism businesses.

### ***Industry-led initiatives***

As part of the country survey on green innovation in tourism, countries were also asked to co-ordinate inputs from relevant industry partners to identify any industry-led initiatives that currently support green innovation in tourism. Over two-thirds (20) of responding countries identified specific examples of industry-led initiatives (see Table 3).

**Table 3. Industry-led initiatives supporting green innovation in tourism**

Focus of industry-led initiatives	Number of countries
Accommodation	9
Transport	5
Accreditation schemes	5
Energy	5
Environmental awards	5
Sustainability	5
Information provision	5
Emissions reduction	4
Water conservation	3

Source: OECD Survey on green innovation in tourism, 2011-2012.

Of the industry-led initiatives mentioned by countries, the most common area of focus (in nine countries) related to improving environmental performance is the accommodation sector, with many initiatives focussing specifically on one, or a combination of, energy, waste, water and consumer information. Other common areas addressed by industry initiatives included transport, accreditation schemes, energy (reduction/alternative sources), environmental awards, sustainability (Box 11), and information provision to help businesses improve their environmental performance/reduce costs (each mentioned on five occasions); followed by emissions reduction (mentioned four times) and water conservation in general (mentioned on three occasions).

#### **Box 11. The Futouris e.V. sustainability initiative**

The founders and members of the Futouris association are international tourism companies that work together to improve living conditions worldwide, to preserve biological diversity, and to protect the environment and climate. Based in Germany, the association aims to provide long-term, comprehensive and sustainable assistance toward these goals. By serving as project sponsors, its members help turn ideas into practical measures. As an industry initiative for sustainability, Futouris is dedicated to maintaining high sustainability standards, providing up-to-date information for the sustainability debate and recognising innovation in the industry. All measures are planned and implemented with intensive interaction with the local communities involved.

### **Summary of key issues and findings**

Innovation is defined as the introduction of a new or significantly improved product, process, or method, innovation encompasses a wide range of activities that can be new to a firm, to the market, or the world. As such, it is as much about successfully adopting a process or business method developed by other firms or institutions, as being the first to introduce a new product to the market.

Green or eco-innovation is a somewhat elusive concept, but can be identified by its favourable impact on the environment. It can be defined as innovation that results in a reduction of environmental impact, and/or optimises the use of resources throughout the lifecycle of related activities.

Government action is essential to shape the green innovation ‘environment’. However, as for innovation in general, evidence suggests that there is no single recipe to drive green innovation. Rather, there is a diverse range of possible approaches depending on the context; however, effective governance is at the core of the process.

Given the increasingly central role of innovation in delivering a wide range of economic and social objectives, including increased sustainability, a more strategic, whole of government approach to policies for innovation is needed. This requires stable platforms for co-ordinating actions, a focus on policies with a medium- and long-term perspective, and leadership by policy makers at the highest level.

More specifically, a more strategic approach to fostering innovation and a cleaner more sustainable environment will require horizontal and vertical policy co-ordination, and closer integration of multiple policies, *e.g.* in transport, energy, environment. Government activities should focus on: empowering people to innovate; unleashing innovation; creation and application of knowledge; improving governance; improved measurement of innovation; and addressing global and social challenges. Similarly, to help guide economies towards greater sustainability requires.

The importance of a co-ordinated approach to fostering green innovation in tourism is supported by the findings of the country survey (outlined in Chapter 2). Over half of the countries identified initiatives supporting green innovation, which were relevant and accessible to tourism businesses, located in at least three government departments. This result clearly demonstrates the need for a whole of government approach to maximise synergies and reduce duplication in the support available to tourism businesses.

In addition, results of the survey indicate that of the twenty-seven OECD member and non-member countries that responded, there is a general recognition of the benefits associated with developing a more environmentally sustainable tourism industry, and the role that green innovation can play in shifting to a greener economy.

More specifically, twenty-four countries have initiatives in place to encourage ‘improved environmental performance and/or sustainability’, and which also encourage innovative practices in the tourism sector. Examples of the various approaches taken in respondent countries include:

- Development of strategies and setting of targets for improved environmental performance;
- Establishment of advisory groups to support green growth;
- Establishment of networks to promote R&D;
- Award schemes rewarding innovation;
- Improving access to finance to support innovation;
- Initiatives to enhance the capacity of tourism businesses and organisations to improve environmental performance and sustainability through innovation; and
- Industry-led initiatives with a primary focus on improving the environmental performance of accommodation (energy, water, waste etc).



## CHAPTER 3 – GREEN BUSINESS MODEL INNOVATION IN TOURISM

### Introduction

Environmental sustainability creates both challenges and new business opportunities for companies in virtually all sectors. The tourism industry faces such opportunities and challenges in a more immediate way than many other industries, due to its often direct dependence on the natural environment as an attraction. However, many companies still tackle the issue in a defensive or passive way (e.g. introducing environmental reporting, or isolated attempts to reduce CO<sub>2</sub> emissions), instead of looking at it as a future business opportunity around which the company can innovate and build competitive advantage.

The challenge of making the transition from traditional business model innovation to green business model innovation can be compared to that of going from an old, inefficient, high carbon production model to a new, efficient, low carbon production model and economy (Zysman, 2011). Although sustainability has been high on the policy agenda for a number of years and ranks highly among ‘trends’ shaping the future business environment, the issue is not necessarily high on the agenda for many company managers.

To maximise the opportunities presented by embracing sustainability and adopting a green approach to business model innovation, requires fundamental changes to existing way of doing business, and many strategic management considerations: What is the business offer? Who is the customer? What should the customer experience be and how should it be delivered? Who should be the suppliers and partners?

New ways of doing business can often be facilitated by new tools, methodologies and learning cases. One such example, is the ‘Green Innovation Radar’<sup>4</sup>, a business management tool used in the OECD/Nordic Innovation Green business model innovation (BMI) in tourism project<sup>5</sup> and tested on 28 companies from Austria, Denmark, Finland, Iceland, Mexico, Norway, Portugal, Russia, Republic of Korea, and Sweden.

The project aims to guide tourism companies in the practice of how to work with ‘green business model innovation’ and implement the changes necessary for the transition to more strategic green innovation. The chapter also seeks to provide policy conclusions to facilitate a more sustainable business approach.

### Business models and challenges for green innovation

In general, business model denotes a focus on the system level or a holistic approach towards explaining how firms do business. They seek to explain both value creation and value capture and how

<sup>4</sup> Based on Mohanbir Sawhney, Robert C. Wolcott and Inigo Arroniz - Jiyao Chen & Mohanbir Sawhney, sloanreview.mit.edu & hbr.org & Kellogg School of Management, April 1, 2006 & 2010. The green survey and profile of the Innovation Radar were developed by Jiyao Chen (Oregon State University) for this OECD-Nordic Innovation project in 2011 and as a pilot.

<sup>5</sup> The Nordic Innovation (2012) report of findings, ‘Green business model innovation in the tourism and experience economy’ (available at <http://www.nordicinnovation.org/Publications>), forms the basis for Chapter 3 on Green Business Model Innovation in Tourism.

firms differentiate their business from the competition (OECD, 2011d). Economic benefits are the dominant type of value for companies, and the main driver of new business models. However, most successful business models will be built upon a range of key factors including: *i*) a customer value proposition that meets customer needs better than current alternatives; *ii*) a profit formula that lays out how to make money delivering the value proposition; *iii*) the identification of key resources that the value proposition requires; and *iv*) the implementation of the key processes needed to deliver it.

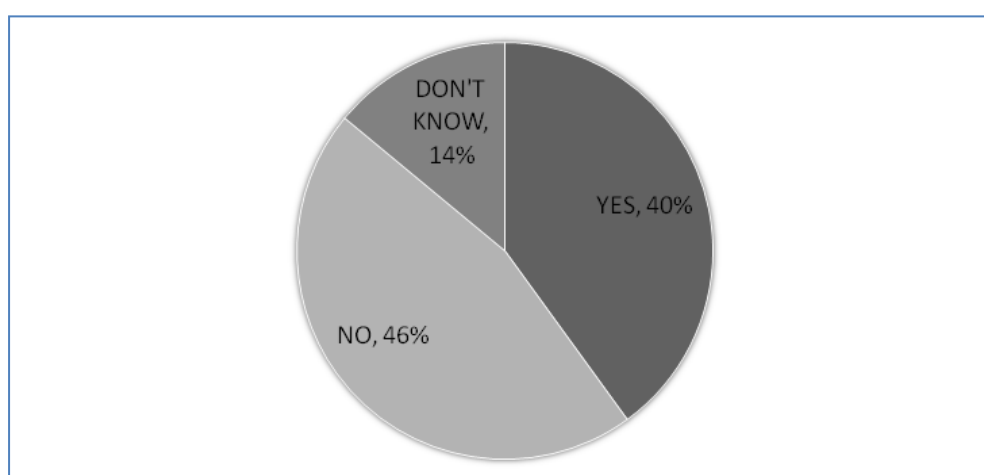
Business models have the potential to generate indirect positive environmental benefits. These are associated with resource and energy efficiency and with the use of new products or technologies with improved environmental performance. A wider application of eco-innovation business models can also lead to societal impacts including job creation or improved quality of life (OECD, 2012).

One of the keys to successful business model innovation is to detect the hidden assumptions in an industry and change them. For example, if a company is trying to beat a well-established competitor at their own game, it is likely they will not be successful, as the company's product or service offering will be just one more offering in an already crowded market. One way or another, to innovate successfully, companies have to be distinctive, and deliver a unique combination of products or services.

Tools such as the Innovation Radar (Sawhney, et al. 2006) give a common language and analytical framework for understanding both the current business of any enterprise and the possibilities available for differentiating business products and services, thereby creating a competitive advantage in the market. Any organisation that wants to be relevant and deliver customer value at a certain scale must have some kind of business model and innovation strategy. Up until the development of the Green Innovation Radar, the issue of sustainability has been absent from such tools.

Although environmental sustainability is high on the political agenda in most OECD countries, it is still less pronounced within the value proposition or business model of most companies, including in the tourism industry. For example, MIT Sloan Management Review and the Boston Consulting Group (BCG) (2012) conducted a survey of 4,700 global CEOs in 2011, to determine how, if at all, the issue of sustainability is changing the way businesses work. The results from the BCG survey show that only 40% of responding companies had changed their business model to improve sustainability (Figure 1).

**Figure 1. Has your organisation's business model changed to improve sustainability?**



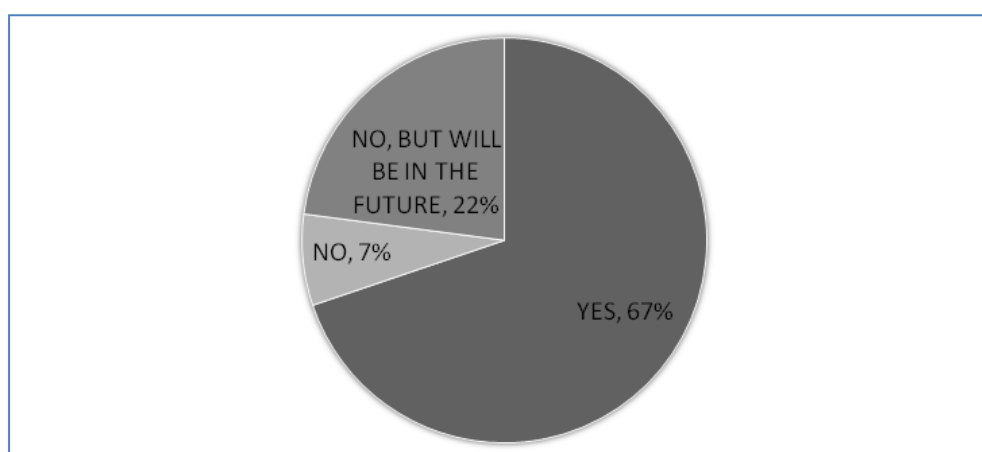
Source: Adapted from Nordic Innovation (2012) *Green business model innovation in the tourism and experience economy* report, developed in co-operation with the OECD Tourism Committee.



Although the sample of companies in the BMI programme is much smaller than in the BCG survey, the results from the 28 participating company workshops, and feedback from company managers, support these findings.

In addition, BCG survey results appear to indicate that while only 40% of companies had changed their business model to improve sustainability, it is no longer considered simply a nice feature to have or an add-on to existing products or service offerings. In fact, the study showed that almost 90% of company managers believe that sustainability strategies are (67%), or will be (22%), necessary to be competitive in the future (Figure 2).

**Figure 2. Is pursuing sustainability related strategies necessary to be competitive?**



Source: Adapted from Nordic Innovation (2012) *Green business model innovation in the tourism and experience economy* report, developed in co-operation with the OECD Tourism Committee

However, value creation is at the heart of any business model, for both the firm and the customer. The key question is how companies can integrate ‘green’ into their business model in a way that makes it sustainable in both environmental and economic terms. The BMI programme, utilising the Green Innovation Radar aims to show how companies can turn ‘green’ business model innovation into a managed process and a more predictable discipline.

### The Green Innovation Radar

The OECD/Nordic Innovation work on green business model innovation builds upon the framework of the Innovation Radar tool. According to the thinking behind the Innovation Radar, innovation is defined as *an initiative in any dimension(s) of the business system to create substantial new value for customers and the firm*. This innovation definition emphasises three points: originality (an initiative to create new value), a holistic view (an initiative in any dimension(s) of the business system), and customer outcomes (the value generated by the initiative for customers and the firm). The Innovation Radar provides a visual profile of the firm’s current innovation strategy through the measurement of twelve vectors. The Innovation Radar profile helps to create a better alignment of innovation strategy across functional areas and levels of seniority (Sawhney, et al 2006).

The point to be considered in the context of this programme is that a company can innovate along any of 12 different dimensions with respect to its (1) offering, (2) platform, (3) solution, (4) customer needs, (5) customer experience, (6) communication, (7) process, (8) value capture, (9) management (10) supply chain, (11) channel, and (12) ecosystem (Table 4). In fact, business innovation is far broader than product

or technological innovation, as demonstrated by some of the most successful companies in a number of industries. Starbucks is the classic case of a company who got consumers to pay \$4 for a cup of coffee-latte, which before then typically cost 50 cents. Starbucks accomplished this not necessarily because of better tasting coffee, but because the company created a customer experience referred to as “the third place”.

**Table 4. The 12 dimensions of innovation**

Dimension	Definition
<b>What</b>	
Product / service	Product innovation is the introduction of products and services with new or significantly improved features and performance.
Platform	Platform innovation is the design and leverage of common bases such as modular components, common processes and shared technologies to create a broad range of new products and services.
Solution	Solution innovation is the introduction of a customized, integrated combination of products, services and information to solve an end-to-end customer problem.
<b>Who</b>	
Customer need	Customer need innovation is the identification and fulfilling of un-met customer needs or un-served customer segments.
Customer experience	Customer Experience innovation is the redesign of interactions that customers have with the company in order to create customer loyalty based on positive emotional experience.
Communication	Communication innovation is the creation and implantation of new ways to educate customers, and to position, promote or brand products and services.
<b>How</b>	
Process	Process innovation is the design and implementation of a new or significantly improved internal business process in any functional area.
Value Capture	Value Capture innovation refers to the creation and implementations of new mechanisms to get paid for products and services.
Management	Management innovation is the invention and implementation of a significant change in organisational structure or management methods.
<b>Relationships</b>	
Supply Chain	Supply Chain innovation is the introduction of new or significantly improved methods of sourcing inputs or the development of new relationships with suppliers to source inputs.
Channel	Channel innovation is the introduction of new routes to the marketplace or innovative points of presence for customers to find and buy products or services.
Partnerships / ecosystem	Partnership innovation is the creation of innovative partnerships and collaborative relationships to create joint offerings and serve customers

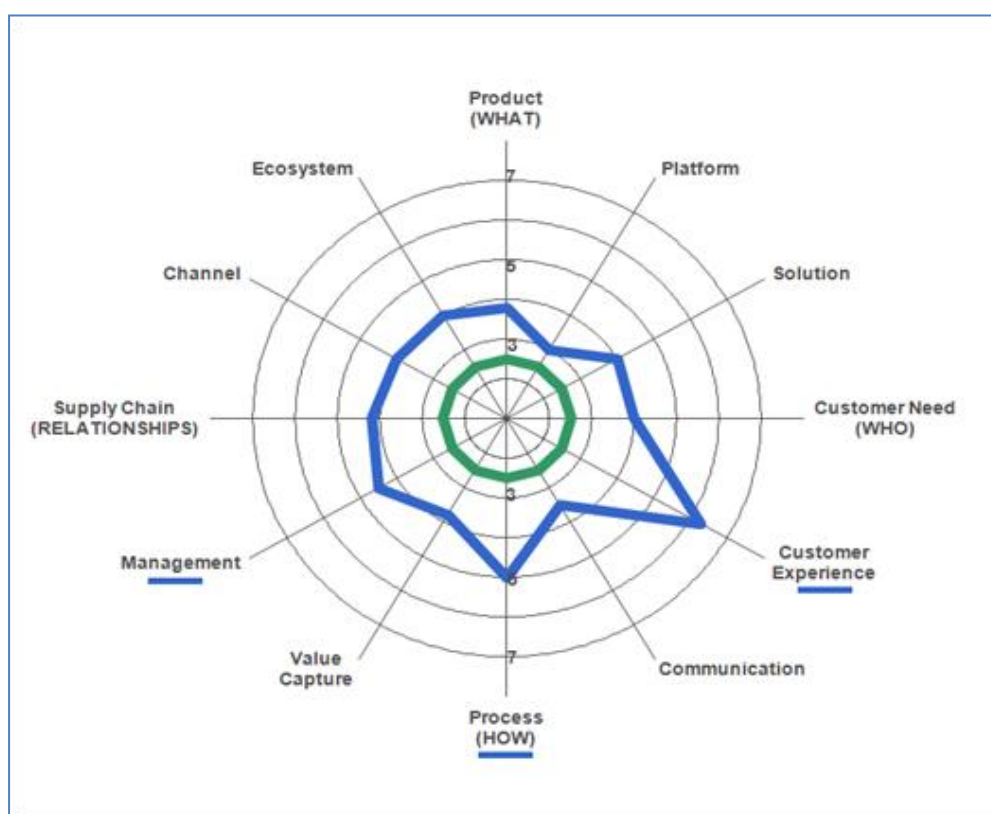
Source: Adapted from the Innovation Radar, developed by Mohanbir Sawhney, Robert C. Wolcott and Inigo Arroniz - Jiyao Chen.

The Innovation Radar utilises a seven point Likert scale to indicate the innovation focus in relation to each of the twelve dimensions. A low or limited focus on one dimension is represented by a score of 1-3, while a score of 4-7 would represent a strong focus. A score of 7 indicates that a company is trying to be a ‘game changer’ within that dimension of its industry.

Based on a survey of company managers, the Innovation Radar asks a series of questions in relation to the 12 dimensions of innovation, while the Green Innovation Radar asks an additional series of questions to establish an individual company's innovation philosophy, goals and performance relating to improving environmental sustainability.

The survey results are then represented graphically in the form of a spider diagram, to indicate a company's general innovation and green innovation profiles. An example of an unfocussed Innovation Radar profile can be found in Figure 3, while a more focussed profile is evident in Figure 4.

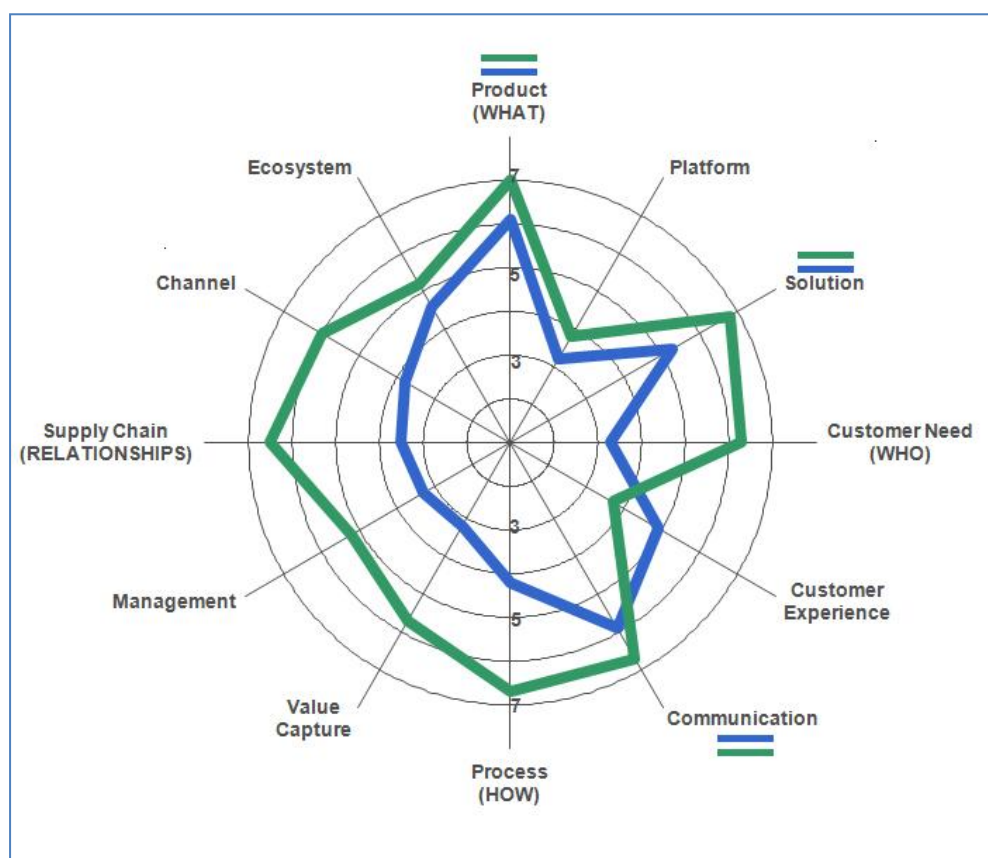
**Figure 3. Unfocussed Innovation Radar profile**



Source: Adapted from Nordic Innovation (2012) *Green business model innovation in the tourism and experience economy* report, developed in co-operation with the OECD Tourism Committee.

In reading a company's green innovation radar profile it should be noted that the blue spider web signifies where the company has its traditional innovation focus, while the green spider web signifies where the company has its green innovation focus. The blue and green lines underneath the 12 Innovation Radar dimensions show where the company has demonstrated their statistically three highest innovation efforts or peaks, and the more aligned the blue and green profiles are, the stronger the company's overall green innovation radar profile (Figure 4).

It is important to remember that while a company may have high innovation effort (i.e. close to the outer part of the spider web), it may not necessarily have a clear profile or focus. In other words, the challenge for most companies is not only to prioritise green innovation, but also develop the ability to differentiate and develop a clear profile and thereby stand out from the competition and master business model innovation.

**Figure 4. Focussed Innovation Radar profile**

Source: Adapted from Nordic Innovation (2012) *Green business model innovation in the tourism and experience economy* report, developed in co-operation with the OECD Tourism Committee.

Many organisations rely on an ad hoc and unstructured approach to innovation, which in most cases will result in only incremental innovations to existing products or services. Strategic innovation is a holistic, systematic approach focused on going beyond incremental improvements, and becomes strategic when it is an intentional and recurrent process that creates a significant difference in the value delivered to consumers, partners and the organisation itself.

### Green business model innovation and tourism

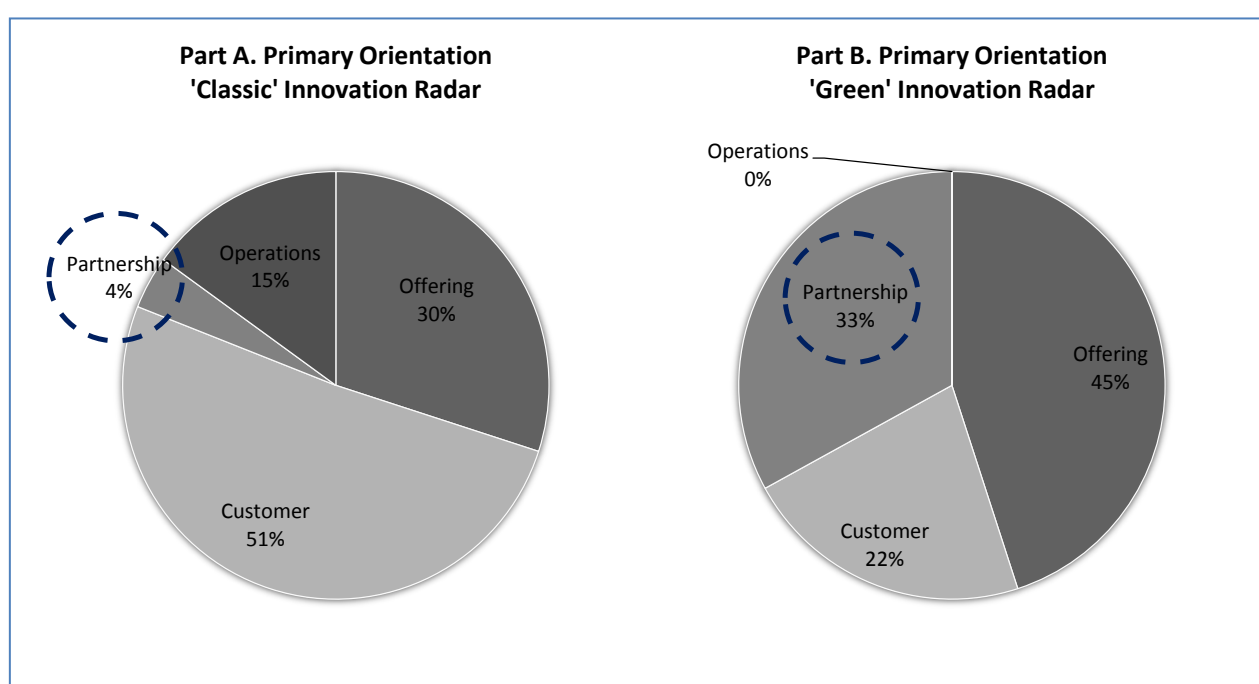
The Green Innovation Radar was applied to a total of 28 tourism companies from Austria, Denmark, Finland, Iceland, Mexico, Norway, Portugal, Russia, Republic of Korea, and Sweden. Around 150 company managers answered a survey on innovation in general and one more specifically focussed on the Green Innovation Radar (GIR), with the ‘classic’ and ‘green’ Innovation Radar results compared.

An analysis of company results indicates that only 15% of participating companies demonstrate a strategic or focussed approach to business model innovation. While this might seem to indicate that tourism companies are weak on innovation strategy, these findings differ only marginally from results for other sectors analysed using the Innovation Radar. For example, in the Nordic Innovation Measured and Managed Innovation Study of 100 Nordic companies, covering a variety of sectors, only 20% had what could be described as a focused innovation strategy.

When the green dimension is applied to the Innovation Radar, the percentage of participating companies with a focused ‘green’ innovation strategy decreased to only 7%. While not dramatically different to the figure for those working with a focussed approach to business model innovation, it does perhaps indicate that seeking to improve environmental sustainability offers additional complexities for those companies developing an innovation strategy.

When we consider the BMI companies’ primary innovation focus, using the Classic Innovation Radar’s four macro dimensions (i.e. offering, customers, operations and partnership), the primary focus, for over half of the participating companies, is ‘customer’ innovation (51%), followed by innovations relating to ‘offering’, ‘operations’, and finally ‘partnerships’, which is the primary focus for only 4% of all the BMI companies (Figure 5 – Part A). This primary focus on customer innovation is perhaps not surprising, given the industry focus on providing customers with quality service and a quality experience.

**Figure 5. Primary innovation orientations for BMI companies: classic Vs green Innovation Radar**



Source: Adapted from Nordic Innovation (2012) *Green business model innovation in the tourism and experience economy* report, developed in co-operation with the OECD Tourism Committee

However, when analysing the results from the Green Innovation Radar (Figure 5 – Part B), the most significant changes for participating companies take place within the customer dimension, where the focus decreases from 51% to 22%, and the partnership dimension, which increases from 4% to 33%. An analysis of classic versus green innovation radar results, therefore, indicates that the pursuit of greater environmental sustainability is a clear driver for ‘partnership’ innovation, and is also likely to generate new green ‘offerings’ (increasing from 30%-45%), although potentially at the expense of customer focus. Examples of partnership innovation demonstrated by participating BMI companies are outlined in Box 12.

### Box 12. Examples of partnership innovation

#### Austria

An illustrative example of what is meant by partnership innovation is clearly demonstrated in the case of the Austrian company 'Natur Hotel Chesa Valise', where the hotel owner dedicated time to establish co-operation with other local suppliers in the valley in order to make the entire value-chain sustainable. This process involved working with everyone from local farmers to super markets, and other hotels and tourism agents. In short, a transformation of the local ecosystem in order to brand the hotel as a clear cut case of sustainable tourism.

#### Mexico

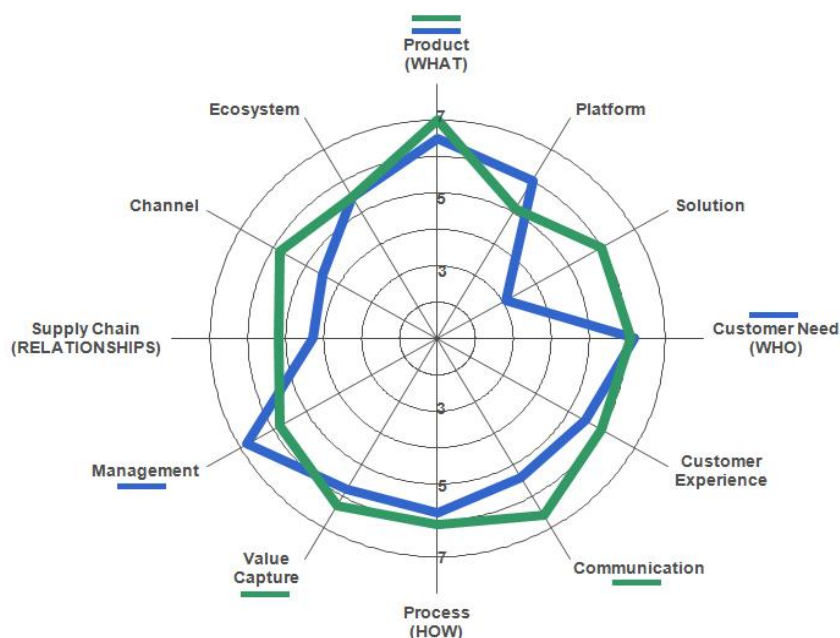
The Mexican case of Xcaret nature park is equally telling about the importance of partnership innovation and a greening industry profile. Xcaret nature park has from its start had a clear mission of preserving local flora and animal life. The nature park has made a conscious effort to educate employees, their families, students and other stakeholders in building a movement around the core values of sustainability and preservation, enabling the local community to share the benefits of a more sustainable approach to tourism. In this respect it has been necessary to innovate around the partnership dimension.

This increased focus on partnerships is supported by feedback from a majority of the companies in the BMI project who indicated that, in general, customers are not yet ready to pay extra for the delivery of environmentally sustainable products and services. On the other hand, it was revealed that many multinational companies increasingly ask for evidence of a green policy in connection with booking exhibitions or larger events. This suggests that at present, it may be easier to gain value capture from sustainable business offerings within business-to-business markets, and that this market will move more quickly towards implementing green business model innovation than business-to-consumer markets.

When companies were asked to identify the key drivers to green innovation for their company, the drivers mentioned most often were *i)* cost saving through process innovation, *ii)* scarcity of resources, such as water in areas such as in the south of Portugal and Mexico; and *iii)* a general motivation and determination to go 'green' by the company founders. When asked to identify the major barriers to pursuing green innovation, the most common responses were *i)* funding/money to implement changes; *ii)* customer reluctance to pay extra for green services, making it difficult to recover green investments; and *iii)* little or inadequate support mechanisms from government.

Examples of company innovation profiles produced as part of the BMI project are included in Box 13 and Box 14. Each profile includes a brief background on the participating company, an analysis of the green Innovation Radar results, and examples of green initiatives and outcomes of company efforts in relation to improving environmental sustainability. From the company's perspective, participation in the programme (including survey, workshops and analysis) enables managers and companies to obtain a better understanding of their current approach to green innovation, and how and where they might better differentiate their business products and services, thereby creating a competitive advantage in the market place.

### Box 13. Green innovation profile: Boutique Hotel Stadthalle, Austria



**Boutique Hotel Stadthalle:** This Austrian hotel was established in 2001 as the first passive hotel in the world. Has received many awards for eco-friendly and innovative concepts. High occupancy all year round, and marketed through word of mouth.

**Employees:** 37

**Internet:** [www.hotelstadthalle.at](http://www.hotelstadthalle.at)

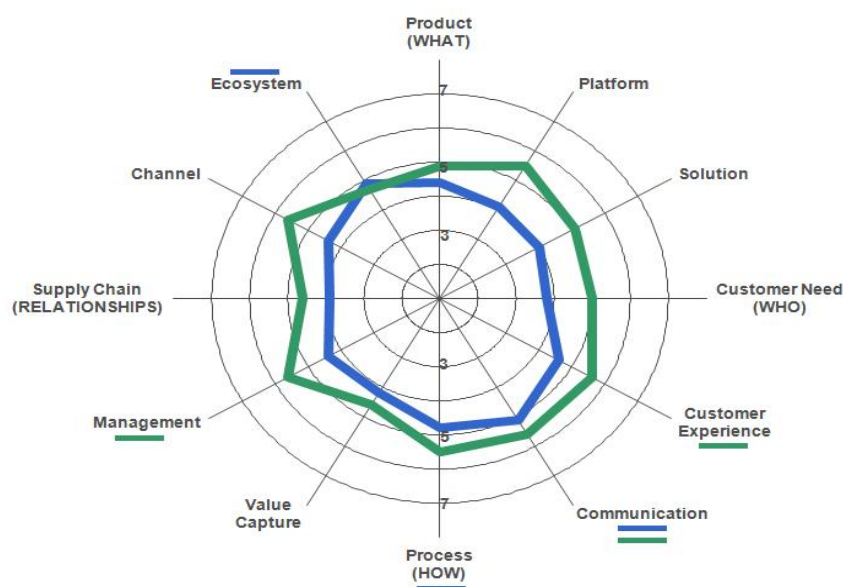
**Radar result:** The company has a high innovation level, with several peaks in the areas of management, product, platform and customer needs. The green innovation profile is strong with peaks in earnings model, solution and communication.

**Green initiatives:** The building is a zero energy building. This means that it does not consume more energy than it generates itself using solar cells, heat pumps and the like. Offers to charge guests' electric vehicles for free. Offers discounts to guests who choose eco-friendly travel. Rewards guests who behave in an eco-friendly manner during their stays. Uses local, organic food and rents out electric scooters. The employees are directly involved in the development of quality systems.

*Source:* Adapted from Nordic Innovation (2012) *Green business model innovation in the tourism and experience economy* report, developed in co-operation with the OECD Tourism Committee



#### Box 14. Green innovation profile: COEX, Republic of Korea



**COEX:** Founded in 1979, the company is a leading congress and exhibition centre in Seoul, South Korea. Has the largest underground shopping mall in Asia. Recently achieved silver level in the "Earth Check" certification system. Hosts very large events, such as the G-20 Seoul Summit in 2010.

**Employees:** 200

**Internet:** <http://www.coex.co.kr/eng/>

**Radar result:** High/moderate level of innovation. A number of small peaks around communication, partnership/ collaboration and process. No areas with very low innovation. Scores lowest on customer needs and supplier chain. The green profile has been incorporated into management, distribution channel, platform and customer experience.

**Green initiatives:** Has developed a management system that registers and analyses the consumption of gas, electricity, water, waste and recirculation. This has generated good environmental results – so good, in fact, that the system is also being sold to other operators. Increasingly uses green suppliers. Green training programme for employees and customers. The employees have developed a list of 20 green points for following up in everyday life.

*Source:* Adapted from Nordic Innovation (2012) *Green business model innovation in the tourism and experience economy* report, developed in co-operation with the OECD Tourism Committee

### Businesses tools to implement green business model innovation

It is generally accepted that within the tourism industry's value chain, large tour operators exercise a significant level of bargaining power over most hotels and destinations. In spite of the regular downward pressure on prices, tourism companies retain the ability to compete on innovations around the customer, partnership, and many of the other 12 dimensions of the Green Innovation Radar. This is the essence of business model innovation; the ability of businesses to differentiate their offer from competitors, and not only compete on price.



The question remains, however, just where businesses should start on the journey of embracing sustainable goals for their products, processes, management, and entire business model? Nordic Innovation experience in this and other sectors indicates that the management of most companies have at least an intuitive understanding of their current level of innovation maturity and relevant competencies, and where they would like the company to be in three years. In order to better understand their current competencies, Nordic Innovation have developed a self assessment tool to enable businesses to estimate maturity levels for green business model innovation, and better understand in what areas they need to develop competencies in order to reach their desired level on the ‘maturity ladder’ (Table 5).

**Table 5. Maturity levels for green business model innovation**

Level of Maturity	Competencies	Example
<b>Level 1:</b> Regulation driven	Few competencies needed	Reactive and primarily response is to regulations introduced
<b>Level 2:</b> Compliance driven	See new eco-regulation as an opportunity and tries to anticipate and be ahead of regulation. Skills to work with other partners at a basic level	More responsive and proactive viewing eco-regulation as inspiration for introducing new work methods and processes. Yet not systematically integrated in an innovation strategy.
<b>Level 3:</b> Production chain driven	Ability to understand entire value production process, know-how in life cycle management and technical skills for reducing wasteful processes.	Takes on a fairly systematic and proactive view to eco-regulation with a high focus on process innovation.
<b>Level 4:</b> New design or existing offerings redesigned for eco-friendliness	The know-how about how to scale both green supplies and production of new products/services. Reputation management and differentiated from ‘green-washing’.	Holistic approach to eco-issues integrating product, customer, process and partnerships innovation. Thoroughly redesigned around green innovation.
<b>Level 5:</b> Business model focus	Ability to make value capture from differentiation, customers, management and partnerships in ways that will change the basis for competition.	On top of having a holistic approach there is an integrated ability to monetize green investments.
<b>Level 6:</b> Creating new platforms	The know-how to synthesize business models, new technologies, regulations and market trends in ways that will enable customers and suppliers to operate in radically different ways.	Companies born with green innovation into the organisational DNA which is reflected in company culture, operations, offerings and value capture.
<b>Level 7:</b> Disrupting existing industries and developing entirely new ones	Organisation’s ability to abandon existing ‘cash cows’ and cannibalise existing offerings in the pursuits of tomorrow’s successes.	Will often appear as being radically cheaper attacking existing business from below and move up or start from a small corner of the expensive market and move downwards in price setting.

Source: Nordic Innovation (2012), Jørn Bang Andersen & Petra Nilsson- Andersen: Green business model innovation in the tourism and experience economy, Nordic Innovation 2012:08.

Furthermore, in an effort to enable quick progress on sustainable innovation, in line with the Innovation Radar framework, a series of questions aligned to the Innovation Radar's four macro-dimensions have been developed to help companies identify opportunities and pursue a more strategic and focussed approach to green innovation (Wolcott and Lippitz, 2010),<sup>6</sup> (Box 15).

#### **Box 15. Key business considerations for green business model innovation**

Businesses wishing to adopt a more strategic approach to green business model innovation can begin this process by asking themselves the question, "What is the strategic goal of our business in relation to environmental sustainability?" Other key questions they can address to enable quick progress on sustainable innovation, include:

'Offering' innovation:

- How will a green project or initiative affect the position of our existing products/services?
- Will the green initiative open up new possibilities for several offerings?

'Customer' innovation:

- Which of our existing customers are looking for greener solutions?
- How does this green concept affect the way we interact with customers in any context, e.g. buying, delivery, support or service?
- Will we need to educate existing or new customers and develop new markets and customers in order to succeed?

'Operational' innovation:

- Does this green improvement offer opportunities to enhance internal business processes to reach higher levels of operational effectiveness in this or other parts of our business model?
- How might the company's supply chain be affected by this green investment?

'Partnership' innovation:

- How could we better serve specific customers and target green customer segments?
- What opportunities exist to develop collaborative relationships to create joint offerings?
- What types of alternative channels might we consider to best deliver our new green product or service to customers?

Source : Adapted from Wolcott and Lipitz (2010)

<sup>6</sup> Green elements added to questions developed by Wolcott and Lippitz (2010).

## Policy Conclusions

Business models can only contribute to systemic innovation if they are widely diffused and scaled up. At the same time, however, green innovation business models themselves may be one of the factors changing economy and society, e.g. in triggering the emergence of new production and consumption patterns.

Four types of policy measures can have a direct or indirect influence on green innovation business models, even if in most cases they do not target business models explicitly (OECD, 2012):

- *Regulatory and market based instruments*, including eco-tax, carbon tax, cap and trade schemes and removal of harmful subsidies can provide incentives for the development of green innovations.
- *Supply side measures*, such as support for R&D, business development, testing and demonstration, provision of training, information and advisory services.
- *Demand side measures*, including performance standards, green labelling and certification, and public procurement.
- *Cross-cutting measures*, such as support for networks, route-mapping and scenario development.

In addition to the links with sustainability policy, the analysis of business models also has important links to entrepreneurship. New and young firms are more likely to exploit technological or commercial opportunities that have been neglected by more established companies, often because radical innovations challenge the business models of existing firms. Policy, therefore, needs to create the room for such new firms to enter, exit and grow, ensuring fair competition and improving access to finance, which remains a major constraint.

### *OECD/Nordic Innovation Green Business Model Innovation project*

Many of the non-Nordic companies participating in the BMI programme clearly indicated that they were not aware of any public sector policies and/or programmes designed to support green innovation in tourism. More than 2/3 of the companies could not identify, or had difficulties identifying green support policy programmes.

However, many companies expressed the need for governments to incentivise green innovation in tourism, for instance through the tax system. From the perspective of participating companies, governments do not demonstrate a strong understanding tourism company needs, and as a result are currently unable to support and stimulate green innovation measures effectively within the tourism industry.

Given the limited knowledge concerning government support programmes to strengthen competitiveness of enterprises through green innovation business models, there seems to be a clear opportunity to better promote such programmes through more effective communication, both directly to businesses and via industry associations.

The BMI findings have shown that once companies embark on the journey of green business model innovation, opportunities relating to partnership innovation increase substantially. In response, governments could develop measures to strengthen business competencies necessary to develop effective partnerships and in doing so help businesses, in the short term, to monetise green investments and strengthen the green innovation ecosystem at all levels.

However, and despite the difficulties reported by companies to pursue customers to pay extra for green products and services, policy makers should ensure that the value of the ‘customer’ focus is not lost in any response initiative, as it remains the core business of most companies. One approach might be for governments to identify how they can more effectively promote the benefits associated with adopting and supporting green innovation, and implementing consumer education initiatives and other resources necessary to create innovation friendly conditions.

Finally, in enhancing the companies’ work with sustainability, governments should consider developing tailor made programmes designed to assist companies to move up the maturity ladder of green business model innovation. This might be achieved by developing an inventory of the current level of green business model innovation ‘maturity’ within a specific region (based on maturity levels outlined in Table 5), and using such an inventory to assess the need for tailored government innovation support programmes. Such an approach would require governments to speak to tourism businesses, in order to determine their current level of maturity in relation to green business model innovation, and what level they would like to reach in the short to medium term. Such an inventory would be relatively simple to develop, and would enable governments to create programmes that could support tourism company efforts to improve their environmental sustainability.

## CHAPTER 4 – DRIVERS AND BARRIERS TO GREEN INNOVATION IN TOURISM

### Introduction

As discussed in Chapter 1, on the supply-side, many of the enabling conditions for innovation are the same whether concerned with green innovation or innovation more generally. The fundamental drivers and barriers are similar and green innovation thrives in a sound environment for overall innovation. However, the rate and pattern of green innovation is also heavily influenced by other factors, notably the environmental policy framework.

The OECD's *Toward Green Growth* report highlights that boosting green innovation benefits from market signals, such as market instruments, that address the externalities associated with environmental challenges. Such signals enhance the incentives for firms to adopt and develop green innovations, and help to indicate the commitment of governments to move towards greener growth. They also enhance efficiency in allocating resources by establishing markets for green innovation, and will lower the costs of addressing environmental challenges.

Environmental regulations (and taxes) and market demand have been identified as perhaps the main drivers of innovation for green growth. From a tourism perspective, UNEP and the UNWTO have identified a range of drivers for sustainable tourism investment decisions including: consumer demand; reducing operational costs and increasing competitiveness; coherent policies and regulations for environmental protection; technology improvements; and natural resource conservation (UNEP and UNWTO, 2011, p. 431).

However, a cross-cutting barrier to greener or more sustainable tourism investment and innovation would appear to be a lack of understanding and recognition of the value created for companies, communities and destinations from the greening of tourism.

Utilising the results from the country survey on green innovation in tourism (and the joint OECD/Nordic Innovation Business Model Innovation project, this chapter seeks to identify, from both a government and industry perspective, the key drivers, barriers and success factors associated with the diffusion of green innovation in tourism.

### Overcoming barriers: enabling conditions

In the recent *Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication* report, UNEP and UNWTO identified a set of enabling conditions required for increased investment in green or sustainable tourism development, to overcome barriers relating to *i*) increasing industry engagement; *ii*) greener destination planning; *iii*) fiscal and government investment policies; *iv*) access to finance; and *v*) increasing local contribution. Examples of key enabling conditions identified by UNEP are outlined below:

- Increasing industry engagement – Reaching out to the high number and wide variety of SMEs that dominate the tourism industry is a difficult task; however, their engagement is a necessary condition for a sustainable industry. While many larger corporations actively address their

environmental and social impacts, SMEs tend to be more reactive to addressing environmental issues. Nevertheless, increasing pressure from consumers could force them to address more impacts in order to remain competitive.

- Enabling conditions for increased industry engagement include *i)* Tourism products such as parks, protected areas and cultural sites should be linked more closely with marketing positions to ensure a consistent and unique selling position based on high-value experiences at natural and cultural sites; *ii)* Mechanisms and tools to educate SMEs are critical and should be accompanied by concrete, actionable items; *iii)* The increased use of industry-oriented decision-support tools would help accelerate the adoption of green practices; *iv)* The promotion and widespread use of internationally recognised standards for sustainable tourism, such as the Global Sustainable Tourism Criteria (GSTC), supported by information sharing and access to experts, is a critical step; and *v)* Economies of scope and scale in the tourism sector could be achieved by means of clustering. Clustering can strengthen backward and forward linkages in the tourism value chain and drive sustainability in the whole industry. Active collaboration with the public sector and community organisations will strengthen competitive position for the entire cluster.
- Greener destination planning – Destination planning and development strategies will be a critical determinant for the greening of tourism. Advancing greening goals through tourism planning and destination development requires the ability and institutional capacity to integrate multiple policy areas; consider a variety of natural, human and cultural assets over an extended time frame; and put in place the necessary rules and institutional capacity. A destination cannot successfully implement a green tourism strategy without the right laws and regulations in place, or the right governance structure to oversee them.
  - Enabling conditions for greener destination planning include *i)* Government, community and private tourism authorities must establish mechanisms for coordinating activities with ministries responsible for the environment, energy, labour, agriculture, transport, health, finance, security, and other relevant areas; *ii)* Tourism strategy developers should make greater use of credible scientific methods and tools encompassing economic, environmental and social approaches and assessments for sustainable development; *iii)* Environmental and social issues must be included in Tourism Master Plans and/or Strategies to better manage critical assets and promote greener outcomes; *iv)* A coherent destination planning policy is necessary to create a sound international reputation; and *v)* Assessment of carrying capacity and social fabric should be considered to take into account external and internal impacts of tourism at the destination level.
- Fiscal and government investment policies – The greening of tourism will require a more sophisticated use of instruments, such as fiscal policy, public investment, and pricing mechanisms for different public goods. From a national perspective, sustainable tourism policy should address market failures in a consistent manner, avoiding the creation of additional distortions through government interventions. In the case of sustainable tourism policies, more coherence in terms of targets, management and incentives, is required to maintain competitive advantages.
  - Enabling conditions in fiscal and government investment policies include *i)* Periodical evaluations and impact analysis of tourism incentives, from an economic, social and environmental perspective, should be conducted to ensure that policy interventions continue to create positive externalities for society; *ii)* Defining and committing to critical government investments in the “green enabling environment” can play a positive

role in determining private sector investment decisions towards greener outcomes; *iii*) Appropriate taxation and subsidy policies should be framed to encourage investment in sustainable tourism activities and discourage unsustainable tourism; *iv*) Tax concessions and subsidies can be used to encourage green investment in destinations and facilities; and *v*) Establishing clear price signals can orient investment and consumption.

- Access to finance – In many cases, barriers to environmental and social investments are based on misperceptions or lack of knowledge. For example, for many green investments, payback periods and amounts are not clearly established, creating uncertainty for banks or other investors, while calculating returns can be complicated by the inclusion of components such as “guest satisfaction”, the value of which is often more difficult to quantify.
  - Enabling conditions for finance include *i*) Improving private sector awareness of the value of green investment, and increasing policy coordination with Ministries of Finance and regulatory authorities; *ii*) Establishing regional funds for local tourism development could help overcome financial barriers for green investments where investments also generate public returns; *iii*) Mainstreaming sustainability into tourism development investments and financing; and *iv*) Establishing partnership approaches to spread the costs and risks of funding sustainable tourism investments. Examples include, sliding fees, favourable interest rates, and in-kind support (technical, marketing, or business administration), while loans for sustainable tourism projects could be set up with guarantees from aid agencies and private businesses, lowering risk and interest rates.
- Increasing local contribution – Sustainable tourism offers opportunities to increase not only the local economic contribution from tourism, but also investment in local communities. Capitalised and formalised businesses in the tourism value chain enhance local economic opportunity (through employment, local contribution and multiplier effects) while also enhancing local competitiveness as a result of tourists demanding greater local content.
  - Enabling conditions for increasing local contribution include *i*) Strengthening tourism value chains to back SME investment. For example, long-term contracts for products and services to hotels or other “anchor” businesses can create suitable conditions, and simple mechanisms to monitor performance; *ii*) Expanding the use of solidarity lending mechanisms can enable groups of local suppliers to access credit and build capital; *iii*) Enhancing development bank access to individuals and small businesses that are not eligible for credit, or are involved in the provision of public services; and *iv*) Establishing seed funds to enable new green industries to develop locally.

### Drivers and barriers in OECD member countries

In addition to seeking information on general approaches to supporting green innovation in tourism, the country survey on green innovation in tourism sought to identify and describe the main drivers and barriers to increased green innovation in the sector. As outlined previously, examples of drivers for non-sector specific green innovation include, a sound environment for innovation in general, the environmental policy framework, and the presence of clear and stable market signals, such as carbon pricing. An analysis of tourism specific country responses allows for a comparative analysis of government views, and to identify coherence, or otherwise, with non-sector specific drivers and barriers identified previously. A review of responses is outlined below.

### *A government perspective*

From the twenty-seven country responses reviewed, twenty-five nominated one or more key *drivers* for green innovation in tourism. Responses ranged from a general or whole of government policy approach with an environmental or sustainability focus, to a combination of factors including incentives for business take-up; consumer and industry education on the benefits associated with adopting more sustainable business practices; and initiatives to increase consumer demand for tourism products and experiences that demonstrate green credentials.

More specifically, an increasing environmental focus was the most commonly nominated driver (seventeen countries), followed by growing consumer demand (ten countries). Other drivers identified as being key by four or more countries included political commitment (six countries); the business case for green innovation, education, sound innovation policy, and incentives (five countries each); and industry co-operation (four countries) (see Table 6).

**Table 6. Drivers for green innovation in tourism**

<b>Drivers</b>	<b>Number of countries</b>
Environmental focus	17
Consumer demand	10
Political commitment	6
Business case	5
Education	5
Sound innovation policy	5
Industry co-operation	4

Source: OECD Survey on green innovation in tourism, 2011-2012.

When considering current *barriers* to green innovation in tourism, twenty-four countries nominated one or more factors with the capacity to hinder the introduction of new or significantly improved products, processes or methods to improve environmental sustainability. As with drivers, responses ranged from a single identified barrier to a mix of several barriers.

The barrier nominated most often by countries related to business and/or consumer information gaps relating to the potential environmental implications of taking no action, and the potential financial and environmental benefits associated with adopting more sustainable practices, including for example, the more efficient use of water, or switching to renewable energy sources (fifteen countries). This was followed by the potential or perceived investment cost for businesses (primarily SMEs) to develop or adopt initiatives to improve environmental performance (thirteen countries).

Other barriers identified by four or more countries include, consumer reluctance to pay a premium for more environmentally friendly products or services (eight countries), budget constraints, where there are competing priorities in a difficult economic environment (seven countries), a lack of industry capacity to deliver green innovation (six countries), and a lack of available finance where there is a commitment to pursue green innovation (four countries) (see Table 7).



**Table 7. Barriers to increased green innovation in tourism**

Barriers	Number of countries
Information gaps (business or consumer)	15
Investment cost	13
Consumer reluctance	8
Budget constraints	7
Industry capacity	6
Access to finance	4

Source: OECD Survey on green innovation in tourism, 2011-2012.

Examples of specific country responses in relation to key drivers and barriers to green innovation are outlined below.

#### *Australia*

A key driver for green innovation in tourism is the presence of a sound policy environment within which the industry can operate. In this regard, the Australian Government has in place the following:

- the National Long Term-Tourism Strategy;
- the national climate change policy “Securing a Clean Energy Future”;
- policies and legislation aimed at protecting Australia’s natural environment and heritage, and promoting a sustainable way of life; and
- the Framework of Principles for Innovation Initiatives to enhance consistency and improve the overall accessibility and efficiency of government innovation initiatives across Australia

Barriers to green innovation in general can include limitations in human, financial and business resources that result in barriers to knowledge transfer; reduced capacity building; financial constraint; policy and programme fragmentation; inadequate incentive structure and/or less effective targeting of regulation (Box 16). In addition within the tourism industry the predominance of small businesses with a limited capital and human resource base, can present a significant barrier to the development and adoption of innovation within the industry.

**Box 16. Australia: Barriers to innovation in tourism**

Tourism Victoria (Australia) has identified a range of barriers to innovation in tourism and while general in nature, they are equally relevant for green innovation:

- Overcoming the inherently conservative nature of the tourism industry, which can inhibit risk taking and the development of new mindsets;
- The need for industry operators to understand that innovation can result in bottom-line benefits and can create significant product differentiation;
- Gaining broad acceptance that innovation requires a systematic approach to continual improvement and involves new ways of examining issues;
- Diminishing a common belief that innovation equates to new technology and invention, while communicating that it can also include business practice and processes; and
- Dispelling perceptions that innovation is just about 'breakthrough' concepts, and conveying that it more often involves incremental improvement and 'value-adding' change.

*France*

All human activity, whatever it may be, generates greenhouse gas emissions, either directly or indirectly. Accordingly, all businesses and all administrative and non-profit activities should closely examine the emissions they generate. In order to act, it is necessary to take stock so as to ascertain the available leeway. To assist in this respect, the French Environment and Energy Management Agency (ADEME) has for several years now been offering carbon inventories (Bilans Carbone®) to quantify greenhouse gas emissions for any organisation: industrial or service enterprises, administrations, municipalities and other local governments, using a method that entails compulsory training in the tool's acquisition and use.

*Greece*

In addition to the obvious environmental benefits of adopting a more sustainable approach to the delivery of tourism services, the main drivers for green innovation in tourism in Greece include the marketing added-value of the implementation of "green" projects, and the reduction in operational costs due to the implementation of energy efficiency/renewable energy projects, water conservation measures, and waste management projects.

Within the context of the current financial crisis, the main barriers for the implementation of green innovation projects include *i*) a hesitancy to invest, in the light of the situation of economic instability of the Greek market; *ii*) difficulty to self-finance projects; and *iii*) difficulty to obtain competitive loans from national banks, due to the reduced liquidity of Greek banks.

Due to the above, the Hellenic Ministry of Culture and Tourism is implementing the "Green Tourism" programme that provides state aid subsidies (40% of the cost of the project) for the implementation of "green" actions in the tourism sector (Box 17).

### Box 17. Hellenic Green Tourism programme

The Hellenic Ministry of Culture and Tourism is currently co-ordinating a “Green Tourism” programme that provides state aid subsidies, equating to 40% of the cost of the project, for the implementation of “green” actions in the tourism sector. Within the context of the programme, the eligible actions include: energy efficiency measures, implementation of renewable energy projects, waste management, recycling, water conservation, and implementation of environmental certification schemes.

#### *Hungary*

The first driver is the condition of the natural environment and the general health of residents. Hungary's natural heritage and values need to be protected in an increasingly efficient manner by enjoying them in an environmentally friendly manner. Other drivers include:

- A concerted awareness raising campaign, emphasising the potential positive impacts of green innovation. The implementation of such an awareness raising campaign remains a challenge in Hungary.
- Financial support available through the New Széchenyi Development Plan to support practical tourism initiatives in the areas of “Healing in Hungary - Health Industry”, and the “Renewal of Hungary - Development of Green Economy.”
- Membership in the European Union, which has as one of its most important aims, the building of a sustainable and competitive economy in Europe.

#### *Mexico*

The key barriers to green innovation in Mexico are:

- The limited budget available in public expenditures to promote the implementation of green innovations.
- 95% of the country's companies are small and medium-size enterprises that do not have economic resources to invest in environmental technology.
- At the municipal level, there is a significant educational deficiency, which causes ignorance of the concept of green innovations, its benefits, and how they can implement better practices in the enterprises.
- There are no effective mechanisms of promotion to help increase the coordination of companies and destinations to support the green innovations programmes of the federal government.

#### *Netherlands*

The Ministry of Economic Affairs, Agriculture and Innovation does not have specific programmes that support green innovation in tourism, however, the tourism industry can access the generic programmes of the government that support green innovation. As such, green innovation policy in general is identified as a key driver for green innovation in tourism (implying a sound innovation environment with an environmental focus).

### *New Zealand*

A key driver to green innovation in tourism is the 100% PURE New Zealand tourism brand. The 100% PURE brand portrays an image that is easy for tourism businesses to identify with and to strive towards.

Many tourism businesses are carrying out innovative actions to support the 100% PURE brand, primarily based around conservation, cultural and social actions. Companies such as Whale Watch Kaikoura and Maungatautari Ecological Trust are good examples of innovation in tourism.

- Whale Watch Kaikoura is an internationally recognised sustainable tourism operator (<http://www.whalewatch.co.nz/conservation>).
- Maungatautari Ecological Trust is a mainland island wildlife sanctuary. Efforts to remove pests from mainland New Zealand sanctuaries have led to new innovations and have enabled the development of world-class visitor experiences (<http://www.maungatrutrust.org>). New innovations include:
  - pest-proof fences (Xcluder fences <http://www.xcluder.co.nz/fence-design.html>); and
  - pest eradication tools (<http://www.predatortraps.com/> and <http://www.goodnature.co.nz>),

Qualmark, New Zealand's quality assurance and environmental accreditation programme for the tourism sector, supports and encourages businesses to improve their environmental performance in the following areas: energy efficiency, waste management, water conservation, conservation and community.

The tourism sector is fragmented and largely defined by SMEs, and as a result, a key barrier to adopting green innovation in the sector is a lack of strong market drivers that support the economic case for investment. In addition, as is the case more broadly across the economy, tourism SMEs face both financial and other resource and capability constraints. The perception is widespread that green innovations would be costly with little compensating benefits. The adoption of environmental management systems or product life cycle management standards (even if limited in scope), are currently viewed in terms of compliance costs rather than their potential to enhance productivity.

### *Norway*

During the development of the "Sustainable Tourism 2015" project from 2008 – 2010, participating stakeholder groups identified specific measures to increase green innovation and sustainable actions in tourism. Suggestions included regulatory actions that were perceived as fair and made everyone contribute, green taxes, and greater competition in the delivery of transport. In general they argued for more visible and clear policies and regulations, subsequently followed by funding.

However, for many of tourism SMEs in Norway the major barrier hindering efforts towards more green innovation is the capacity, in knowledge, ideas, skills and financing, to do so. In response, Innovation Norway provides knowledge-building courses, marketing efforts (Green Travel) and prizes to encourage green innovations, whilst acknowledging that much more needs to be done. For example, Innovation Norway is currently working to find good solutions to further encourage green innovation at the destination-level to ensure that responsibility is taken by the destination and its stakeholders, not just individual enterprises. One such solution might be the development of a whole-destination certification scheme.

### *Portugal*

Major barriers to green innovation in tourism in Portugal include the current lack of co-operation between enterprises and the knowledge sources, and as a result, the creation of networks or clusters of innovation is crucial.

A second area is related to the business dimension and the lack of resources in SMEs to adopt enabling technologies for green innovation. Creating an organisational environment leading to innovation and training of entrepreneurs and human resources is a mix that plays an important role.

Finally, the availability of funding is a major barrier and the need to develop mechanisms to support green innovation, possibly involving risk capital or other forms of financial innovation, is essential.

### *Romania*

Sustainable development is a priority emphasised by the environmental and tourism policy framework, indicating that a general environmental focus is considered important.

### *Slovenia*

The main driver of green innovation is a favourable, innovation-friendly development environment. The Slovenian development environment currently favours technological innovations in SMEs over non-technological innovations, or those focussing on environmentally-friendly outcomes. However, the establishment of the central government service for climate change in the Republic of Slovenia (the Government Office of the Republic of Slovenia for Climate Change) is seen as a key factor in enabling a more comprehensive and uniform approach to “green innovation” in the future, both in the sector of tourism and in all “green tourism” related sectors. The new government service’s competence is the national co-ordination and synchronisation of different sectoral governmental policies of sustainable development, with the priority target of a reduction of CO<sub>2</sub> emissions and the negative consequences of climate change in different economic sectors.

Despite the generally innovation-friendly environment in both the business and public sectors, Slovenia lacks synchronised and goal-oriented public strategic objectives and incentives for “green innovation”. As a consequence, the business sector’s response to eco innovation could be improved. Due to the economic crisis and reduced operating costs, independent initiatives of the business sector bringing an innovative approach to the environmental issue are rare. As a result, an increase in green innovation in tourism and other economic sectors requires a more favourable political and business environment, thus enabling tourism businesses to focus more on developing new green tourist products and services.

### *An industry perspective*

When companies were asked, as part of the OECD/Nordic Innovation joint project on business model innovation in tourism, to identify the key drivers and barriers to implementing green innovation initiatives, the drivers mentioned most often were *i*) cost saving through process innovation, *ii*) necessity as a result of scarce natural resources (e.g. water in areas such as in the south of Portugal and Mexico); and *iii*) a general motivation and determination to go ‘green’ by the company founders. When asked to identify the major barriers to pursuing green innovation, the most common responses were *i*) funding/money to implement changes; *ii*) customer reluctance to pay extra for green services, making it difficult to recover the cost of green investments; and *iii*) little or inadequate support mechanisms from government.

### Success factors for green innovation in OECD countries

In the context of green innovation, while drivers and barriers can be described as those factors able to motivate, shape, or even retard innovation efforts, success factors are the conditions necessary to enable or promote the innovation process.

When asked to identify the success factors for the effective implementation of government policies and/or programmes to facilitate green innovation in tourism, twenty-one countries identified one or more. The factors most often nominated as needing to be in place to successfully facilitate green innovation in tourism were industry co-operation, horizontal integration and buy-in or support from stakeholders (each mentioned by twelve countries) (see Table 8).

**Table 8. Success factors for green innovation in tourism**

Success factors	Number of countries
Industry co-operation	12
Horizontal integration	12
Stakeholder support	12
Political commitment	9
Education (consumer/industry/education)	7
Incentives	5

Source: OECD Survey on green innovation in tourism, 2011-2012.

Other success factors nominated by four or more countries included political commitment (nine countries), followed by improved consumer, industry and tertiary education (seven countries), and incentives to encourage adoption of more sustainable practices (five countries). Examples of specific country responses in relation to success factors are outlined below. It is perhaps encouraging to note that from the government perspective, of the top four conditions considered necessary to enable green innovation in tourism, none are simultaneously considered key barriers (Table 7). However, the perceived importance of education and incentives, might also be considered a reflection of several identified and related barriers, including information gaps, consumer reluctance, and industry capacity; and investment cost, budget constraints, and access to finance, respectively, highlighting potential areas to focus government policy responses.

#### *Austria*

Success factors identified by Austria include:

- Incentives and subsidies;
- Consumer education;
- Co-operation with the industry and industry associations;
- Inclusion in tourism education curriculum;

- Whole of government approach (energy, transport, environment, innovation, etc.); and
- Working closely with stakeholders.

### *Germany*

Germany's tourism policy forms part of the German government's economic policy and is therefore under the lead responsibility of the Federal Ministry of Economics and Technology. Government funding to enhance the performance and competitiveness of the German tourism industry places a particular priority on fostering innovative products and sustainable projects.

The following factors are considered particularly important for ensuring the success of green innovation in Germany's tourism sector:

- The German government has adopted a participatory approach to the development and promotion of sustainable tourism. The sustainable development of the tourism sector can be achieved in the long term only if all stakeholders are involved in the process.
- In addition to fulfilling legal requirements, the German government places a high priority on voluntary action and the assumption of a high level of responsibility by all stakeholders when it comes to the protection of the environment, natural habitats and the climate.
- Furthermore, the government has established a range of suitable incentive systems and communicates these to the public and industry (*e.g.* the Federal Biodiversity Programme and the Renewable Energies Act).

### *Greece*

Policies and programmes that facilitate green innovation in tourism are generally developed and managed by the Hellenic Ministry for Culture and Tourism; however, in order for these initiatives to be effective, the following key success factors should be sought and implemented:

- Horizontal coherence between the relevant Ministries (*i.e.* Ministry of Culture and Tourism, Ministry of Environment, Ministry of Development).
- Inter-departmental collaboration within the Ministry of Culture and Tourism.
- Collaboration with the Hoteliers, Tourism and other Professional Associations and Bodies.
- Collaboration with Non-Governmental Organizations that promote similar actions (*e.g.* WWF, Greenpeace etc.).

### *Japan*

Some of the key success factors relating to the delivery of green subsidy systems accessible by tourism businesses include ensuring a collaborative approach with local stakeholders, and ensuring that the co-benefits and added values of green innovation in tourism are well known.

## *Slovenia*

Besides the response of the public sector to the economy's needs, the key factors in the successful facilitation of "green innovation" are the close co-operation and co-ordination of sustainable sectoral policies with an impact on tourism (horizontal coherence); the synchronisation of development objectives and implementing measures of different sectoral policies; an innovation-friendly political and business environment and the availability of financial, fiscal, research, educational and other resources necessary to increase innovation friendly conditions in different economic sectors, including tourism.

The Bank of Tourism Potentials as well as the Slovenian Tourist Board's 'Sower' and 'Weaver' Awards (designed to stimulate creativity and innovation in Slovenian tourism) are unique examples of public-private initiatives supporting the promotion of innovation in the tourism sector (Box 18).

### **Box 18. Slovenia: Recognising and Financing Innovative Tourism Projects**

The Ministry of the Economy and the Slovenian Tourist Board has launched three projects oriented toward innovation, productivity and quality-based growth in Slovenian tourism. The first, the Sower award is a competition created for tourism SMEs, which aims to stimulate creativity and innovation in Slovenian tourism. The second is the Weaver Award, dedicated to very early stage creativity and innovation in the development of competitive products and services by SMEs, destinations, resorts etc. The third project is the foundation of the Bank of Tourism Potentials of Slovenia (BTPS). With the BTPS, Slovenia aims to support the realisation of excellent and innovative ideas that need financial support or an investor.

The BTPS invites everyone who has "€-nergy" to offer (*i.e.* financial resources but also material resources and labour) and invites everyone who has "i-deas" to offer, to deposit either ideas or financial resources at this special bank account. These "i-dea deposits" in a BTPS bank account will help to make tourism in Slovenia better, more successful and more original. Clients who agree to the general operating conditions of the BTPS are presented to the public in a discreet manner. Potential customers, partners, funders – anyone interested in a particular deposit – can advertise. This ensures that compatible pairs of providers and customers/investors are brought together, while guaranteeing appropriate protection for their business secrets.

## *Switzerland*

The successful implementation and execution of the principles of sustainable development in tourism policies depends on a number of factors and the interaction of these factors. A clear commitment to a sustainable tourism policy in the highest echelons of politics is of outstanding importance, as this gives the issues weight and conviction, essential for the implementation of a sustainable tourism policy.

Sustainability touches all areas of tourism policy as a key cross-sectional issue and requires the establishment of the concept and strategy of sustainability in tourism policies.

Alongside political commitment, strategic establishment, targeted implementation and transparent communication, the success of a sustainable tourism policy depends on the co-ordination of sectoral policies and co-operation with the tourism industry. Owing to its cross-sectional character, the development and success of tourism is affected by a number of policy areas. A sustainable tourism policy can only be pursued if it is possible to co-ordinate the various sectoral policies.

Operational co-operation with the tourism industry is needed to ensure that the tourism policy has its desired effect. Ultimately it is the tourism companies themselves that are responsible for the sustainable development of the tourism industry



## Summary of key issues and findings

Many of the fundamental drivers and barriers for innovation and green innovation are similar.

Examples of non sector-specific drivers include, a sound environment for innovation in general, the environmental policy framework, and the presence of clear and stable market signals or instruments addressing the externalities associated with environmental challenges. Such signals enhance the incentives for firms to adopt and develop green innovations and indicate a government commitment towards greener growth.

Some of the main drivers towards sustainable tourism investment decisions are consumer demand changes; business actions to reduce operational costs and increase competitiveness; coherent policies and regulations for environmental protection; technology improvements; private efforts for environmental and social responsibility and natural resource conservation. However, a cross-cutting barrier is the lack of understanding of the value created from the greening of tourism.

A set of enabling conditions is required for increased investment in green or sustainable tourism development, to overcome barriers relating to *i*) increasing industry engagement; *ii*) greener destination planning; *iii*) fiscal and government investment policies; *iv*) access to finance; and *v*) increasing local contribution.

Results of the survey on green innovation indicate that of the twenty-seven OECD member and non-member countries that responded:

- Twenty-five nominated one or more key *drivers* for green innovation in tourism ranging from a whole of government policy approach with an environmental or sustainability focus, to a combination of factors;
  - Apart from an increasing environmental focus (17 countries), consumer demand was identified as a key driver by ten countries. Interestingly, a sound innovation policy environment, education, and the business case for green innovation, were all mentioned by only five countries;
- Twenty-four countries nominated one or more *barriers* to the introduction of new or significantly improved products, processes or methods to improve environmental sustainability;
  - The barrier nominated most often by countries related to business and/or consumer information gaps relating to the potential environmental implications of taking no action, and the potential financial and environmental benefits associated with adopting more sustainable practices (15 countries). This was followed by the potential or perceived investment cost for businesses (primarily SMEs) to develop or adopt initiatives to improve environmental performance (13 countries); and consumer reluctance to pay a premium for more environmentally friendly products or services (eight countries)
- Twenty-one countries identified one or more *success factors* for the effective implementation of government policies and/or programmes to facilitate green innovation in tourism;
  - The factors considered necessary to successfully facilitate green innovation in tourism were industry co-operation, horizontal integration and buy-in or support from stakeholders (each mentioned by 12 countries);

- Other success factors nominated by four or more countries included political commitment (nine countries), followed by improved consumer, industry and tertiary education (seven countries), and incentives to encourage adoption of more sustainable practices (five countries).

From an industry perspective, results from the OECD/Nordic Innovation BMI project, were generally in line with country survey responses; although the priorities, perhaps not surprisingly, focussed more on the likely financial implications (both positive and negative) associated with implementing green innovation initiatives. For example, the driver mentioned most often by company managers was cost saving through process innovation; followed by necessity, as a result of scarce natural resources (e.g. water in areas such as in the south of Portugal and Mexico); and a general motivation and determination to go ‘green’ by the company founders. Similarly, the barriers most often mentioned were funding/money to implement changes; customer reluctance to pay extra for green services; and little or inadequate support mechanisms from government.

From the results of the country survey, there appears to be a slight in-coherence between government perceptions of consumer demand as a driver for green innovation in tourism, and the industry perception (highlighted by the findings of the BMI study), that customers are generally reluctant to pay a premium for more environmentally friendly products or services. This combined with other identified barriers relating to business/consumer information gaps and perceived investment costs for SMEs, indicate a potentially important role for governments to play in better educating the public and tourism businesses as to the environmental and financial benefits associated with adopting and supporting green innovation.

Similarly, the perceived role of education and incentives as factors for success, might also be considered a reflection of several identified and related barriers, including information gaps, consumer reluctance, and industry capacity; and investment cost, budget constraints, and access to finance, respectively; thus highlighting potential areas of focus for government policy responses.

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