

New metrics for the balanced measurement of societal well-being: Towards integrating tourism and sustainability satellite accounting

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“If You Can’t Measure It, You Can’t Manage It”

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Abstract

In a recently published book, *Green Growth & Travelism – Concept, Policy & Practice for Sustainable Tourism* (Routledge, May 2014), the co-authors of this article assert that “[t]he 20-year-old databases painstakingly developed by UNWTO, WTTC and OECD for measuring the sector are inadequate for the green-growth transformation ahead. Traditional metrics are limited in scope ... an essential prerequisite is to begin measuring impacts and reducing them as a fundamental component of growth strategies. Linking sustainability satellite accounting and tourism satellite accounting is a key to developing coherent metrics”.

This paper elaborates on why this is fundamentally important. It does so from the vantage point of the travel and tourism sector and in the context of the coalescing green growth and sustainable development frameworks. The paper traces the trade and economic significance of the liberalising, globalising and hyper-connected travel and tourism sector, as well as escalating environment, poverty, population and resource imperatives. In the process, it highlights the disruptive and cross-cutting impacts of climate change, as well as the growing requirement for the management of change, not least against national carbon commitments, destination carrying capacity, human development indicators, local lifestyle qualities, gross national happiness and the like.

A key observation is that data for the economic pillar of sustainable development are deeply entrenched at international, national and local levels: There are well-established definitions, standards and procedures for measurement and reporting. These are well defined in input/output tables, national accounting systems, United Nations (UN) and Organisation for Economic Cooperation and Development (OECD) statistical programmes, public policy dialogue and education programmes. However, this is not the case for measuring and reporting on the social and environmental pillars of sustainable development. Nevertheless, the emerging multilateral sustainability, poverty and climate programmes are dramatically accelerating the process of mainstreaming these sustainable-development considerations.

In service-based sectors such as the environment and travel and tourism, satellite accounting is a viable common denominator. The paper examines how work has evolved in these areas. Reasons are identified for urgently initiating, extending and prioritising the integration of tourism and sustainability satellite accounting. In this context, the need for ‘cross-silo’ collaborative action, with meaningful public, private and civil society engagement, is underscored.

Key Conclusions are :-

- It is now imperative to measure and acknowledge Tourism (Travelism) impacts in the same way as benefits have been measured and identified over the past 2 decades.
- Linking Tourism and Environment Satellite Accounting mechanisms is a key factor
- OECD should take a formal position to engage with UNWTO, WTTC, UNEP and other stakeholders from public, private & civil society sectors to advance this matter urgently.

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List of abbreviations and acronyms

CGE	computable general equilibrium
COP	Conference of the Parties
CSR	corporate social responsibility
Eurostat	Statistical Office of the European Union
EU	European Union
GDP	gross domestic product
GHG	greenhouse gas
GNH	gross national happiness
ICCA	International Congress & Convention Association
ILO	International Labour Organisation
I-O	input-output
JPOI	Johannesburg Plan of Implementation
MDGs	Millennium Development Goals
MPI	Meetings Professional International
OECD	Organisation for Economic Cooperation and Development
PPP	public-private partnership
RMF	Recommended Methodological Framework
SAM	social accounting matrix
SEEA	System of Environmental-Economic Accounting
SD	sustainable development
SDGs	Sustainable Development Goals
SG	Secretary-General
SME	small and medium enterprises
SNA	System of National Accounts
ST-EP	Sustainable Tourism-Eliminating Poverty
TEA	tourism economic accounts
TPF	tourism policy and forecasting
TSA	tourism satellite account
TSA: RMF	Tourism Satellite Account: Recommended Methodological Framework
UK	United Kingdom
UN	United Nations
UNCED	United Nations Conference on Environment and Development
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Program

UNFCCC	United Nations Framework Convention on Climate Change
UNGA	United Nations General Assembly
UNSC	United Nations Statistical Commission
UNWCED	United Nations World Conference on Environment and Development
UNWTO	United Nations World Tourism Organisation (WTO prior to 2003)
WEF	World Economic Forum
WEFA	Wharton Econometric Forecasting Associates
WMO	World Meteorological Organisation
WSSD	World Summit on Sustainable Development
WTTC	World Travel and Tourism Council

Abbreviations for reports

UNEP report	United Nations Environment Programme study <i>Towards a Green Economy: Pathways to sustainable development and poverty eradication</i> (2011)
Stiglitz report	<i>Report by the Commission on the Measurement of Economic Performance and Social Progress</i> (2009)
1968 SNA	<i>System of National Accounts</i> (1968)
1993 SNA	<i>System of National Accounts</i> (1993)
TSA: RMF 2001	<i>Tourism Satellite Account: Recommended Methodological Framework</i> (2001)
TSA: RMF 2008	<i>Tourism Satellite Account: Recommended Methodological Framework</i> (2008)
IRTS 2008	<i>International Recommendations for Tourism Statistics</i> (2008)

1. Introduction

Evidence-based decision-making requires coherent, consistent and good-quality data. Appropriate metrics are essential when such decisions guide policies, drive change and deepen our understanding of the progress of society.

It can be argued that the past two decades – the post-Cold War era – have been characterised by a strong emphasis on economic growth, market liberalisation and trade expansion. This happened against the background of rapid globalisation, shifting markets, increasing urbanisation and greater connectivity – electronic, visual and physical. At the same time, there has been a strengthening recognition of the importance of sustainability, driven largely by the response to poverty, inequality and climate change. According to Buckley (2012), although “tourism researchers first turned their attention to social and environmental issues almost four decades ago ... the specific term sustainable tourism”, which also considers environmental, carbon and social impacts, is a more recent phenomenon. Delacy et al (2014) note that “In the 20 years from the first Rio Earth Summit, when the modern “Agenda 21 based approach to “sustainable development” was set out, there has been significant progress. The global policy agenda has shifted from planet, through people, communities and climate. Our industry’s sustainability agenda has also advanced. From ecotourism and conservation, through responsible, pro poor and fair trade tourism. Industry greening and supply chain extension programs have multiplied. From basic awareness, to certification towards global indicators for communities”

The data availability around the economic framework is well established at international, national and local levels: There are tested definitions, standards and procedures for measurement and record-keeping, which are well defined in input/output tables, national accounting systems, UN and OECD statistical programmes, public policy dialogue and education programmes. The same is not the case for measuring sustainability, where the concept and its measurement are more recent.

For relatively new service-based sectors such as travel, tourism and the environment, a common denominator is the concept of satellite accounting, which digitally extracts data from traditional national accounting tables (i.e. core SNA) to show the cross-system impacts of discrete clusters of socio-economic activity.

The core *System of National Accounts* (SNA) is designed to describe the essential phenomena that constitute the economy (namely production, consumption, accumulation and wealth) and to measure the contribution of traditional industries to a country’s economic growth or gross domestic product (GDP). However, the measurement of sectors such as travel and tourism is a relatively new field compared to other, traditional economic industries such as agriculture or manufacturing. According to Frechtling (2009), “[t]ravel and [t]ourism is an ubiquitous human activity with social, environmental and economic consequences”, rendering its complete measurement more complex. This led Dunlop (2004:94) to say: “The limitations of the SNA in providing a comprehensive

measure of sustainability are well recognised. But the core framework can be re-cast or extended to provide more information on sustainability, particularly to the extent that sustainability is affected either directly or indirectly by economic activity. This is normally achieved through the development of satellite accounts.”

In an effort to extend the application of the core SNA, the social and environmental dimensions were later added through the extension (or application) of the core set of national accounts, *inter alia* through the construction of a social accounting matrix (SAM) and environmental satellite accounts. According to Madsen and Zhang (2010), “extended accounts such as satellite accounts and Social Accounting Matrixes in different ways give more detailed pictures of activities within specific areas of interest, such as transportation, tourism and the environment”.

Giovannini (2004:9) highlights that “national accounts were [originally] developed to deal with economic phenomena, but nowadays one has to recognise a clear tendency towards the extension of national accounts frameworks to other domains, such as environmental and social domains ... In this respect, a very important milestone, after the publication of the 1993 SNA, was achieved in 2003 with the publication of the handbook on ‘Integrated Environmental and Economic Accounts (SEEA)’. On the other hand ... the Social Accounting Matrix represents an important contribution to the practical inclusion of social aspects in national accounts”. According to Anzalone (2014:8), “satellite accounting, within official statistics, is a specific tool that in principle best allows to integrate information on the environment, the economic and the social systems, by focusing on the interrelationships between the three distinct spheres ... One specific advantage of satellite accounting ... is the possibility to link the data of satellite accounts – namely those on tourism and on the natural environment, in this case – to the economic aggregates of the core system of national accounts, by making use of common concepts, definitions and classification”. Along similar lines, the UNECE (2014:84) notes that “... the possibilities of introducing satellite accounts for [the other domains] of sustainable development should also be explored ... This will improve the consistency between indicators and will ensure that Beyond GDP indicators are produced using the same concepts as GDP itself. Special attention should be paid to wealth, as measures of wealth are central to measuring sustainability”.

The authors of this paper began exploring the notion of linking tourism satellite accounting and environmental satellite accounting in 2011.¹ In the co-edited volume, *Green Growth and Travelism: Letters from Leaders* (Lipman, DeLacy, Vorster, Hawkins & Jiang, 2012), they observed: “There is a need for better data and integrated measurement systems linking travelism (aviation and tourism datasets) and environmental accounting as well as factoring the emerging ‘gross national happiness’ concept into a more inclusive balance sheet of societal well-being ... Mainstreaming must be increasingly supported by standard datasets, with tourism satellite accounts embracing aviation and integrated with environment and climate accounting.” In a follow-up volume, *Green Growth & Travelism – Concept, Policy & Practice for Sustainable Tourism* (DeLacy, Jiang, Lipman and Vorster, 2014), the authors note *inter alia* that “what has become widely accepted as a matter

of political and socio-economic reality, is that growth is a sine qua non, that green has to be a precondition not an afterthought, and that new policy, operational frameworks and metrics are urgently needed to better articulate this ... It is time to act on the metrics and mapping of green growth and travelism. The 20-year-old databases painstakingly developed by UNWTO, WTTC and OECD are inadequate for the transformation task ahead. Tourism master planning and WTTC destination reports have been useful tools for historic promotion-led development, but they are less suited for a hyper-connected, super-collaborative ultra-transparent era. Traditional metrics are limited in scope, with over-reliance on international arrivals and receipts collected by UNWTO. The excellent simulated satellite account data of WTTC is also too often used for advancing the growth/benefit side of the equation, without the equally important impact/consequence side ... An essential prerequisite is to begin measuring impacts and reducing them as a fundamental component of growth strategies. Linking sustainability satellite accounting and tourism satellite accounting is a key to developing coherent metrics. The increased use of 'big data' will create meaningful links with mainstream, quadruple bottom-line change measurement".

This paper elaborates on why extended satellite accounting is important given the evolving (and coalescing) green-growth and sustainable development agendas. The analysis is informed by an enhanced understanding of (i) the integrated nature of the aviation, travel and tourism value chain (i.e. travelism), and (ii) the way in which the three sustainable development (SD) pillars – social development, economic development and environmental protection (also paraphrased as “people”, “profit” and “planet”, or the “triple bottom-line”) – plus the disruptive cross-cutting impact of climate change find expression in both the green-economy paradigm and emerging thinking on the measurement of societal well-being.

Three central concepts must be underscored as underlying premises

Travelism is the term coined to reflect the integrated nature of the travel and tourism value chain, the components and impacts of which are traditionally defined, governed, operated and measured separately, but experienced collectively. Travelism represents a set of demand and supply components that (directly and indirectly) drive almost 10% of the human activity on the planet (i.e. GDP, jobs and investment), thereby deeply affecting infrastructure, trade, development and the environment. Travelism is responsible for some 5% of global carbon dioxide output; is a major factor in transport emissions & an important social impact component (WEF, 2009). When we consider measurement of travelism, we must also ensure that aviation is properly reflected. Airlines carry 51% of international tourists by volume & 70% by value. The critical challenge is “to find a balance between the three pillars of sustainability” on the basis of an approach that positions “travel & tourism collectively as a strategic industry, with air transport as the interconnected core, not an isolated entity” (Lyle, 2012).

Green growth describes the multi-decade transformation of planetary socio-economic development to a low-carbon, inclusionary, biodiversity-sensitive lifestyle. This will provide a sustainable response to today's interconnected challenges of volatility, poverty alleviation, climate change and social disparity, compounded by tomorrow's population explosion and resource depletion scenarios. This idea is increasingly recognised in sustainable development policies, treaties and regulation.

The **triple-bottom-line-plus** represents the balancing of economic, environmental and social imperatives, superimposed by the cross-cutting, disruptive dynamics of climate change and low-carbon response strategies.

2.1 Historical background

2.1.1 Introduction

Virola and colleagues (2001) point out that “statistical work on tourism may have started in 1937 when the Council of the League of Nations recommended a definition of ‘international tourist’ for statistical purposes”, but that compilation of satellite accounts on tourism “[only] started in the late 1970s when France developed plans for quantification of tourism’s economic impacts”. This was followed by efforts of the World Tourism Organisation (WTO)ⁱⁱ in 1982 to describe tourism in line with concepts from the 1968 SNA, with the vision of international comparability of tourism statistics.

The measurement of the tourism (and, by implication, the travel and tourism) sector prior to 2008 was based mostly on approximations from related areas of measurements, such as balance of payments statistics. In 2008, however, the UN approved the International Recommendations for Tourism Statistics 2008 (the IRTS 2008), which provided the main concepts, definitions and classifications for the measurement of tourism and enabled the gathering of basic statistics and indicators about tourism activities.

In the same year, the UN approved the *Tourism Satellite Account: Recommended Methodological Framework* 2008 (the TSA: RMF 2008) to relate these statistics to the broader economic framework through the tourism satellite account (TSA), providing figures on GDP and employment directly attributable to tourism. The latter was the culmination of many years of efforts by numerous institutions, countries and individuals, with the purpose of integrating the measurement of tourism as an economic phenomenon within the mainstream of macroeconomic statistics.

The TSA: RMF 2008 notes the purpose of the TSA as being “to analyze in detail all the aspects of the demand for goods and services associated with the activity of visitors; to observe the operational interface with the supply of such goods and services within the economy; and describe how this supply interact with other economic activities” (TSA: RMF 2008:iii).

2.1.2 Pre 1991 International Conference on Travel and Tourism Statistics.

Since the end of the 1970s, France has been using the term “satellite accounts” as a way of designating those accounting practices in specific horizontal areas that are not identified in the SNA, but nonetheless could be considered as “satellite sub-systems” of the SNA. France also developed operative plans for the quantification of tourism’s economic impact as a pioneer in the measurement of the economic impact of tourism. (TSA: RMF 2001)

The UN, through its Statistical Commission (UNSC) and the World Tourism Organisation (WTO), have been the international organisations that have established a set of definitions and classifications for tourism, with two main purposes, namely (i) to achieve international comparability, (ii) to serve as a guide to countries for introduction of a statistical system for tourism.

“The period between 1937 and 1980 was characterised by the establishment of a set of definitions and classifications for tourism statistics throughout the world that were barely compatible with other statistics” (TSA: RMF, 2001:6). In the 1980s, “an overall awareness began to emerge of the importance of the tourism sector and its interdependence with other economic and social activities” (TSA: RMF, 2001:7). Awareness of the importance of the environmental interdependence came a few years later. In 1983, at the fifth session of its General Assembly, the WTO “issued a report illustrating how it was possible to describe tourism within the recommendations of national accounts” (at that time, the 1968 SNA). “The report stressed the importance of such an exercise as a uniform and comprehensive means of measurement and comparison with other sectors of the economy” (TSA: RMF 2001:7).

The International Conference on Travel and Tourism Statistics, hosted by the WTO in Ottawa during June 1991, was the culmination of the efforts made in the second half of the 1970s and, more specifically, in the 1980s, not only by international organisations (especially the UN, the WTO and the OECD), but also by a number of countries such as Canada and France, and private-sector engagement via the World Travel and Tourism Council (WTTC). The earlier international work on tourism statistics allowed the WTO to present a consistent system of tourism concepts, definitions and classifications at the Ottawa conference. There was, and still is, a clear need for a system of tourism information that is deeply integrated with the SNA. At that time, Statistics Canada developed a credible and comparable means for, *inter alia*, assessing tourism economic activities in relation to other industries in a domestic economy, and developing a framework for relating other relevant data regarding tourism activities in an organised and consistent manner. “This Statistics Canada scheme was part of the work of the Canadian National Task Force on Tourism Data (1984-1986). The report on the proposed TSA was released in May 1987, when the WTO was beginning to develop its ideas for international guidelines for a TSA” (TSA: RMF 2001:8). Canada published its first TSA results in July 1994.

In parallel, the OECD, through its Tourism Committee, has since 1985 been working on the integration of tourism with the broader statistical instruments such as the SNA. In the development of the manual on tourism economic accounts (TEA), the OECD examined several of the complex issues relating to the measurement of tourism, including the reconciliation of supply by tourism industries and consumption by visitors (demand) (TSA: RMF 2001:7).

Finally, in this context, it is important to note that with the creation of the WTTC in 1990, a strong and influential private-sector partner emerged on the scene, requesting a full and active role in the development of TSAs. Its detailed reports, in conjunction with analysis by Wharton Econometric Forecasting Associates (WEFA), provided strong support for the general direction of the government-led satellite account framework, unprecedented data presentation, and a major thrust in the measurement of indirect economic impacts.

2.1.3 1991 to 1999, World Conference on Economic Impact of Tourism,

“Since the Ottawa Conference, not only have many of the initiatives developed and presented begun to crystallise, but also the number of countries that started the development of a TSA had increased” (TSA: RMF 2001:8), with the aim of measuring the impact of the sector. In addition to governments and bodies such as the OECD, the private sector led by the WTTC has progressively strengthened its own initiatives to quantify the economic impact of the sector, taking into account both direct and indirect impact, and not only the direct impact as per the TSA (TSA: RMF 2001:9).

In 1994, the UN and WTO published the *Recommendations on Tourism Statistics*, which had to be adjusted to conform to the principles of the TSA: RMF published in 2001. During this time, the Statistical Office of the European Communities (Eurostat) also developed programmes and carried out studies on tourism statistics in the European Union (EU). Within the OECD, data collection and analysis of the TEA constituted a useful instrument for policy orientation. In 1997, the OECD Tourism Committee made its first proposal for a TSA for OECD countries, and in 2000, the OECD published a manual titled *Measuring the Role of Tourism in OECD Economies* (TSA: RMF 2001).

In June 1999, the WTO convened the Enzo Paci World Conference on the Measurement of the Economic Impact of Tourism in Nice (France), where they unveiled their work on a TSA proposal (WTO, 1999). This framework was approved in principle by the conference, which recommended its use as a platform to achieve consensus with other international organisations for a unique proposal for such a framework to be submitted to the UNSC for adoption (TSA: RMF 2001).

In September 1999, three months after the convening of the WTO Enzo Paci World Conference, a WTO-OECD-Eurostat inter-secretariat working group with private-sector participation was created with the objective of establishing a common conceptual framework for the development of the methodological design of the TSA, in accordance with the resolutions of the Nice world conference. This resulted in an agreement on basic changes to be introduced in the document submitted by the

WTO in December 1999 for consideration by the UNSC at its 31st session, titled *Draft tourism satellite account: methodological references*. The UNSC endorsed the draft document, as amended, which constituted the content of the TSA: RMF published in 2001. (TSA: RMF 2001:10)

2.1.4 2000 to 2010 Updated TSA: RMF recommendations

In 2001, 44 countries from all parts of the world and different stages of development were involved in setting up a TSA. This number had increased to more than 60 in 2010. (UNWTO, 2010:2)

Two world conferences organised by WTO and host countries, Vancouver in 2001 and Iguacu Falls in 2005, deliberated on the importance of improving policy-makers and other TSA stakeholders' knowledge of tourism in its relationship with other economic activities, thus enhancing their ability to make better decisions. By allowing tourism to be understood in the same way as other economic sectors, the TSA represented a powerful instrument to design better tourism development policies.

During this period (in 2003), the WTO became a member of the UN system and a part of the Coordination Committee of Statistical Activities (UN, 2009a:iii). The TSA: RMF 2008 represented a major revision, because the structural consistency with the other frameworks (principally, the 1993 SNA) compelled refinements to definitions that had been adopted in the 1993 *Recommendations on Tourism Statistics*, particularly regarding the forms of tourism, categories of tourism consumption, and classifications of tourism products and productive activities. It takes into account the new 2008 *International Recommendations on Tourism Statistics*, the updates of other macroeconomic related frameworks & experience of member countries in implementing the TSA.

2.1.5 Post-2010

Currently, around 60 countries either have or are in the process of developing a consolidated TSA. Table 1 provides a selected group of countries that have compiled TSAs, showing tourism's direct contribution to economic growth as well as employment in these countries.

Table 1: Tourism direct contribution in selected countries (%)

Country	GDP	Employment
Australia	2,6	4,5
Brazil	3,6	6,2
Canada	1,9	3,6
China	4,2	2,3
Germany	3,2	4,7
India	2,8	4,6
Indonesia	2,5	3,5
Japan	1,9	2,9
Republic of Korea	1,5	2,0
Saudi Arabia	2,9	6,6
South Africa	3,0	4,3
Spain	6,4	5,1
United Kingdom	3,8	14,2
United States of America	2,7	3,7

Source: UNWTO, omt@UNWTO.org (Various reference years)

2.2 Tourism satellite account reform

2.2.1 Starting point

The biggest advantage of the satellite accounting approach is that it uses existing economic data and embeds a sector such as tourism in an accepted system of accounts, namely the SNA. The purpose of a TSA, which provides coherent and consistent tourism statistics, is to analyse in detail all the aspects of demand for goods and services associated with the activity of visitors; to observe the operational interface with the supply of such goods and services within the economy, and to describe how this supply interacts with other economic activities.

2.2.2 Gaps

The conceptualisation and development of a TSA presented a major step forward in the measurement of the direct economic impact of the tourism sector, in terms of both economic growth and employment, but it also has a number of gaps. These include the following:

- It measures only the direct impact and not the indirect impact or the induced or multiplier effect.ⁱⁱⁱ
- The input-output (IO) framework, as the basis of a TSA, is static in nature (Van Ho *et al.*, 2009).
- A relatively neglected research topic has been the measurement of tourism productivity at the sector level. Dwyer and Spurr (undated) argue that a TSA can be used to develop performance indicators such as measures of productivity, prices and profitability for the tourism industry as a whole.
- Weaver and Lawton (2002) summarised the drawbacks of the TSA in three points, namely the scope, the negligence of the multiplier effect, and the time gap between data recording and data release.
- The TSA measures the economic impact only, and not the broader impact through the three conceptual sustainable development (SD) pillars, namely social development, economic development and environmental protection. It also does not reflect the shifting dynamics of climate change or green-growth transformation.

2.2.3 Moving forward: Tourism satellite account reform

TSA's have progressed notably in recent years, providing a linkage between the supply and demand of tourism products and services, and following a consistent framework that sets the TSA's alongside or embedded within the SNA. Nevertheless, the TSA, as it stands, does not reflect the full costs and benefits to society, as environmental and social inputs and outputs are not taken into account (Calderón, Blake & Chapple, 2009). In 2003, at the Djerba climate change conference, the

United Nations World Tourism Organisation (UNWTO) acknowledged the two-way relationship between tourism and climate change (WTO, 2003:1). There is clearly a need for reform, as our aim should not only be to measure tourism, but also to manage tourism. To enable us to do the latter, the following, amongst other things, is important:

- (i) Understanding the broader impact, including the carbon footprint, of tourism consumption

For decades, the topic of economic impact analysis has engaged analysts, economists and, more recently, tourism economists. According to Dwyer and Spurr (undated), “an economic impact analysis estimates the changes that take place in an economy due to some existing or proposed project, action or policy”. The major objective of such estimates has been to inform policy-makers as to the appropriate allocation of resources both within the tourism sector itself and between tourism and other industry sectors. Madsen and Zhang (2010) identified different approaches to estimate the regional impacts of tourism based on national accounts and economics. These are the simple supply or sector approach; the simple demand or commodity approach; the simple satellite account approach, involving tourism satellite accounts based on social accounting, and the extended satellite account approach

The TSA can be complemented and extended by means of tourism policy and forecasting (TPF) models (Blake *et al.*, undated). The TPF models integrate TSA information with a computable general equilibrium (CGE) framework and aims to show the economic impact of tourism and travel to assist the formation of government policies relating to tourism and travel. Although CGE models have their historical origin in I-O methodology, they were also developed to overcome the many shortcomings of I-O models. In particular, CGE models allow price variation, and are not as static as an I-O model. *The Economic Impact of Tourism: Overview and Examples of Macroeconomic Analysis* (UNWTO, 2013a), a presentation by Frechtling distributed on the occasion of the T.20 Ministers’ Meeting in Paris, highlights that policy-makers are also interested in estimating other aspects of the economic impact of tourism by using TSA data to determine the income and government revenue generated by tourism consumption, and incorporating the secondary effects of this spending on the economy as well as how external and policy-induced “shocks” to the economy will affect tourism’s contribution, called the multiplier effect. Tools to achieve this include the I-O model, SAM and CGE.^{iv}

CGE models can guide policy-makers in a variety of scenarios arising from a range of domestic or international shocks or alternative policy scenarios. They can be tailored to allow for alternative conditions such as flexible or fixed prices, alternative exchange rate regimes, differences in the degree of mobility of production factors, and different types of competition. CGE models can be used to quantify the effects of actual policies, such as changes in taxation, subsidies or government borrowing, as well as to predict the effects of a range of alternative policies or exogenous expenditure shocks. They provide guidance to tourism policy-makers on various “what

if?” questions arising from a wide range of domestic or international expenditure shocks or alternative policy scenarios.

TSA and CGE models are increasingly used in tourism analysis, although they have distinctly different functions. TSAs provide an appropriate technique to estimate economic yield at the sector level, while the CGE approach is used to estimate the yield to the economy as a whole (Dwyer, Forsyth & Spurr, 2007). In tourism, very interesting results have emerged using the CGE approach in areas as diverse as tourism taxation, the impacts of special events, policies in response to human-induced tourism crises (terrorism) as well as other crises affecting tourism destinations (such as SARS and foot-and-mouth disease). CGE modelling can include the economic impacts and cost benefit analysis of the broader economic, social and environmental effects (Dwyer & Spurr, undated). The value of this technique has been described as follows by Giovannini and Linster (undated:1, 4): “The concept of sustainable development is concerned both with the quality and the quantity of economic growth and encompasses three dimensions of welfare i.e. economic, environmental and social ... Progressing towards sustainable development implies that the objectives of increasing economic efficiency and material wealth must take into account social and environmental objectives and must be place in an inter-temporal framework ... Frameworks that have proven useful [to link and measure tourism’s full impact] are frameworks based on the accounting approaches, such as those promoted through the SEEA 2003 and through efforts to build social accounting matrixes.”

Italy is an example of a country that has chosen such a macro-approach to link the tourism sector and the environment. Anzalone (2014:4) states that “... [implementing] an accounting framework to link elements of the TSA with environmental accounts : socio-economic aggregates derived from the TSA describe the contribution of the tourism sector to the economy, while environmental consequences of tourism activities can be measured in a consistent way by means of emission accounts according to the SEEA”.

One of the fundamental challenges for tourism into the future is to adapt to climate change and to meet the responsibilities that all industries have in respect of mitigating greenhouse gas (GHG) emissions (Dwyer & Spurr, undated). The shorthand term “carbon footprint” is used to refer to the amount of GHG emissions (CO₂ equivalent) associated with the production and consumption of goods and services at the level of an individual firm, industry or entire economy (Forsyth *et al.*, 2008:vi; Dick Sisman & Associates, 2007).

The TSA provides the opportunity for policy-makers (UNWTO, 2011a), including tourism economists, to better contribute to the understanding of the total impact of the tourism sector (Virola *et al.*, 2001; Smith, 2012; Vellas, 2011; WTTC & Oxford Economics, 2014), including the sector’s “carbon footprint” (Forsyth *et al.*, 2008). According to Dwyer and Spurr (undated), the advantage of using the TSA to estimate the carbon footprint of the tourism sector is that it ensures

that the measure is comprehensive and incorporates all emissions from all industries comprising the tourism sector. If the relationship between industry production and GHG emissions is known, it is possible to calculate the emissions that are due to tourism as measured by the TSA. In addition, since the TSA is extensively used as a measure of the economic contribution of the entire tourism sector, the carbon footprint as an environmental measure is consistent, in terms of the definition of the industry, with the economic measure. Munday, Turner and Jones (2013) also used an I-O framework, which forms the basis of a TSA, to examine the carbon footprint associated with tourism spending.

Jones and Munday (2007) demonstrated how selected environmental consequences of tourism consumption relating to carbon emissions and waste can be quantified using a TSA and an environmental module associated with an I-O framework. Calderón, Blake and Chapple (2009) proposed a framework for the integration of economic and environmental satellite accounts for tourism, and its application to the case of the United Kingdom (UK). Jones (2013) continues to combine tourism (TSA) and environmental satellite accounting methodologies to come up with scenarios for GHG emissions reductions from tourism.

These issues were also explored at the 2003 Djerba (WTO, 2003) and 2008 UNWTO, United Nations Environment Programme (UNEP) and World Meteorological Organisation (WMO) Davos climate summits (UNWTO, WMO & UNEP, 2008), and have been extensively documented by WEF in 2009 in the context of the 2009 United Nations Framework Convention on Climate Change (UNFCCC) Copenhagen Climate Conference of the Parties (COP) (UN, 2009b).

(ii) Understanding tourism within different spatial scales

Extending the TSA to provide a regional scale is an opportunity for regional policy-makers to undertake consistent and defensible analysis of the tourism economy and its interconnections, and also presents tourism economists with opportunities to investigate tourism's contribution to sub-regions (Jones & Munday, 2010; Dwyer & Spurr, undated). Jones, Munday and Roberts (2009) examined emerging methodological and developmental issues with reference to the UK case, with a strong expectation that these issues also have significance for other states engaged in sub-national projects.

(iii) Understanding specific areas and sub-sectors within the tourism sector through specific modules for the TSA

Martin (2012) as well as Eraqi and colleagues (2011) proposed a (comprehensive) human resource module for the TSA, linking it with the current work of the International Labour Organisation (ILO) and the UNWTO in coupling decent work with employment in tourism.

The 2013 issue paper of the UNWTO titled *Governance for the Tourism Sector and its Measurement* reflects on the key factors to be considered in transitioning towards a governance

model for the tourism sector. These include how and to what extent institutional capacity for coordination, collaboration and cooperation can be efficiently used as a governance practice to improve tourism information systems, helping to transform needs into solutions, and opportunities for improving the measurement and analysis of tourism. It describes the concept of governance in the tourism sector, and proposes a basic approach for its measurement and monitoring.

As early as 2006 already, Deery and colleagues adapted the TSA conceptual framework to measure the economic importance of the meetings industry. In the same year, the UNWTO, along with affiliate members Reed Travel Exhibitions, the International Congress & Convention Association (ICCA) and Meetings Professional International (MPI) released a report that explored how best to measure the meetings industry's linkage to tourism, and the extent to which the framework of TSA was capable of clarifying this linkage from a macroeconomic perspective (UNWTO, 2006).

2.2.4 What shapes the context for reform?

The context and case for TSA reform and new improved metrics include a number of broader change directions. These include the following:

- The growing requirement for management of change, particularly against national carbon commitments, destination carrying capacity, human development indicators, local lifestyle qualities, gross national happiness and the like
- The slow but steady shift from traditional sub-sector-focused decision-making silos, to a more cross-cutting government, industry and civil society engagement in strategic economic, development, trade and sustainability policies
- Initiatives to mobilise financing for essential hard and soft infrastructures through public-private partnerships (PPPs), new impact investment frameworks, crowd funding and lower-market engagement barriers (Lipman & Vorster, 2014)
- Public and private sector programmes that provide funding for travel and tourism projects to drive poverty alleviation or climate adaptation, which will progressively be mainstreamed into overall sustainability strategies^v
- Action to facilitate connectivity through improved mobility, communications and border crossings, which in turn shift employment, investment, production and consumption patterns
- Programmes to adapt to new technology and ensure that well-trained and reskilled workers will come on-stream, with a focus on green jobs, particularly for small and medium enterprises (SMEs)
- Pressures for better fiscal (taxation and incentive) regimes that do not discriminate against the sector and, instead, contribute to its sustainable growth – these will be more focused on sustainable mobility impacts with global shifts to devolution, urbanisation and rural drift
- Growing consumer awareness of the impacts of travel and tourism, particularly among the

millennials segment

- An accelerating global transformation and development agenda focused on social inclusion and green growth, increasingly underpinned by big data, satellite observation and technology-driven digital recording

Central to the case for change is the renewed focus on sustainable development, and how this finds expression in the notion of green growth and the shift to the more inclusive measurement of societal well-being. These are elaborated on next.

3. Sustainable development and green growth

3.1 Background: Sustainable tourism in a global context

The UNWTO's (2011b:16) definition of sustainable tourism, namely "tourism that takes full account of its current and future economic, social and environmental impacts", is accepted as the working definition. The centrality of the three SD framework concepts in the green-economy revolution has been best expressed by the Secretary-General (SG) of the UNWTO, Taleb Rifai (2012): "As we position sustainability at the heart of the tourism development agenda, we need to understand that this is not only our responsibility; it is also in our interest. People and profit should go together, people and planet should go together, and planet and profit should also go together." This was again emphasised during the opening ceremony of IMEX 2014 in Frankfurt, Germany.

The linkage between social and economic development and environmental concerns dates back to the UN Stockholm Conference on the Human Environment in 1972, although SD was really only defined in a formal sense in the 1987 Brundtland Commission report, *Our Common Future* (UNWCED, 1987:46). The next major milestone was the United Nations Conference on Environment and Development (UNCED, also popularly known as the Rio Earth Summit) in 1992 (UNGA, 1992), which strengthened the link between the concepts of the environment and development, and was captured in Agenda 21, a global SD action plan (DEAT & UNDP, 2004:21-25). The notion of the triple bottom-line soon gained traction (Elkington, 1998). Further milestones in mainstreaming SD were the adoption of the Millennium Development Goals (MDGs) in 2000, and the Johannesburg Declaration on Sustainable Development as well as the Johannesburg Plan of Implementation (JPOI) at the World Summit on Sustainable Development (WSSD) in 2002 (Najam, Papa & Taiyab, 2006; Elkington, 2004; Porritt, 2005; Weybrecht, 2010). These WSSD outcomes represent the highest-level political commitment to the three SD pillars to date, with heads of state assuming "collective responsibility to advance these components at local, national, regional and global levels", and reaffirming full support for the implementation of Agenda 21, the MDGs and the full integration of economic and social development and environmental protection

(DEAT & UNDP, 2004:137). The WSSD also for the first time explicitly brought to the fore “the importance of sustainable tourism for poverty reduction” (Rifai, 2012).

In conjunction with that event, Geoffrey Lipman developed a framework initiative linking these aspects (Sofield *et al.*, 2004), and the resultant Sustainable Tourism-Eliminating Poverty (ST-EP) initiative was developed later, which evolved into the ST-EP Foundation that was spun off from UNWTO in 2013.

The WTO, WTTC and Earth Council's *Agenda 21 for the Travel and Tourism Industry*, adopted in 1995, is another important reference point (Strong, 2012; Scowsill, 2012). In 1992, after having attended the Rio summit, a series of conversations started between the then WTTC President Geoffrey Lipman and the SG of the summit, Maurice Strong, which led to the WTTC undertaking a major study on the application of Agenda 21 to the travelism sector. This work was then shared with the UNWTO and the Earth Council, and was profiled in a series of regional seminars with travel and tourism organisations to show the linkages between the environment and growth of the travelism sector. The work used the evolving TSA as a starting point, with a strong emphasis on value chain inclusion (indirect and induced) as well as the potential of the sector as a change agent, both generally and in the development agenda and Africa specifically. It also resulted in the WTTC launching Green Globe in 2005 - the first sectoral environmental certification programme.

The SD perspective is at the core of a significant body of literature on tourism, aviation and climate change (see, for example, Berno & Bricker, 2001; Neto, 2003; Cernat, 2012; Gittens, 2012; Lyle, 2012, as well as the volumes edited by Gössling & Hall, 2006; Gössling & Upham, 2009). Further important points of reference include the UNWTO's indicators of sustainable development for tourism destinations, which were finalised in 2004; the proceedings of the 2004 WTO Tourism Policy Forum on tourism's potential as a sustainable development strategy (UNWTO, 2005; Hawkins, 2012; Goodwin, 2012), and the UNWTO's Global Code of Ethics for Tourism (De Villiers, 2012).

3.2 Travel, Tourism and green growth

In the few years running up to the 2012 Earth Summit in Rio (also referred to as Rio+20), the SD construct found renewed expression in the contemporary discourse about a “green economy”. The 2011 UNEP study *Towards a Green Economy: Pathways to sustainable development and poverty eradication* (hereinafter referred to as the UNEP report) identifies tourism as one of ten green-growth sectors, alongside transport, buildings, water management, waste management, agriculture, fisheries, forests, manufacturing and energy (UNEP, 2011b).

The rewriting of the rules of the global financial system in the aftermath of the 2008/9 global financial crisis, and indirectly in response to the more fundamental “gross misallocation of capital” (UNEP, 2011b:1), directed world leaders' attention to the opportunity to simultaneously rebalance

the allocation of physical, financial and human capital, natural capital, and in the process also address social inequalities (UNEP, 2009:4).

In the face of natural-resource scarcity and the threatening overconsumption of the earth's resource base, and in particular given the multiple threats posed by climate change, water scarcity and ecosystem degradation, combined with an increasing conviction that social disparities need to be addressed, the strategic shift to a green economy is taking increasing prominence in global, regional and national development plans.^{vi} It is also increasingly accepted that "economic growth and environmental sustainability are not incompatible" (UNEP, 2011c:1), and that the green-economy transformation has important social and economic co-benefits. As such, the concept of a green economy transcends traditional economics, and is also a social and ecological construct.

As "an economy that results in improved human well-being and reduced inequalities over the long term, while not exposing future generations to significant environmental risks and ecological scarcities" (UNEP, 2010:4-5), the green economy is "low-carbon, resource-efficient and socially inclusive" (UNEP, 2011a:16). Rather than a restraint on development or a "drag on growth", the transformation to a green economy is seen as "a new engine of growth", "a net generator of decent jobs" and "a vital strategy for the elimination of persistent poverty" (UNEP, 2011b:3). The green economy is thus an expanding economy.

Therefore, this paper refers to "green growth" and its application to the Travelism (Travel & Tourism) value chain (Lipman 2014). Accepting the green-growth paradigm as an alternative to the prevailing "growth-above-all" paradigm also holds implications for the way in which we assess societal well-being. As such, it is closely related to the concept of gross national happiness (GNH), which provides a basis for the more inclusive measurement of societal well-being in the Kingdom of Bhutan (Tideman, 2004; Veenhoven, 2001; Bates, 2009; Miller, 2010; Donnelly, 2004).

4. New metrics: More balanced measurement of societal well-being

Stiglitz, Sen and Fitoussi (2009:8), in the *Report by the Commission on the Measurement of Economic Performance and Social Progress* (hereinafter referred to as the Stiglitz report), build on the GNH concept and suggest looking beyond narrow GDP metrics by including "quality of life" and "sustainability" in a broader balance sheet of societal well-being.

Stiglitz and colleagues (2009) remind decision-makers: "What we measure affects what we do; and if our measurements are flawed, decisions may be distorted." Stiglitz (2010:285) furthermore suggests that much can be learnt from the Kingdom of Bhutan, where the assessment of prosperity includes "gross national happiness" – a measure that looks beyond the material to spiritual and other non-quantifiable values. The concept of more balanced metrics that reflect all three SD pillars in accounting systems is of course not new, and several authors and institutions previously

suggested moving beyond GDP metrics by incorporating social and environmental values into the measurement of societal well-being. The Stiglitz report has however popularised the concept.

Though the small Kingdom of Bhutan can hardly be regarded as a blueprint for large tourist destinations, it remains an interesting social experiment. The underpinnings of the GNH concept can be found in Buddhist and “humanized” economics (Tideman, 2001; 2004). The basic premise is that traditional economic metrics, such as GDP and jobs created, ignore the higher-level dimensions of human needs, for example the desire for leisure time, the quality of employment, and the quality of life derived from the natural environment. Thus, GNH draws on a world view that goes beyond the contemporary materialistic economic paradigm, where individuals are reduced to rational economic-value maximisers. In this context, Layard (2006) stresses that societies with the highest GDP are not necessarily the “happiest” societies, and that happiness ultimately depends on external as well as intrinsic values. Following the same logic, Veenhoven (2001:5) and Burns (2008:127) underscore that people’s interaction with the natural environment is an enabler of happiness.

In this context, Stiglitz and colleagues (2009) suggest that “GDP is an inadequate metric to gauge well-being over time, particularly in its economic, environmental and social dimensions”. What is important, they assert, is an “assessment of current well-being and an assessment of sustainability”, where “[c]urrent well-being has to do with both economic resources, such as income, and non-economic aspects of peoples’ life”, and the sustainability of well-being “depends on whether stocks of capital that matter for our lives (natural, physical, human, social) are passed on to future generations” (Stiglitz, Sen & Fitoussi, 2009:11). In the words of Stiglitz (2010:284), we have been “borrowing from the future [and] ... living beyond our means” for far too long – which is something not reflected in conventional GDP metrics”.

Therefore, UNEP (2011a:16) suggests that “the main indicators of economic performance, such as growth in GDP, need to be adjusted to account for pollution, resource depletion, declining ecosystem services, and the distributional consequences of natural capital loss to the poor”. Similarly, Porritt (2005:319) argues that if happiness is the ultimate objective, “we will need to be monitoring people’s well-being and happiness just as closely as we measure income and gross domestic product”. The Stiglitz report (2009:58) reiterates that “the full range of factors that make life worth living include those that are not traded in markets and not captured by monetary measures”. In this context, well-being has objective and subjective dimensions, and includes “cognitive evaluations of one’s life, happiness [and] satisfaction”, which cannot be considered as “resources with imputable prices, even if individuals do make trade-offs among them” (Stiglitz, Sen & Fitoussi, 2009:16,144).

From a travelism vantage point, the key message is that economic and social imperatives should also be considered when the policy options for the low-carbon transformation of travelism are

evaluated. However, the inverse is also true: “Travelism with a social and environmental conscience” requires that natural capital should not be expended today if it compromises the well-being of the generations of tomorrow. A more inclusive balance sheet of societal well-being than that which has brought humanity to so many ecological tipping points is thus required. Therefore, rather than relying on narrow economic metrics such as GDP growth, or climate change mitigation metrics such as tons of carbon dioxide (CO₂), all three SD framework concepts should be considered when policy options are assessed along with the cross-cutting dynamics of extreme climate change.

In this context, the recent suggestion in the Oxford Martin School's report *Now for the Long Term* about the creation of a new institution, Worldstat, is rather inspiring. We need a global dialogue and a globally shared vision on what we are supposed to measure, which also needs to extend beyond the tourism sector, because what we measure determines what we plan for in government and in business. And we dare not be short-sighted in this endeavour. Too often, we focus on annual or even month-to-month statistics, while we should actually be focusing on decades and measure long-term impacts (Oxford Martin School, 2013).

5. Conclusions: Modernising and mainstreaming the tourism satellite account

In tracing the evolution of the TSA, one can distinguish between both the substantive developments as well as the institutional and governance interactions that have taken place over the past three decades. It is a positive story of increasing collaboration – typified, for example, by the growing convergence between the UNWTO and WTTC methodologies and reporting, as opposed to the earlier divergence in definitional parameters.

It is clear that this is an on-going journey. Reform is motivated by the increasing recognition of the need for green growth, the threats posed by persistent environmental degradation and overconsumption of the earth's resource base, the almost universal recognition of the impending disruptive impact of extreme climate change, and the carbon reduction target-setting initiatives of the UNFCCC and, in respect of aviation, ICAO.

The central issue is the need for full balance-sheet accounting covering both benefits and impacts, as opposed to the predominant historical focus on benefits. The question of accounting is ultimately about a policy mind-set. The onus is very much on the leading national and global organisations to genuinely put greening and social inclusion on the same page as growth.

The triple-bottom-line-plus is a *sine qua non* framework concept with economic, environmental and social values as well as the cross-cutting climate change imperatives included in the measurement framework of societal well-being. In this context, GHG emissions are central to full balance-sheet accounting. So too are poverty-related factors beyond GDP, including human development, social inclusion and other GNH data.

The industry and its government enabling partners must rapidly move beyond the growth mantra and develop a more rational management and, hence, measurement vision as well as a coherent action framework. Growth in tourist arrivals will continue on the back of the rising middle class, rapid urbanisation, the spread of cheaper airlift and the liberalisation of trade. But the challenge is also to manage the new growth (while addressing challenges in respect of the inherited growth) to ensure that it is environmentally sustainable, climate-resilient, ethically defensible, culturally sensitive and focused on people empowerment; not just growth for the sake of unbridled growth.

The old metrics are limited in scope, with too much reliance on international tourist arrivals and receipts on the benefit side of the equation, without the equally important environmental, cultural and social side being reflected in an inclusive balance sheet. New and improved metrics must also incorporate the domestic travel and tourism element, which in many respects is even more significant. The dictum is: If it cannot be measured, it cannot be managed.

Such management of the impacts against national carbon commitments, destination carrying capacity, human development, local lifestyle qualities, cultural heritage and ethical conduct could eventually become fundamental requirements in dynamic sustainable travel and tourism master plans, promotion and the concomitant infrastructure. It could force our hand towards integrating TSAs and environmental/carbon accounting.

If we talk about managing rather than creating growth, we also need to open the discussion on how we measure growth. The old metrics such as GDP and international arrivals no longer make the grade in isolation. The WTTC and UNWTO's work on TSAs was ground-breaking in its day, but renewal is urgently needed. The new metrics would have to include the social and environmental indicators of success. The greening of our TSAs has simply not taken off. Yet, the climate imperative and the reality of the resource consequences of population growth and mobility have changed the rules of the game forever.

However, the glass is half full, not half empty – there is much reason for positivity. International accords on green growth are in the making, hopefully culminating in the 2015 UN summits on climate change and the Sustainable Development Goals (SDGs) respectively. Concomitant regional, national and local government accords will follow, and will integrate with existing green-growth strategies. Extensive climate resilience plans are being developed in nearly all corners of the world, driven by the tragic realities of an escalation in extreme weather-related disasters, carbon pollution, resource depletion and security management. Smart city and community-impact measurement is taking place, with overcrowding and technology as push/pull drivers. But the historic industry environment response and certification systems, which cover only a small percentage of the overall market, will have to move beyond classic cost-saving energy, water and waste audits to incorporate broader corporate social responsibility (CSR) issues practised by responsible companies and, more importantly, impact investors. This will start with the supply chain – albeit because that is an easier management hit – which is a step in the right direction of full corporate engagement. It will spread rapidly to the 80% of the sector that are classified as SMEs,

as funds will be increasingly available for climate adaptation and green job creation. It will also extend increasingly to the public, both visitors and the visited, as market-based mechanisms for pricing carbon, tougher regulations and low-cost mass marketing via social media exponentially increase (such as Tripadvisor's green champion identification). Technology innovation, big-data management, widely available econometric decision-making models and globally accessible cloud computing will help push the green-growth paradigm in the right direction.

For all of this to be meaningful, the travel and tourism sector must play a leading role in the transformation. A starting point will be to measure triple-bottom-line-plus impacts with the same rigour as we measure benefits; to promulgate them in the same way, highlight linkages, and manage them coherently.

Key Conclusions are:-

- It is now imperative to measure and acknowledge Tourism (Travelism) impacts in the same way as benefits have been measured and identified over the past 2 decades.
- Linking Tourism and Environment Satellite Accounting mechanisms is a key factor
- OECD should take a formal position to engage with UNWTO, WTTC, UNEP and other stakeholders from public, private & civil society sectors to advance this matter urgently.

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ⁱ Lipman first raised the issue as President of the WTTC in a keynote address at the 1999 UNWTO/OECD statistical conference in Nice.

ⁱⁱ The World Tourism Organisation (WTO) was the forerunner of the UN World Tourism Organisation (UNWTO), which joined the United Nations System in 2003.

ⁱⁱⁱ Indirect impacts can be defined as the impacts generated by the intermediate consumption of the producers who are directly in contact with the visitors. Induced impacts can be defined as the impacts generated by the production factors (mainly manpower through its demand for goods and services) implemented by the producers who are in contact with the visitors. (<http://hotelmule.com/html/43/n-3843-7.html>)

^{iv} Many or most GCE models use a SAM as the basic source of information.

^v The UN General Assembly specifically singled out sustainable tourism because of its actual and potential contribution to development. It also referred to its particular capability of delivering benefits and income through ecotourism at the local community level and in rural areas. (UNGA, 2012)

^{vi} Since 2008, the notion of a 'global green new deal' has gained significant political traction. At the Group of Twenty (G20) Seoul summit in 2010, heads of state and government committed to undertake "[g]reen growth and innovation-oriented policy measures to find new sources of growth and promote sustainable development" (G20, 2010:6-7). Tourism ministers from major economies similarly recognised "the sector's great potential to encourage the transformation towards a greener and more sustainable economy" (T.20 Tourism Ministers, 2010).