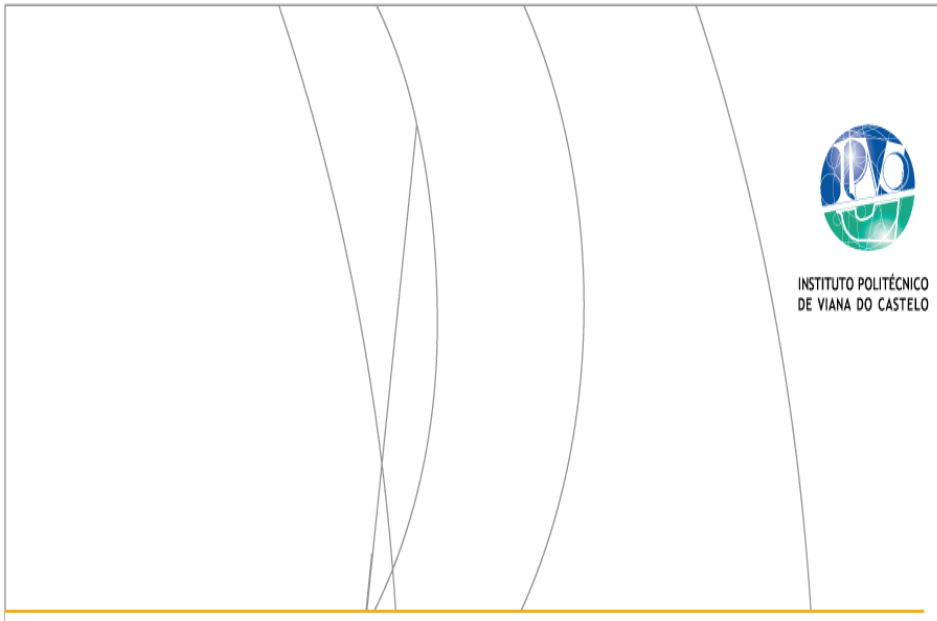

INSTITUTO POLITÉCNICO
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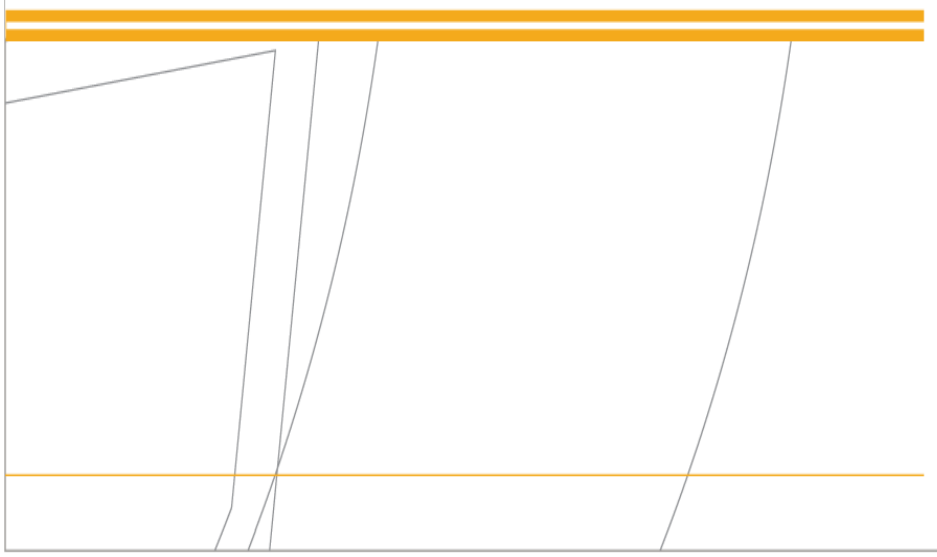
SUSTAINABLE TOURISM DEVELOPMENT AND MONITORING IN DEVELOPING COUNTRIES: THE CASE OF ARMENIA

Hasmik Amiryan



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SUSTAINABLE TOURISM DEVELOPMENT AND MONITORING IN DEVELOPING COUNTRIES: THE CASE OF ARMENIA

Master In Innovative Tourism Development

The Dissertation was performed under the guidance of

Professor Goretti Silva

May 2013

To my beloved parents, Hovik and Azniv,

who supported me in each and every stage of my life

And to my sisters, Arevik and Armieh, who were always there for me…

Նվիրվում է իմ սիրելի ծնողներին՝ Հովիկին եւ Ազնիվին, որոնք միշտ

աջակցել են ինձ կյանքիս յուրաքանչյուր փուլում,

եւ իմ քույրերին՝ Արեւիկին եւ Արմինեին, որոնք միշտ կողքիս են եղել …

The Jury

President	**Phd Olga Maria Pinto de Matos** Associate Professor and Coordinator of MTID of Polytechnic Institute of Viana do Castelo
Vowels	**Phd Carlos de Oliveira Fernandes (Examiner)** Associate Professor of Polytechnic Institute of Viana do Castelo
	PhD Goretti Silva (Supervisor) Associate Professor of Polytechnic Institute of Viana do Castelo

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ABSTRACT

In the last two decades sustainability has become a central matter in tourism, giving rise to more proactive development strategies from destination management organizations, to more responsible attitudes from the tourism industry, and increased awareness and concerns from consumers. Particularly in developed countries a great emphasis has been placed on the identification of indicators that enable to understand sustainable tourism development processes and its implications.

However, in developing countries, sustainability with regard to tourism is still an emerging issue. This research addresses the process of the sustainable tourism assessment in developing countries, with particular reference to Armenia, namely which indicators can be put into practice in order to help tourism organizations and tourism businesses to meet sustainability requirements and to gain the confidence of tourism markets.

Secondary data analysis was conducted, both to identify the theoretical background and conceptual framework as well as to identify available data on the practical assessments carried out throughout the world with regards to tourism sustainability assessment. This research concludes by proposing the set of indicators that best fit the specific context of Armenia.

Key Words: Sustainable development, sustainable tourism, sustainability metrics, tourism in Armenia

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Abbreviations

ADB – Asian Development Bank

ATDA - Armenian Tourism Development Agency

BSEC - Black Sea Economic Cooperation

CNPA - Cairngorms National Park Authorities

CRT - Tourism Reactivation Committee

CSD – Commission on Sustainable Development

CST - Committee for Sustainable Tourism

EFA - Education for All

EIA - Environmental Impact Assessment

FAO - United Nations Food and Agriculture Organization

GDP – Gross Domestic Product

GNI – Gross National Income

HDI – Human Development Index

IFTO – International Federation of Tour Operators

IMF – International Monetary Fund

ISI – The International Statistical Institute

IUCN - International Union for Conservation of Nature and Natural Resources

NSS – National Statistical Service

OECD – Organization for Economic Co-operation and Development

ONS – Office of National Statistics

PPP – Purchasing Power Parity

SD – Sustainable Development

SEA – Strategic Environmental Assessment

STAMP - Sustainability Assessment and Measurement Principles

STD – Sustainable Tourism Development

STI – Sustainable Tourism Indicators

TDCP – Tourism Development Concept Paper

TDI – Tourism Development Initiatives

TOI – Tour Operators Initiative

TTCI - Tourism and Travel Competitiveness Index

TTCR - Tourism and Travel Competitiveness Report

UN – United Nations

UNCED – United Nations Conference on Environment and Development

UNCTAD – United Nations Conference on Trade and Development

UNDP – United Nations Development Programme

UNDSD – United Nations Decade of Education for Sustainable Development

UNEP – United Nations Environmental Programme

UNESCO - United Nations Educational, Scientific and Cultural Organization

UNIDO - United Nations Industrial Development Organization

UNWTO - World Tourism Organization

WB - World Bank

WCED - World Commission on Environment and Development

WCS - World Conservation Strategy

WEF – World Economic Forum

WSSD - World Summit on Sustainable Development

WTO – World Trade Organization

WTTC – World Travel and Tourism Council

WWF - World Wildlife Fund

CHAPTER ONE: Introduction

1.1. Introduction

Tourism has already emerged as one of the world's most important socio-economic sectors, and has been steadily expanding at an average rate of about 4-5 per cent annually during the latter half of the 20th century. In spite of occasional shocks, international tourist arrivals have shown virtually uninterrupted growth: from 25 million in 1950, to 277 million in 1980, to 435 million in 1990, to 675 million in 2000, and to 940 million in 2010 (UNWTO, 2012). The combination of domestic and international tourism is now acknowledged as comprising the world's "largest industry".

For many developing countries, including Armenia, tourism is one of the main sources of foreign exchange income and the number one export category, creating much needed employment and opportunities for development. Despite such considerable potential this issue has brought a dilemma: on one hand some developing economies have not been able to take advantage of the growth in tourism activity, on the other hand already developed economies have faced huge sustainability problems (Getz, 1986; Heberlein et al., 2002). Regardless of all the initiatives undertaken, the 2002 UNWTO report presented at the World Summit on Sustainable Development concluded that the main challenge to overcome in achieving sustainable tourism is to fill the current gap between the stage of designing methodological approaches, guidelines on tourism policies and technological know-how and its implementation. Similarly there is need for execution of the latters by public agencies, together with the usual activities of tourism firms. In order to solve the above-mentioned issues a need for a specific methodology is quite explicit; a methodology that will enable stakeholders to estimate the gap as well as develop some benchmarks allowing developing countries, dependent on tourism, to improve the sustainability of the sector (Cernat and Gourdon, 2012).

In this sense the need to assess sustainability in tourism derives from the fact that tourism sustainability assessment model *"provides a systemic way of organizing, combining, and measuring indicators so that policymakers can draw conclusions about the state of health (system quality) of the human and natural ecosystem for a destination"* (Ko 2001, p. 817).

Therefore, the main goal of this research is to define which specific indicators can be put into practice in order to help tourism organizations and tourism businesses to meet sustainability requirements in developing countries based on the case of Armenia.

This chapter presents the overview of the motivations for the research, the main goal and objectives as well as the theoretical background of the main concepts. Further on the methodology of the research and the structure of the dissertation are presented.

1.2. Motivations for conducting this research

With many communities now dependent on tourism for their economic livelihood, long-term sustainability through a local, multi-stakeholder process is becoming key for destination management (Dodds, 2012). Tourism has been accepted as an alternative economic development strategy by many governments in developing countries (Jenkins, 1980), and Armenia as a part of developing world is not exceptional in this case.

The main reason for a comprehensive methodology aimed at improving the prospects for sustainable tourism in developing countries stems from the growing importance of tourism activity in developing countries.

One of the main obstacles for defining whether any given tourism destination has developed sustainable tourism is the complexity of measuring the level of sustainability that has already been achieved. However, there is still no agreement on a universal list of indicators enabling the comparison of sustainability levels in different tourism destinations due to the multivariate character of sustainability, together with the difficulty in aggregating the

considerable amounts of information required (Stoeckl et.al, 2004; Miller, 2001; Manning, 1999; Bell and Morse, 1999; Butler, 1998).

1.3. Theoretical background

1.3.1. Sustainable development

Over the last decades sustainable development was continuously in the center of the researchers' attention (e.g. Holmberg, 1992; Reed, 1997). In spite of all the arguments it is commonly acknowledged that the concept of sustainable development comprises *"the idea of **needs**, in particular the essential needs of the world's poor, to which overriding priority should be given; and the idea of **limitations** imposed by the state of technology and social organization on the environment's ability to meet present and future needs"* (WCED, 1987, p. 50).

In fact a clear vision of what "development" means for a society is required as well as an understanding of whether that development can be sustained by future generations. Sustainable development is, thus, based on principles of sound husbandry of the world's resources, and on equity in the way those resources are used and in the way in which the benefits obtained from them are distributed (UNEP and UNWTO, 2005).

1.3.2. Sustainability in tourism

The last decade has witnessed a growing recognition of the importance of the sustainability imperative in tourism. The emerging view is that the tourism sector, regardless of how one chooses to define it, can no longer be viewed as a commercial activity that has no significant impact on the natural, human-made and socio-cultural environments in which it is situated.

Therefore, sustainable tourism has been defined by the World Tourism Organization as *"satisfying current tourist and host community needs, while protecting and improving future opportunities. It is seen as a guide in managing all resources, in such a way that economic, social, and aesthetic needs may be met, while maintaining cultural integrity, essential ecological processes, biological diversity, and life support systems"* (UNEP and UNWTO, 2005, p. 12).

Sustainable tourism is not a discrete or special form of tourism. Rather, all forms of tourism should strive to be more sustainable.

1.3.3. Sustainability assessment and metrics

The theory of sustainability assessment has largely evolved from work undertaken for environmental impact assessment (EIA), and more recently strategic environmental assessment (SEA) (Sheate et al., 2001), which is understandable given that sustainability assessment is often considered to be the "next generation" of environmental assessment (Sadler, 1999).

Sustainability assessment is viewed as *''(…) a tool that can help decision-makers and policy-makers decide what actions they should take and should not take in an attempt to make society more sustainable''* Devyust (2001, p. 9).

According to UNWTO (1996), the indicators measure the information through which decisions makers could reduce the chances of making the wrong decisions. Therefore, indicators are considered as tools for supporting different concepts and approaches for assessing sustainability in tourism (e.g., Schianetz et al., 2007; Tanguay et al., 2012).

1.4. The goal and the objectives of the research

This research aims to define which indicators can be put into practice in order to help tourism organizations and tourism businesses to meet sustainability requirements in developing countries with the special reference to Armenia. According to the main goal specific objectives can be stated as following:

- Objective 1: To define the principles of the paradigms of sustainable development and sustainability in tourism;
- Objective 2: To identify already existing measurement approaches and tools for assessing sustainability in tourism;
- Objective 3: To distinguish the particularities of tourism development in developing countries;
- Objective 4: To analyze the current stage of tourism development in Armenia in the context of sustainability and competitiveness;
- Objective 5: To propose a set of indicators for measuring sustainability of tourism in development in developing countries adapted to the case of Armenia.

1.5. Research methodology

Given the character of this research the methodology chosen was based on the collection and analysis of secondary data since the major sources of data collection, based on Sarantakos' classificatory system (cited Jennings, 2001, p. 84) included public documents, archival documents, administrative documents, and formal studies and reports.

In this sense secondary data were examined "to answer research questions other than the question(s) for which the data were initially collected" (Vartanian, 2011, p. 3). Besides as Jennings (2001) notes sometimes secondary data sources are the only available way to access tourism data.

1.6. Structure of the dissertation

Regarding the structure of this dissertation, it is divided into nine chapters. The first chapter is the broad introduction to the research topic, motivations for conducting the research, the theoretical background of the main concepts, the goal and objective of the research, as well as the methodology applied to the research and the structure of the dissertation.

In the second chapter the two of main concepts regarding sustainable development and sustainability in tourism are discussed thus providing conceptual framework and focusing on the evolution of the theories.

The third chapter was designed to provide the theoretical background with regard to sustainability assessment, metrics and tools. In particular, different concepts and sustainability assessment approaches are discussed in the line with guidelines and principles concerning sustainable tourism indicators selection process. Further on, a body of literature is studied in order to define the path of evolution of sustainability assessment indicators for tourism (STI) in time, focusing on the datasets provided by the most prominent actors in the field such as United Nations World Tourism Organizations (UNWTO), European Environmental Agency (EEA), United Nations Commission of Sustainable Development (UNCSD), Organization for Economic Co-operation and Development (OECD) and European Union (EU).

The forth chapter discusses the phenomenon of tourism development and monitoring processes undertaken in developing countries focusing on the motivations and possible challenges while striving to use tourism as a shift towards overall macroeconomic development. For this reason different approaches of taxonomy are discussed trying to define the characteristics of developing countries. Moreover, the stance of developing countries in tourism competitiveness is examined in comparison with developed economies.

Driven from the main objective of the research the fifth chapter of the report is dedicated to tourism development particularities in Armenia. First of all introduction to the country is

present with regard to geographic, socio-demographic and economic profiles in order to make clear what kind of resources (natural, human and physical capital, financial) are available for tourism development. In addition institutional framework for tourism development in Armenia is presented to define the main direction of development strategies. Additionally, the current state of tourism, as well as the allocation and evaluation of the tourism resources in Armenia are described which are followed by the discussion of the Armenian stance at the Tourism and Travel Competitiveness Report.

The sixth chapter describes the methodology used for the research. Within this chapter, the main goals and objectives of the research are stated as well as the respective research questions presented.

The seventh chapter of the dissertation was dedicated to the discussion of eight cases dealing with tourism sustainability assessment and indicators at different scales to identify the frequency and practical implications of those indicators. The cases studied were applied to France, Spain, UK, Douglas Shire in Australia, Cairngorms National Park Authorities, Gaspesie region in Canada, Bjelasica and Komovi region, Serbia and the town of Crikvenica in Croatia.

The eighth chapter was designed to make the assessment and synthesis of the results obtained via the already studied datasets and practical cases. The main purpose of this section was to identify whether there was a gap between the theoretical framework and practical cases thus justifying the dataset of core indicators that could be applied for assessing tourism sustainability in Armenia.

In the end the last chapter presents the respective conclusions, discussion and evaluation of the results. Also in this chapter recommendations are provided.

1.7. Summary

This first chapter presented the holistic overview of the research. It is suggested that for the developing countries to overcome possible challenges and obstacles on the way of tourism development a proper planning and monitoring is needed. In this sense the specific indicators for assessing sustainability in tourism can be developed to estimate and control the progress towards development.

CHAPTER TWO: Sustainable development and sustainability in tourism

2.1. Introduction

> "*If everyone used energy and resources the same way we do in the Western World, we would need three more Earths at least. And we have only one."*
>
> Mona Sahlin, former Minister for Sustainable Development, Sweden, *Institutionalizing Sustainable Development, 2008*

The concept of "sustainable development" has widely captured the attention of public and political organizations, as it is *"intended to embrace the idea of ensuring that future generations inherit an Earth which will support their livelihoods in such a way that they are no worse off than generations today"* (Pierce and Atkinson, p. 1).

This chapter presents the theoretical background of the two main concepts discussed in this research. In particular, the evolution of the concepts of sustainable development and tourism sustainability are discussed.

2.2. Sustainable development

According to Hall and Lew (1998, p. 16), sustainable development most certainly tries to review the conflicting value positions in terms of the environment. The author describes sustainable development as an "*essentially disputed concept".* Sustainable development could be understood differently from everyone, and is easily accepted by any group (Romeril, 1994). According to some authors (e.g. Bramwell et al., 1993; Mowforth et al., 1998), when tourism is considered, this concept is seen as the development and intensification of tourism,

while others understand this concept as an alternative tourism and counteract to the development of mass tourism (e.g., Weaver, 2006).

However, since the process of defining and achieving sustainable development has become one of the major policy debates of our generation (Hall and Lew, 1998), before discussing the main concept let's pay attention to the literal definitions given by the Oxford English Dictionary:

- Sustainable – 1) able to be maintained at a certain rate or level, 2) able to be upheld or defended
- Development - the act or process of developing; growth; progress

Thus, the term "Sustainable Development" can be literally defined as a "process of development that is able to be upheld maintained at a certain rate or level". The most commonly used definition of sustainable development is till the one given in the report of the World Commission on Environment and Development (WCED, 1987; p. 43), i.e. sustainable development is *"… a process to meet the needs of the present without compromising the ability of future generations to meet their own needs". It contains within it two key concepts:*

- *"the concept of **needs**, in particular the essential needs of the world's poor, to which overriding priority should be given; and*
- *the idea of **limitations** imposed by the state of technology and social organization on the environment's ability to meet present and future needs."*

In fact a clear vision of what "development" means for a society is required as well as an understanding of whether that development can be sustained by future generations. Sustainable development is, thus, based on principles of sound husbandry of the world's resources, and on equity in the way those resources are used and in the way in which the benefits obtained from them are distributed (UNEP and UNWTO, 2005).

Debate over the “sensible use” (Hall and Lew, 1998; p. 25) of natural resources has long been discussed by researchers. The book, Man *and Nature or, Physical Geography as Modified by Human Action (1965)*, by George Perkins Marsh was one of the publications having an enormous impact on the debates concerning sustainability. However, only after its appearance in the Brutdlland Report (WCED, 1987) in the late 1980’s, the specific term “sustainable development” started gaining wide acceptance (OECD, 2008).

The chronicle of the major events concerning sustainable development can be found in the Annex 1.

The concept of sustainability as known to us today first appeared with the publication of World Conservation Strategy (WCS) in March, 1980 (IUCN, 1980). The Conservation strategy was prepared by the International Union for Conservation of Nature and Natural Resources (IUCN) with the assistance of the United Nations Environment Education Program (UNEP), the World Wildlife Fund (WWF), the Food and Agriculture Organization of the United Nations (FAO) and the United Nations Educational, Scientific and Cultural Organization (UNESCO). The project was aimed to be a strategy for the conservation of the living resources in the context of major international environmental problems and disasters.

The idea of sustainable development in the Strategy was adopted emphasizing the relationship between economic development and the conservation and sustenance of natural resources. Later IUCN along with UNEP and WWF (1991, p. 10) defined sustainable development as determined *“to improve the quality of life while living within the carrying capacity of ecosystems”.*

The importance of WCS is also significant in the sense that afterwards it turned to be a halfway mark between 1972 United Nations Stockholm Conference on Human Environment and the 1992 Conference on Environment and Development (UNCED) held in Rio de Janeiro.

The United Nations Conference on the Human Environment held in Stockholm, Sweden from 5 to 16 June 1972 considered the need for a common outlook and principles to inspire and

guide the people of the world for the preservation and enhancement of the human environment. The Conference approved the establishment of the United Nations Environment Programme (UNEP) to provide continued leadership and coordination of environmental action.

The next major step in the development of the concept was The World Commission on Environment and Development (WCED) also called as the Brundtland Commission in 1983 chaired by Gro Harlem Brundtland. The commission was created to address the growing concern *"about the accelerating deterioration of the human environment and natural resources and the consequences of that deterioration for economic and social development."* (UN, 1987: 42/187). The UN General Assembly recognized that environmental problems were global in nature and determined that it was in the common interest of all nations to establish policies for sustainable development. The Report of the Brundtland Commission, Our Common Future, was published by Oxford University Press in 1987.

About 178 governments, including the heads of 118 States of Governments participated in the United Nations Conference on Environment and Development, also known as the Earth Summit - held in Rio de Janeiro, Brazil from June 3 to June 14, 1992.

Later in the same year The Commission on Sustainable Development (CSD) was created to ensure the effective follow-up of UNCED.

The following 5 agreements were signed during the conference (UN, 1992):

- The *Framework Convention on Climate Change* that introduced measures designed to reduce the threat of global warming.
- The *Convention on Biological Diversity* which put forward proposals aimed at preserving the Earth's biological diversity through the protection of species and ecosystems.

- *Agenda 21* – this was an action plan, aimed at introducing sustainable development, which it is hoped would guide government policies throughout the world over the forthcoming decades.
- The *Rio Declaration* which included 27 principles for guidance on development and the environment.
- And finally, the *Forest Principles* emphasizing the right of states to exploit their own forest resources while advocating general principles of sustainable forest management.

Among the agreements it is noteworthy to mention Agenda 21 which is a comprehensive plan of action to be taken globally, nationally and locally by organizations of the United Nations System, Governments, and Major Groups in every area in which human impacts on the environment. The number 21 refers to the 21st century. The 40 chapters in Agenda 21 are divided into following sections:

- Section I: Social and Economic Dimensions
- Section II: Conservation and Management of Resources for Development
- Section III: Strengthening the Role of Major Groups
- Section IV: Means of Implementation

The World Summit on Sustainable Development (WSSD) held in Johannesburg, South Africa from 26 August to 4 September 2002 thoroughly confirmed the full implementation of Agenda 21, the Programme for Further Implementation of Agenda 21 and the Commitments to the Rio principles.

In addition different actions were taken pursuing to enhance the public awareness about sustainable development. Namely, United Nations General Assembly in its 57th Session in December 2002, proclaimed the Decade of Education for Sustainable Development (UNDESD) for the period 2005 – 2014 with UNESCO as its lead agency.

The goal of the UNDESD is to integrate the principles, values, and practices of sustainable development into all aspects of education and learning for all sections of the society.

The UN DESD seeks to (UNESCO, 2005):

- Incorporate quantitative and qualitative ESD indicators into on-going monitoring and evaluation of Education for All (EFA) and the UN Literacy Decade;
- Monitor the progress of activities undertaken by UN agencies, Governments and NGOs in observance of the Decade and facilitate implementation and follow-up;
- Evaluate the achievement of measurable results in realizing the aims and objectives of the Decade, particularly in regard to the integration of ESD in national educational policies, programs and systems; and
- Make recommendations to further promote ESD based on results and lessons learnt from the Decade.

It is believed that this educational effort will encourage changes in behaviour that will create a more sustainable future in terms of environmental integrity, economic viability, and a just society for present and future generations.

Realizing the urgency of re-thinking our ways of living and governing Brundtland report signaled to “responsibly meet humanity’s goals and aspirations”.

The World Commission on Environment and Development, as it was formally called, sought to draw the world’s attention to “the accelerating deterioration of the human environment and natural resources and the consequences of that deterioration for economic and social development.” In establishing the commission, the UN General Assembly explicitly called attention to two important ideas:

- The well-being of the environment, of economies and of people is inextricably linked.
- Sustainable development involves co-operation on a global scale.

In its Insights on Sustainable Development OECD (2008, p. 4) claims that sustainable development is *".. about integration: developing in a way that benefits the widest possible range of sectors, across borders and even between generations".* Moreover, it is identified as:

- a conceptual framework: a way of changing the predominant world view to one that is more holistic and balanced;
- a process: a way of applying the principles of integration – across space and time – to all decisions; and
- an end goal: identifying and fixing the specific problems of resource depletion, health care, social exclusion, poverty, unemployment, etc.

For years the concept of sustainable development has been used by the United Nations different organizations to articulate several essential shifts of perspective in how people relate to the world around them and, consequently, how they expect governments to make policies that support that world view.

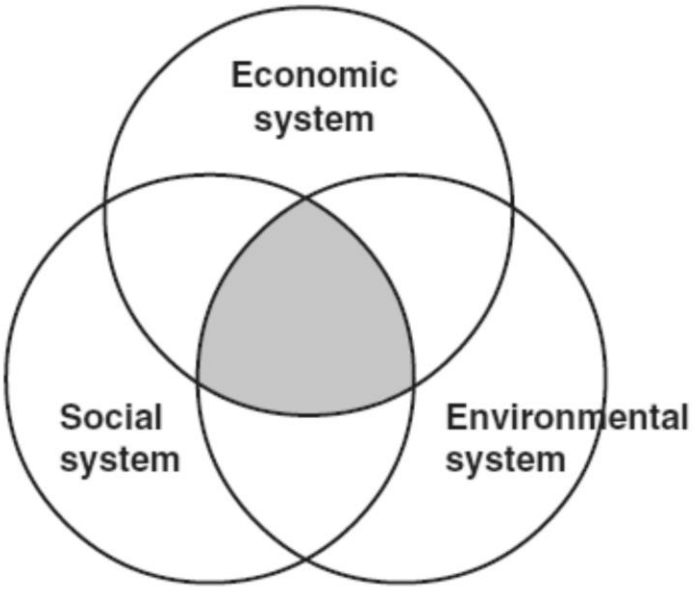
At the core of sustainable development is the need to consider "three pillars" together: society, the economy and the environment. Even though Brudtland Commission presented a two-pillar model reflecting environment and development concerns, the "three-pillar" or "triple bottom line" (TBL) model separates development issues into social and economic factors, emphasizing that ''material gains are not sufficient measures or preservers of human well-being'' (Gibson 2001, p. 7). For the purposes of this research, the TBL can be considered an interpretation of sustainability that places equal importance on environmental, social and economic considerations in decision-making. Thus, sustainable development does not focus solely on environmental issues. More broadly, it encompasses the three general policy areas as presented in the Figure 1.

The Swiss Project on the monitoring of sustainable development (MONET) (BFS, BUWAL and ARE 2001 cited Keiner 2005, p. 2) proposed the following definition:

"Sustainable development means ensuring dignified living conditions with regard to human rights by creating and maintaining the widest possible range of options for freely defining life plans. The principle of fairness among and between present and future generations should be taken into account in the use of environmental, economic and social resources.

Putting these needs into practice entails comprehensive protection of bio-diversity in terms of ecosystem, species and genetic diversity, all of which are the vital foundations of life".

Figure 1. Three components of sustainable development



Source: Cox and Cusick (2006, p.1)

The eco-centric approach that embodies the principals of sustainable development proposed by IUCN, UNEP and WWF (1991, p. 23) claims that *"sustainable development is maintaining and enhancing the quality of human life- social, economic and environmental - while living within carrying capacity of supporting eco-systems".*

Consequently, ever since discussions with regards to the concept (e.g. Holmberg, 1992; Reed, 1997; Harris et al., 2001) started recognizing the three essential aspects of sustainable development, namely:

- An economically sustainable system must be able to produce goods and services on a continuing basis, to maintain manageable levels of government and external debt, and to avoid extreme sectoral imbalances which damage agricultural or industrial production. Crucially, it is about the viability of enterprises and activities and their ability to be maintained in a long term (UNEP, 2005).

  The economic sustainability element is based upon neoclassical theory on economic growth, particularly, Solow's (1974, 1986, 1993) amplified theory on capital convertibility and Hicks-Lindahl concept of maximum income, which can be defined as implementation of the principle of fair distribution of wealth among generations. Economic sustainability seeks to maximize the flow of income and consumption that could be generated while at least maintaining the stock of assets (or capital), which yield beneficial outputs (Hicks, 1946; Maler, 1990).

  The principal goal of implementation of sustainability principles is safeguarding of an optimal amount of general capital (or sum of different kinds of capital) for the future generations. Already in 1974, Solow analyzed the problem of an optimal distribution of capital accumulation among generations. In the framework of neoclassical theory of economic growth, it allows for discussing criterion of "Hicks-Solow sustainability" (Pierantoni, 2004; Toman et al., 1995).
- An environmentally sustainable system must preserve a secure resource base by avoiding the overuse of renewable resource systems or environmental sunk operations and the exhaustion of non-renewable resources (Woods, 2002). This includes maintenance of biodiversity, atmospheric stability, and other ecosystem functions not ordinarily classed as economic resources.

  The environmental aspect of the sustainable development mostly concerns to stability of biological and physical systems and refers to Holling's et al. (1973, 1978,

1986) scientific works. Therefore, “Holling’s sustainability” focuses on general vitality and health of ecosystems in contrary to “Solow-Hartwick sustainability”. In this case the main goal of economic development is to determine the natural systems limits for various economic activities taking into account the vitality of sub-systems in the critical view of global stability of the total ecosystem.

Thus, the significance of preserving biological variety is emphasized here in order to secure balanced nature, elasticity of ecosystems at a global level and their ability to adapt to changes in biosphere, as well as ability to secure future possibilities. Referring to biological variety, it is worth noticing that it cannot be replaced by anything else.

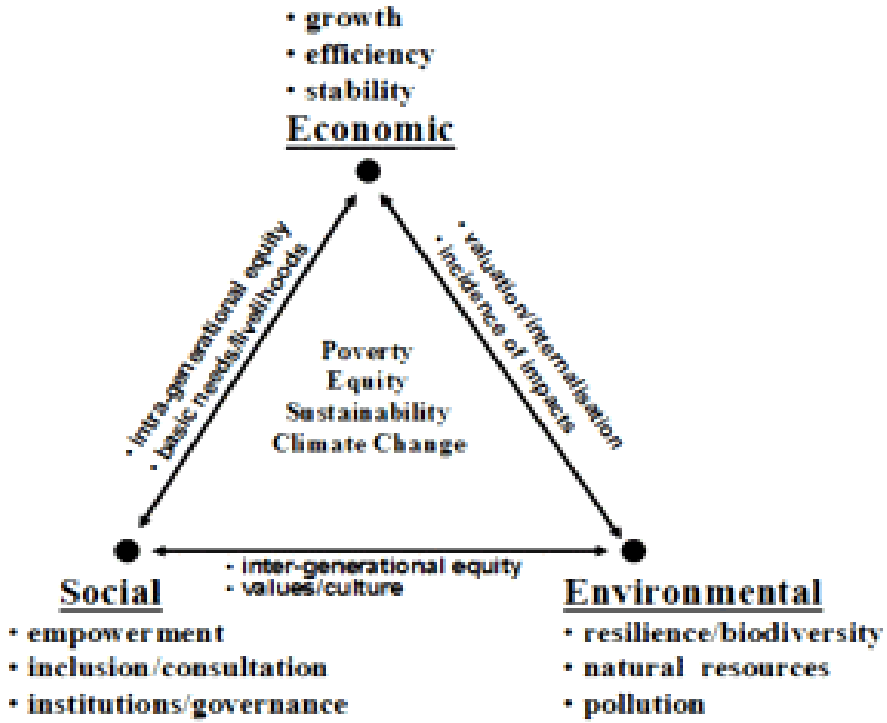
- A socially sustainable system should be based on the principles of fairness in distribution and opportunity, adequate provision of social services (Harris, 2001). Literally it means *“respecting human rights and equal opportunities for all in society”* (Seymoure and Roberg 2012, p. 178). Sustainability forces limitations upon the society’s ability to exchange with the surrounding natural systems and upon the society’s structure as well.

  People-oriented the social-cultural sustainability concept reflects the interface between development and dominating social norms and strives to maintain the stability of social systems. Social sustainability seeks to reduce vulnerability and maintain the health (i.e. resilience, vigor, and organization) of social and cultural systems, and their ability to withstand shocks (Bohle et al., 1994; Ribot et al., 1996).

  Socio-cultural sustainability requires at least the preservation of certain critical components of social capital, the latter being understood as the ability of the society to solve social, economic, and environmental problems, and to be active in forming the development of the whole system (Berkes and Folke, 1994). Responsibility for the planet requires global solidarity and consolidation, based on systematic approach to the reality, holistic thinking, seeing the biosphere and humanity as one system, and global cultural basis. Sustainable development actually represents this shared

responsibility. At the same time, the concept of sustainable development is a way to solve two different and sometimes conflicting groups of aims: *"development-progress-growth"* and *"stability-safety-environment"* (UN, 1998).

Figure 2. Sustainable development triangle – key elements and interconnections



Source: Munasinghe, 2004, p. 36

Being based on those three pillars only makes the concept of sustainable development even more complex since it can have different and sometimes opposite meanings. Shiva (1992) identifies two types of mutually exclusive situations of sustainability: in nature sustainability is to refer to the regeneration of the natural processes and on the other hand sustainability in the market place, i.e. from the economic perspective suggests that ceaseless supply of raw materials should be ensured. However, despite these complications, the three principles outlined above do have resonance at a common-sense level and as indicates Jiliberto (2003)

sustainable development is based not on the economic, social, ecological, or institutional dimension, but rather on their system as an integrated whole.

There's also another definition given by the famous Robert Prescott Allen (2001 cited Wilson Center, 2013), who has founded and chaired several influential IUCN - The World Conservation Union projects and has 18 years of experience evaluating and advising development strategies on four continents:

> *"Sustainability is just another way of saying "the good life" as a combination of (a) a high level of human well-being, and (b) the high level of ecosystem well-being that supports it"*.

The main features that all the above definitions share (either explicitly or implicitly) are as follows:

- A desirable human condition : a society that people want to sustain because it meets their needs;
- A enduring ecosystem condition: an ecosystem that maintains its capacity to support human life and others;
- A balance between present and future generations; and within the present generation.

In other words all the discussed definitions of sustainable development have two components: the meaning of development and the conditions necessary for sustainability (Miltin, 1992).

2.3. Sustainable tourism development

2.3.1. Conceptual framework

The concept of sustainable tourism like sustainable development suffers from the limitations, derived from the ambiguity in its definition. In its 1998 annotated bibliography, the World Tourism Organization reviewed about 100 books and more than 250 articles on sustainable tourism. Yet, there are a myriad of definitions for sustainable tourism, including ones for eco-tourism, green travel, environmentally and culturally responsible tourism, fair trade and ethical travel.

Social and environmental issues in the tourism field, were considered for the first time by tourism researchers almost four decades ago (Allen, et. al 1988; Cater 1987; Liu and Var 1986; Brougham and Butler 1981; Smith 1977; Turner and Ash 1975; Young 1973). However, the specific term "sustainable tourism" started being in use barely two decades ago (May 1991; Nash and Butler 1990).

As a matter of fact most of the definitions originate from the basic definitions about sustainable development, though the vague character of sustainability dominates the concept of sustainable tourism and condemns it to excessively rhetorical use which leads to multiple interpretations and consequently to applications with varying intensity and aims as claimed by Torres-Delgado (2012).

However, as Hunter (1997) points out sustainable tourism development most certainly should be considered as an adaptive paradigm which aims at contributing to objectives of sustainable development and development in general by determining special principles in the light of its parental concepts. In other words as Tosun (1998, p. 596) claims sustainable tourism development should be accepted as *" all kinds of tourism developments that make a notable contribution to or, at least, do not contradict the maintenance of the principles of development in an indefinite time without compromising the ability of future generations to satisfy their own needs and desires"*. In this sense another definition given by Butler (1993, p.

29) seems to be a significant contribution in unifying the concept of sustainable tourism development with its parental concepts. The definition states that: *"sustainable development in the context of tourism could be taken as: tourism which is developed and maintained in an area (community, environment) in such a manner and at such a scale that it remains viable over an indefinite period and does not degrade or alter the environment (human and physical) in which it exists to such a degree that it prohibits the successful development and well-being of other activities and processes"* (Coccossis et. al. 2002, p. 27).

Respectively, the Committee of Ministers of the Council of Europe (1995 cited UNWTO, 2005) claims that sustainable tourism development is appropriate to all forms of development and management of tourist activities that respect the environment, protect for a long-term the natural and cultural resources, and are socially and economically acceptable and equitable.

Sustainable tourism is seen as a guide by the World Tourism Organization in managing all resources, in such a way that economic, social, and aesthetic needs may be met, while maintaining cultural integrity, essential ecological processes, biological diversity, and life support systems thus satisfying current tourist and host community needs, while protecting and improving future opportunities" (UNWTO, 1996).

Sustainable tourism development as derived from the main definition of the sustainable development itself is considered to be a development which: *"...meets the needs of present tourists and host regions while protecting and enhancing opportunity for the future"* (UNEP and UNWTO, 2005, p. 12).

It is quite obvious that the above mentioned as well as many other definitions, that although formally correct, have not made a very significant step forward from the standard definition of sustainable development. All they do is to add some of the specificities of tourist activity to that standard definition. Actually, they only marginally alter the three basic requirements: the integrity of ecosystems, economic development, and equity within and between generations. This makes them only partially acceptable.

Unlike these definitions there are some more specific definitions that focus on tourist activities. Accordingly, as defined by the UNWTO (2005, p. 12) , sustainable tourism can be said to be: "*Tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities",* or "...all forms of tourism development, management, and activity which enable a long life for that cultural activity, which we call tourism, involving a sequence of economic tourism products, that are compatible with keeping in perpetuity the protected heritage resources, be it natural, cultural or built, which give rise to tourism."

According to the enumerated definitions it becomes clear that there is consideration about integrating tourism into a wider field of sustainable development management. Tourism, even if sustainable, cannot be discussed outside of the context of the integrated development of all the activities being important for sustainable development in a particular area. Neither economic sustainability, nor ecological sustainability, nor tourism sustainability, nor any other can be discussed separately. Besides, "*sustainable tourism development requires the informed participation of all relevant stakeholders, as well as strong political leadership to ensure wide participation and consensus building. Achieving sustainable tourism is a continuous process and it requires constant monitoring of impacts, introducing the necessary preventive and/or corrective measures whenever necessary"* (UNEP and UNWTO 2005, p. 11).

Sustainable tourism should also maintain a high level of tourist satisfaction and ensure a meaningful experience to the tourists, raising their awareness about sustainability issues and promoting sustainable tourism practices amongst them (UNWTO, 2004).

According to Angelevska-Najdeska and Rakicevik (2012) planning seems the only way for sustainable tourism development to successfully overcome the daily changes that occur in turbulent surrounding when it comes to prevention of disorder tourism development.

The concept of sustainable tourism development involves balanced economic, social and cultural development without endangering the environment, which enables the development of the same or higher level. Sustainable development is a process that allows development to be achieved without degradation or depletion of those resources on which it is based (UNEP, 1994 cited UNEP and UNWTO, 2005).

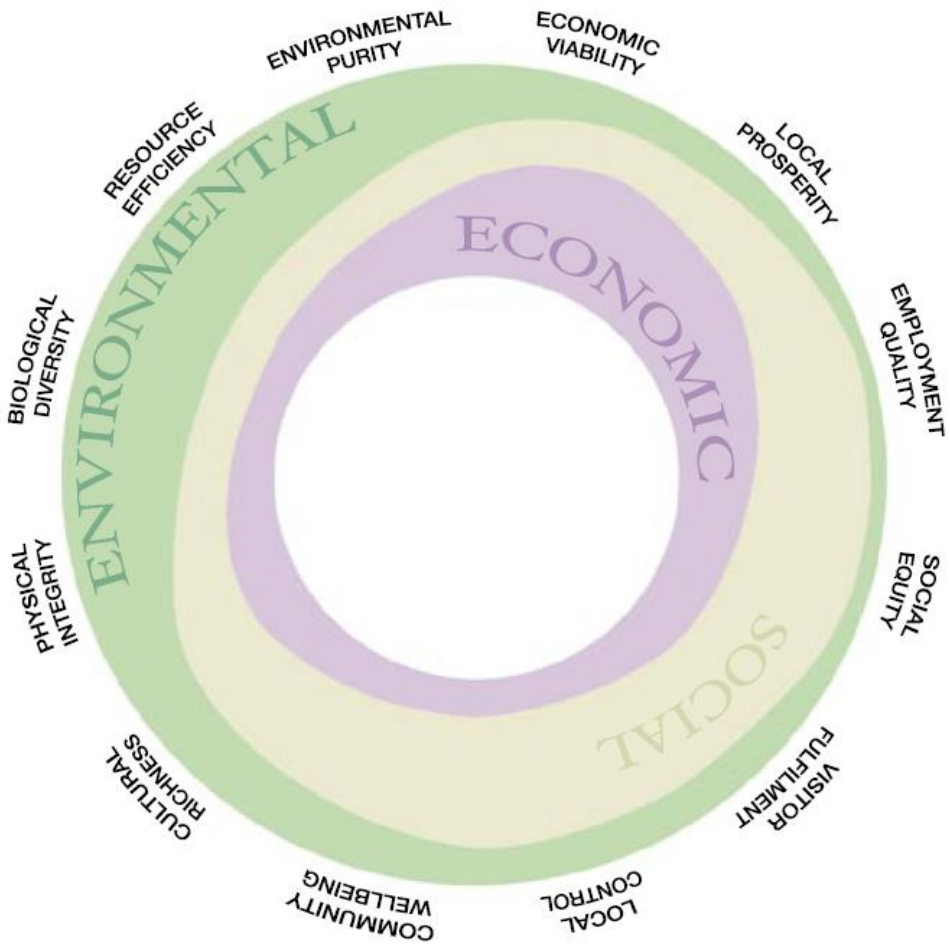
The Guide for Policy Makers Making Tourism More Sustainable (UNEP and UNWTO, 2005) identifies that the agenda for sustainable tourism must embrace two, interrelated, elements of the sustainability of tourism, namely:

- The ability of tourism to continue as an activity in the future, ensuring that the conditions are right for this; and
- The ability of society and the environment to absorb the benefits from the impacts of tourism in a sustainable way.

Thus, the agenda distinguishes twelve aims that address all the aspects of tourism sustainable development considering economic, social and environmental impacts (Figure 3).

The twelve aims for an agenda for sustainable tourism are stated as (UNEP and UNWTO, 2005, p. 18) as illustrated by the Figure 3 and are described in further detail in Annex 2 being: Economic Viability; Local Prosperity; Employment Quality; Social Equity; Visitor Fulfillment; Local Control; Community Wellbeing; Cultural Richness; Physical Integrity; Biological Diversity; Resource Efficiency; Environmental Purity).

Figure 3. Relationship between the 12 aims and the pillars of sustainability



Source: UNEP and UNWTO (2005, p. 20)

The order in which these twelve aims are listed does not imply any order of priority. Each one is equally important.

2.3.2. The evolution of the paradigm of tourism sustainability

Any discussion of the international dimension of the concept of sustainable tourism must mention the World Summit of Rio de Janeiro, where the concept of sustainable development was consolidated, and which was a springboard for several initiatives in sustainable tourism. Since 1992, therefore, a broad institutional framework for sustainable tourism has been in development, and there have been many papers on the subject, and the most important of these are given chronologically in Annex 3.

One of the key moments in the development of the concept of sustainable tourism was the 1st World Conference for Sustainable Tourism held in Lanzarote (Spain) in 1995, which concluded with the Charter for Sustainable Tourism. This document established a broad framework for local-scale sustainable development of tourism by listing several objectives related to the social, economic and environmental sustainability of the phenomenon. In the same year the application of the concept and the United Nations Programme for the Environment (UNEP) was published in the Guide for Environmentally Responsible Tourism. Efforts were also made to guarantee the application of Agenda 21 to the sector.

The most important of these was the declaration of the World Travel and Tourism Council (WTTC) and Earth Council titled Agenda 21 for the Travel and Tourism Industry, a document that was the first action plan seeking the integration of tourism with the environment. This was followed by a series of declarations by various institutions at different levels which laid out directives for the sustainable development of tourism, such as the Calvià Declaration on Tourism and Sustainable Development in the Mediterranean (1997), the Manila Declaration on the Social Impact of Tourism (1997), or the Malé Declaration on Sustainable Development (2007).

In addition, the non-governmental sector of the Mediterranean added its weight to this movement under the guidance of the Mediterranean NGO Network for Ecology and Sustainable Development (MED-Forum) network with the Ulixes 21 project to raise

awareness of the value of the Mediterranean coastline and the environmental threat posed by unsustainable tourism models. 1999 was a significant year for coordination and political consensus with regard to sustainable tourism.

The United Nations World Tourism Organization (UNWTO) drew up its Global Ethical Code for Tourism, a document that set out an ethical code for a sector that had no formal code, despite long running discussions on this subject over last years.

The discourse which had been circulating in these institutions now began to circulate in the private sector, and the first actions began to appear there. Among these was the Tour Operators Initiative (TOI) which aimed to achieve a commitment from its members to adopt the philosophy of sustainable development, and to coordinate efforts to promote and spread sustainable methods and practices in tourism. Despite advances in previous years, the Economic and Social Council of United Nations (ECOSOC) considered in 2001 that it had to intensify efforts to achieve sustainability in tourism development and to avoid social and environmental impacts. It is necessary to *"develop integrated, culturally and environmentally aware tourism planning"* (Economic and Social Council of United Nations, 2001, p. 5), as stated in the preparatory document for the World Summit on Sustainable Development (tp be held in Johannesburg, South Africa in 2002). It was this Summit which saw the creation of an Action Plan where the importance of tourism and sustainability was given an epigraph of its own, in recognition of the growing acceptance of the relation between tourism and sustainable development, especially when compared with the previous Summit (Rio de Janeiro, Brazil, 1992) where there were few mentions of tourism.

The growing concern with the phenomenon of climate change has also been echoed in the sector, and in 2003 the UNWTO convened the 1st International Conference on Climate Change and Tourism in Djerba (Tunisia), and the 2nd in Davos (Switzerland) in 2007. Both conferences resulted in declarations of agreements to offset the effects of tourism in the process of climate change and, at the same time reduce the negative impact of the activity in tourist destinations.

2008 was the year in which the first symptoms of a world economic crisis appeared, and the UNWTO responded by creating the Tourism Reactivation Committee (CRT) which met four times in 2009 to analyze the economic situation at the time. These meetings resulted in the Route Map for Recovery which was a group of strategic directives which used sustainable criteria to enable tourism to contribute to tackle the economic crisis on three related fronts: capacity for recovery, stimulus, and the green economy.

2.4. Summary

Both the sustainable development and sustainable tourism are very recent and still maturing concepts and although the second (sustainable tourism) derives from broader considerations about sustainability, it should be considered as an adaptive paradigm aiming to contribute and enrich the first one.

Moreover, and even though sustainability issues were initially discussed because of environmental problems it is commonly agreed in the literature to refer to both sustainable development and sustainable tourism as concepts comprising three dimensions, namely, economic, socio-cultural and environmental.

CHAPTER THREE: Sustainability assessment and metrics

3.1. Introduction

Since the appearance of the Brundtland Report and the initiation of the concept of sustainable development, many individuals, communities, and other organizations have been attempting to convert intentions of sustainable development into practice (Ko, 2001).

This chapter, therefore, presents the main concepts and approaches towards sustainability assessment and metrics. The underlying rationale is that concepts can only be implemented efficiently if there are appropriate tools, as indicators are considered to be, available to support them. This chapter, therefore, also provides the review of different criteria and guidelines while selecting indicators for sustainability assessment.

3.2. Conceptual framework

Even though sustainability assessment is being increasingly viewed as an important tool to aid in the shift towards sustainability in tourism, little practical methodology has been developed so far. Moreover, some tourism academics even argue that sustainability in tourism is generally an aspiration or a goal, rather than a measurable or achievable objective (Middleton and Hawkins 1998).

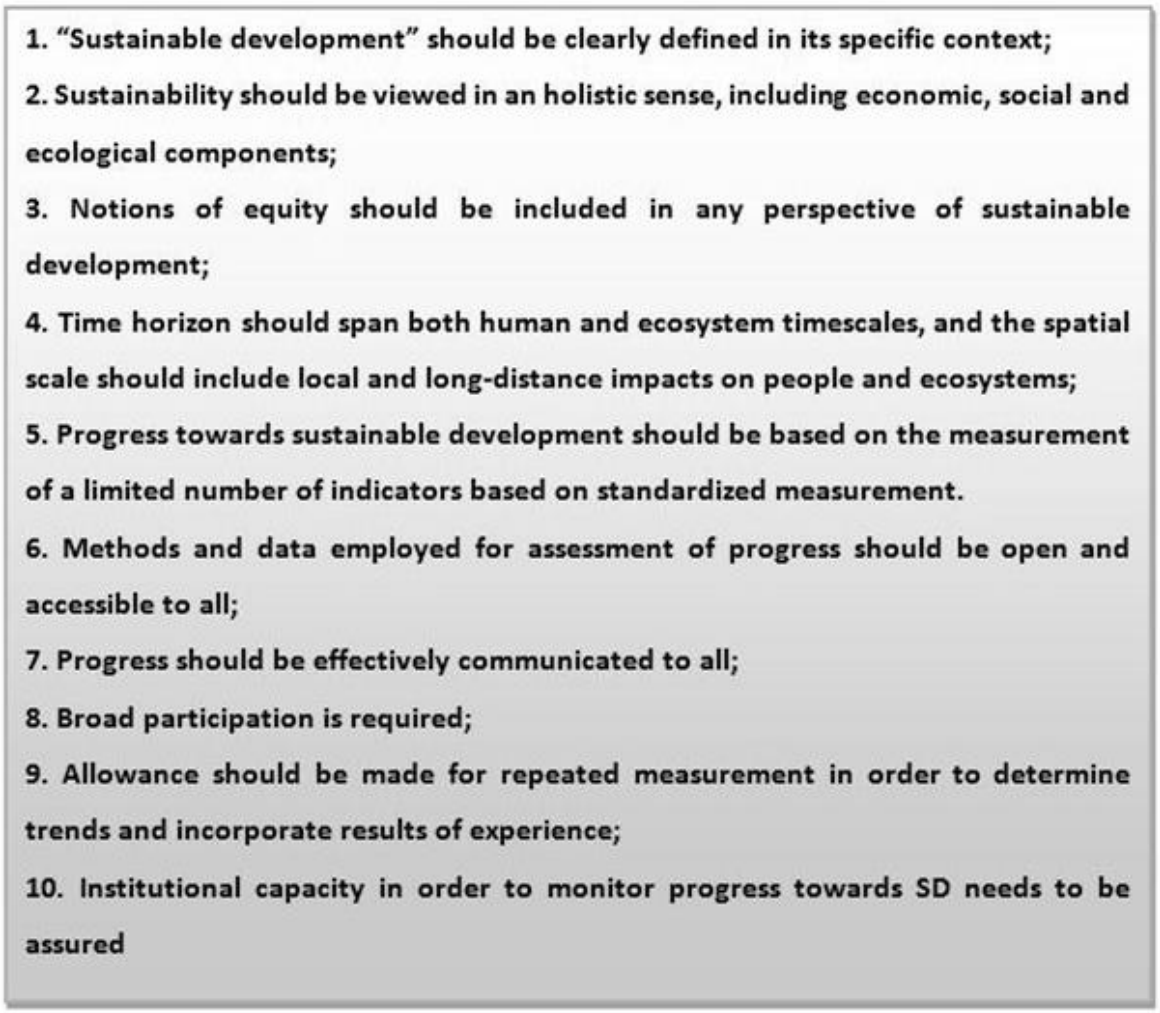
Stoeckl et. al. (2004) suggest that one cannot measure sustainability, therefore indicators can only provide an indication of change and will only ever be partial. Miller (2001, p. 361), however, provides an encouraging argument that: *"Although it seems paradoxical to develop indicators for sustainable tourism when no satisfactory definition of the concept exists, the process of developing the indicators does help in determining the important tenets of the concept."*.

Sustainability evaluation and monitoring are often described as a process by which the implications of an initiative on sustainability are evaluated, where the initiative can be a proposed or existing policy, plan, programme, project, piece of legislation, or a current practice or activity. However, this generic definition covers a broad range of different processes, many of which have been described in the literature as "sustainability assessment" (Pope et.al., 2004).

Devyust (2001, p. 9) defines sustainability assessment as *''(…) a tool that can help decision-makers and policy-makers decide what actions they should take and should not take in an attempt to make society more sustainable''.*

The main principles used for gauging progress towards sustainable development are the ones agreed in a 1996 meeting held in Bellagio, Italy (Pinter et. al., 2012). Bellagio Sustainability Assessment and Measurement Principles (STAMP) are presented in the Figure 4.

Figure 4. Bellagio STAMP



Source: Bell and Morse (1999, p. 17)

Sheate et al. (2001) highlight that the theory of sustainability assessment has largely evolved from work undertaken for environmental impact assessment (EIA), and more recently strategic environmental assessment (SEA), which is understandable given that sustainability assessment is often considered to be the "next generation" of environmental assessment (Sadler, 1999).

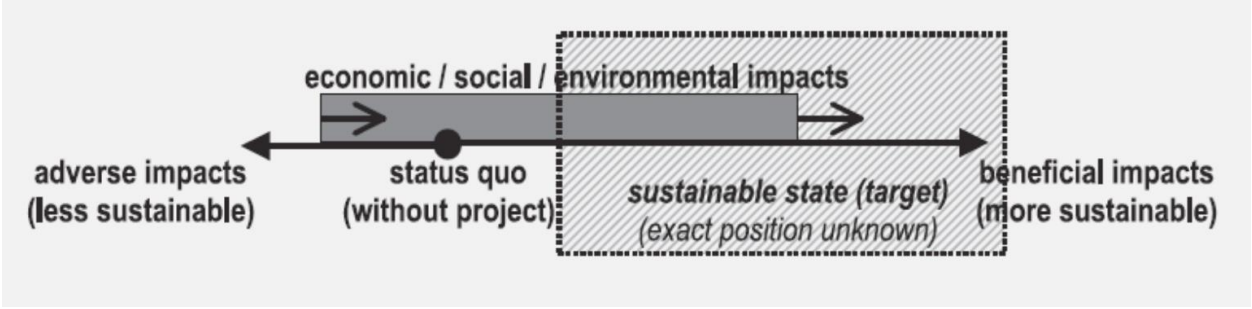
For the purposes of this research, the TBL model that was discussed in the previous chapter can be considered as an interpretation of sustainability that places equal importance on environmental, social and economic considerations in decision-making. Hence, the suggestion that EIA itself contributes to sustainability reflects the view that ‘‘environmental impacts are at the core of sustainability concerns’’ (Sadler 1999, p. 14).

In the literature, sustainability assessment is generally viewed as a tool in the “family” of impact assessment processes, closely related to environmental impact assessment (EIA) applied to projects and strategic environmental assessment (SEA) applied to policies, plans and programs (Devuyst, 2001, p. 9).

Pope et al. (2004) distinguishes two forms of approaches for sustainability assessment that would be compatible with the TBL model, namely EIA-driven integrated assessment and Objective-led integrated assessment.

EIA-driven integrated approach to sustainability assessment is defined by its reactivity, and tends to be “applied’ after a proposal has already been conceptualized. It aims to identify social and economic impacts of a proposal (in addition to traditional environmental impacts), and to compare these impacts with baseline conditions. It is done to ensure that *“impacts are acceptable”* (Pope et al., 2004, p. 602) as well as “*to identify mitigation measures through which adverse impacts might be minimized or avoided’’* (George, 2001, p. 98).

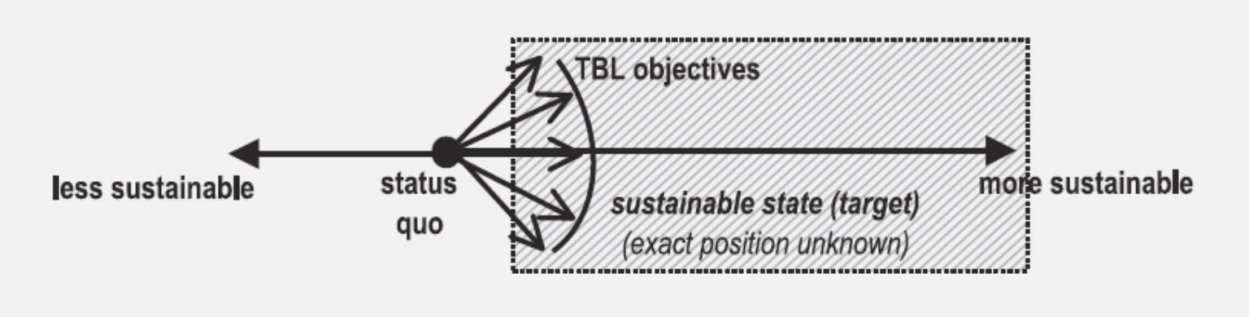
Figure 5. EIA-driven integrated approach to sustainable assessment



Source:. Pope et al. (2004, p. 602)

In contrary the Objectives-led integrated assessment reflects a desire to achieve a particular vision or outcome defined by integrated environmental, social and economic objectives. It assesses the extent to which the implementation of a proposal contributes to this vision. In this sense it is a more proactive approach described by “direction to target” characteristic (Pope et. al, 2004).

Figure 6. Objectives-led integrated approach to sustainable assessment



Source:. Pope et al. (2004, p. 605)

However, it is argued that there is a room for new conception (George, 2001; Sadler, 1999; Gibson, 2001) because EIA-driven integrated assessment tends to focus on minimizing negative impacts and reducing unsustainable practices, but fails to address the concept of sustainability as a societal goal. And even Objectives-led integrated assessments which are far more compatible with the concept of sustainability, tend to limit themselves to measuring whether or not a proposal represents a positive or negative contribution to sustainability.

Bell and Morse (1999, p. 31) advocate a five-step “systemic sustainability analysis” approach (SSA), to avoid indicators becoming *“a classic reductionist set of tools based on quantification”.* The stages are:

1. Identify stakeholders and the system;
2. Identify the main indicators;
3. Identify “band of equilibrium”;
4. Develop the “amoeba” diagram and

5. Review and extend the amoeba over time.
6. Consider sustainability in light of possible futures, which was added in 2003 edition (Bell and Morse 2003, p. 87).

In order to achieve sustainability on a destination level, it has been shown that it is necessary to integrate a range of sustainability concepts such as cleaner production, environmental management and tourism ecolabelling (Lee, 2001).

However, concepts can only be implemented efficiently if there are appropriate tools, as indicators considered to be, available to support them. This research, therefore, concentrates on the review of different indicators for sustainability assessment and gives only a brief overview of the main concepts for implementing sustainable tourism destinations. The main concepts for achieving tourism sustainability at a destination are presented in the Table 1.

To facilitate the development of an integrative framework for STI selection, it is important to distinguish between a concept and an indicator. A *concept* is an idea of how to achieve sustainability. Some examples of concepts are “ecotourism”, which is expected to contribute to both conservation and development of a destination (Tsaur et. al, 2005) or “ecolabelling” that is currently being practiced to protect the natural capital through improvements in existing environmental standards within the industry (Sasidharan et. al, 2002). Meanwhile, broadly speaking, an indicator is a measure, generally quantitative, that can be used to illustrate and communicate complex phenomena simply, including trends and progress over time (EEA, 2005).

Schiantez et. al. (2007) state that the concept constructs the basis for the development of objectives, strategies and measures to improve sustainability, while Selman (1999) identifies indicators as desirable instruments and/or measuring rods to assess and monitor progress towards sustainable development. According to UNWTO (1996), the indicators measure the information through which decisions makers could reduce the chances of making the wrong decisions.

Table 1. Concepts for achieving sustainable tourism destinations

Concepts	Definitions	Main objectives	Application in tourism
Ecotourism	Environmentally responsible tourism with a focus on travel and visitation to a relatively undisturbed natural areas (…) through a process which promotes conservation (Ceballos-Lascurain, 1983)	It seeks to promote and support the understanding, appreciation and conservation of the environment and culture, raising awareness and producing a feeling of appreciation for biodiversity and for local cultures	Is widely used and promoted as a marketing tool (Honey, 1999) but is criticized due to inadequate environmental assessments and audits, which causes many ecotourism destinations to be both hazardous and self-destructive (Tsaur et. al., 2005)
Ecolabelling	Voluntary, multiple-criteria-based, third party programme that awards a license which authorizes the use of environmental labels on products indicating overall environmental preferability of a product based on life cycle considerations (ISO 14020:1998)	Protect the natural environment on which the industry depends (Morgan, 1999), by informing consumer about the level of environmental performance of a certain product or service (Hale, 1996)	Is currently most prevalent at all geographic levels (UNEP, 1998:8)
Cleaner Production	The continuous application of an integrated preventive environmental strategy applied to *processes*, *products*, *services* to increase overall efficiency and reduce risks to humans and the environment (UNEP, 2001)	Prevention and control of waste generation	Slow and restricted implementation (Kavanagh, 1999)
Environmental Management	It's an attempt to control human impact on and interaction with the environment in order to preserve natural resources (Krishnamoorthy, 2008)	Improving human life quality by maintaining welfare for future generations	Adopted by some tourism agencies (TUI, BA Holidays) and by International tourism organizations such as WTTC and WTO
Tourism Carrying Capacity	Maximum number of tourists that can visit a single site without causing destructive physical, biological, economic or socio-cultural effects on environment, or an unacceptable	Prevention of major damage caused by overpopulation	Raised awareness (Coccossis *et al.*, 2001), but difficult to assess scientifically (Buckley, 1999)

	deterioration in tourists' satisfaction (UNWTO, 1983)

Source: Adapted from: Schianetz et. al.,(2007, p. 374)

In providing means for monitoring progress towards sustainability, indicators are also an important communication tool: *"Communication is the main function of indicators: they should enable or promote information exchange regarding the issue they address."* (Smeets and Weterings 1999, p. 5).

Although the strategy for sustainable tourism based upon the indicators in theory seems to be quite perfect, as a matter of fact it is rather complicated due to the selection process, the measurement, monitoring and evaluation of the set of relevant variables. Crabtree and Bayfield (1998, p. 1) state that *"Indicators quantify change, identify processes and provide a framework for setting targets and monitoring performance"* whereas Gahin et al. (2003, p. 662) consider that *"indicators provide critical information about current trends and conditions and help to track progress toward…goals"* .

It is noteworthy to mention the key point which distinguishes an indicator from basic data, which is its capacity to carry a meaning which exceeds its pure quantitative value (for example a temperature of 39C° certainly indicates the temperature of the body of a person, but also the fact that she is ill (Rechatin, 1997 cited Ceron and Dubois, 2003).

Indicators then help to summarize and simplify information, to enlighten certain phenomena, and to quantify already known problems. This significance comes from its interpretation and from its use within a diagnosis or an analysis.

Traditionally, measurement indicators could be categorized as being ''objective'' and ''subjective''. Objective indicators generally refer to quantitative data and the majority of them could be described through various equations. Subjective indicators are based on personal feeling and attitude, and are usually qualitative in nature. Objective indicators have been widely used because these were seen as more rigorous. However, Schneider and

Donaghy (1975, p. 308) argued that *"the use of objective measures alone as quality of life indicators is highly suspect''*. UNWTO (1995, p. 7 cited Miller 2001, 6-7) reveals the true position of qualitative measures, stating: *''Indicators of sustainability are not always quantifiable and may necessarily be somewhat subjective. This limitation does not in any way detract from their utility as management information in promoting sustainable tourism''.* Sustainable development is a means of pursuing social justice and a process of seeking balance between resource preservation and development. For a tourism destination, the balancing point differs based on the development stage of tourism in each destination. Therefore, a single set of consistent criteria may not be applicable to the assessment of sustainability in every destination. On the other hand, some destinations may not be able to conveniently offer a comprehensive set of indicator data. Miller (2001) noted that resident attitude surveys might facilitate indicators to cope with location differences and enable local input to a standardized set of indicators.

An indicator, is first a variable which can take a certain number of values (statistical) or states (qualitative) according to circumstances (temporal, spatial for example in the fields which we deal with). The values or the states of the indicators can sometimes be directly measured or observed; but in the majority of the cases they result from an analysis and a processing of basic data. This processing is more or less sophisticated and when it leads to a high degree of combination and aggregation, one rather tends to speak about *indexes:* there is thus no difference in nature between indexes and indicators, just a difference in complexity (Gallopin, 1997).

3.3. A Framework for developing sustainable tourism indicators

In this section framework for the selection of sustainable tourism indicators is provided. Generally, indicators used within Sustainable tourism development models should satisfy a

number of criteria, as outlined by the European Commission (2005, p. 4) and Kristensen et al. (2006, p. 3). According to this, individual indicators should.

- capture the essence of the issue and should have a clear and accepted normative interpretation;
- be robust and statistically validated;
- be responsive to policy interventions;
- be measurable in a sufficiently comparable way across Member States;
- be timely and susceptible to revision.

Furthermore, a portfolio of indicators should adhere to the following principles (European Commission 2005, p. 5):

- the portfolio of indicators should, as far as possible, be balanced across different dimensions.
- the indicators should be mutually consistent within a theme.
- the portfolio of indicators should be as transparent and accessible as possible.

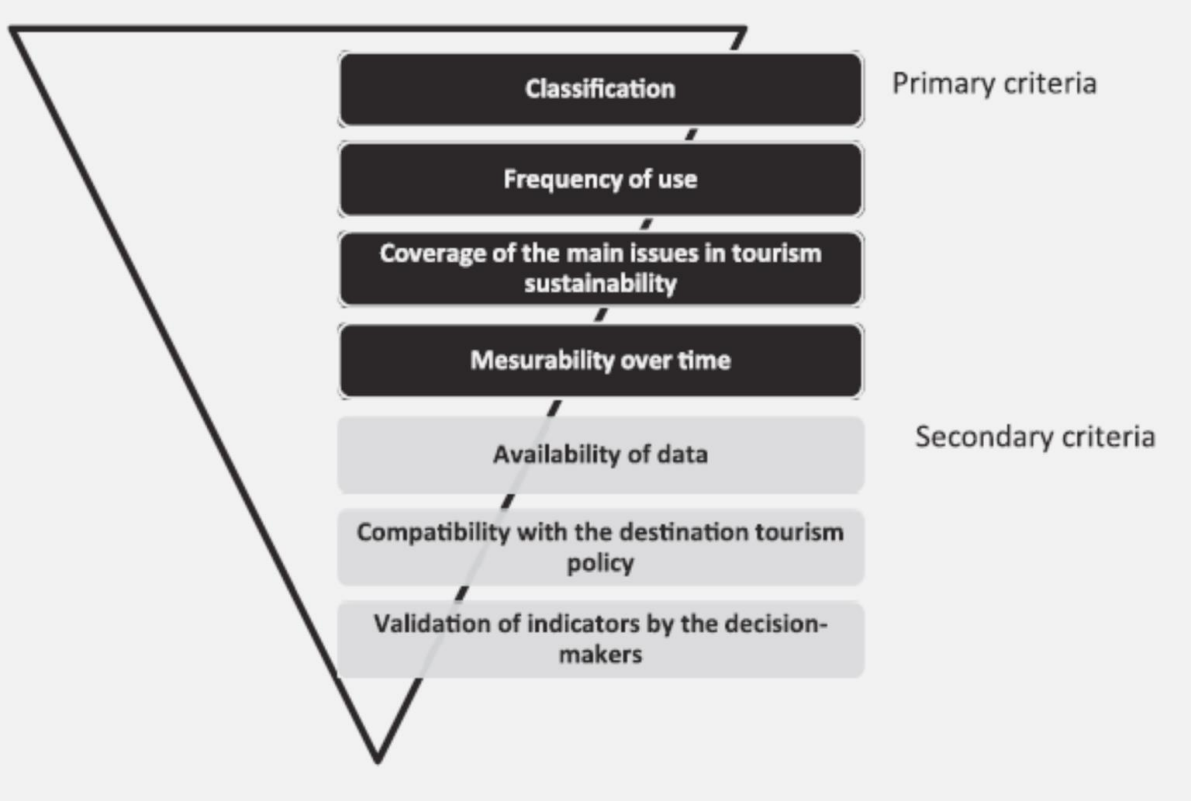
Stoeckl et al. (2004) highlight a difference between indicators that seek to:

a) evaluate the past and current situation with a view towards assessing progress towards sustainability;
b) make predictions about what might happen in the future, assessing the impact of resource use and resource use changes on sustainability; or
c) influence future directions by developing policies which aim to encourage progress by changing behaviour.

They suggest that these different objectives require different forms of indicators and whilst they do not relate these insights to a particular framework, their argument illustrates how any indicator selection must start from having a coherent and consistent understanding of what aspect of sustainability is trying to be measured.

Furthermore, Tanguay et. al. (2012) consider two types of criteria for identifying STIs, namely: primary criteria and secondary criteria (Figure 7).

Figure 7. Selection Criteria for STI



Source: Tanguay et. al. (2012, p. 5)

The four primary criteria are designed to reduce the initially discovered indicators to a more concise list, which covers the sustainable development dimensions and issues as well as the initial list does. Meanwhile, the three secondary criteria for selecting the STI are focused on securing indicators that are applicable for a specific destination.

Shianetz et. al. (2007) also suggest some guidelines for STI selection for tourism destinations:

- Time perspective – are you monitoring progress or predicting consequence? Decision-making tools are used either to investigate where change is needed (retrospective tools) or to evaluate the consequences of a proposed change (prospective tools).
- Spatial focus – are you assessing globally or on a site-specific basis?
- Focus for change – are you looking at technology or ecosystems? The focus for change reflects whether the requirement is within the "techno-sphere" (e.g. materials, products, technology choices or the performance of a business) or in the "ecosphere" (e.g. rearrangement of the landscape or land management).
- Effects considered – what types of impacts need to be included? Are the STI designed based on TBL model or they consider only partial impacts?

Based on the results of a Delphi survey Miller (2001, p. 352) suggests the STI to be:

- Measurable – the author notes that traditionally quantitative data have been used because of its credibility, yet he recognizes the need for qualitative data;
- Policy relevant – STI should be developed in accordance with the principles of sustainable development and sustainable tourism since it is argued that *"the very process of developing indicators contributes to the creation of a better definition of sustainable development"* (Moldan and Bilharz, 1997 cited Miller, 2001)
- And to generate public support emphasizing the role of community participation.

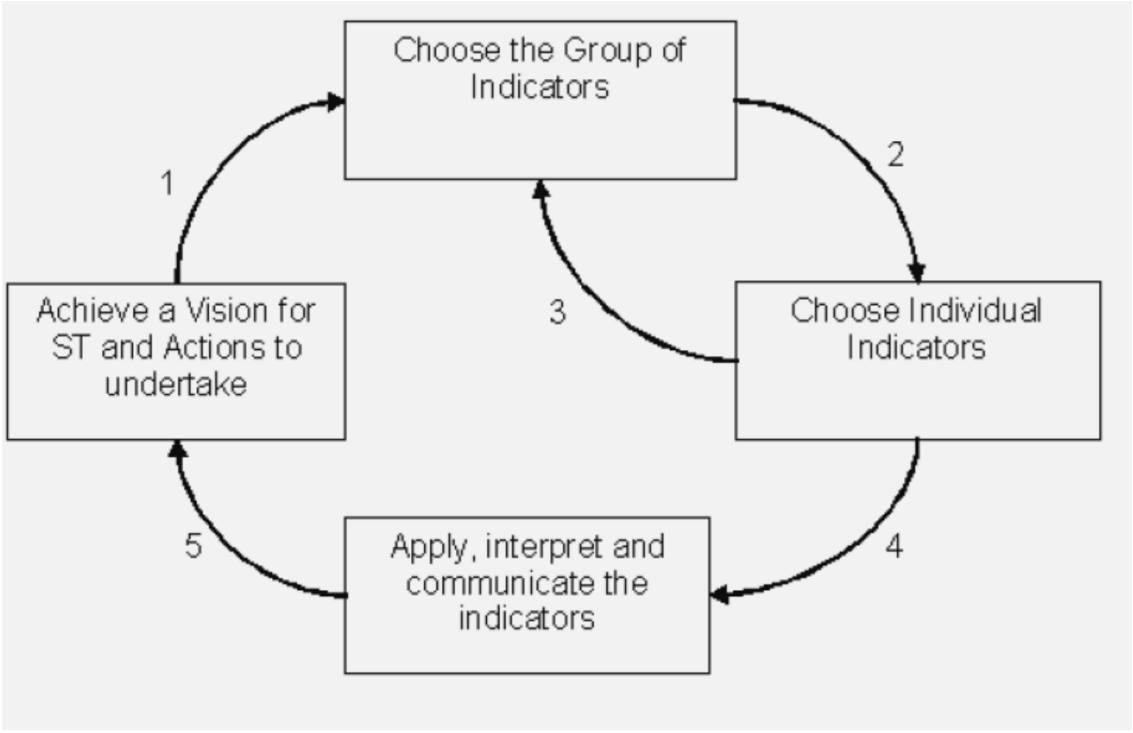
In the Technical Report on Methodological work on measuring the sustainable development of tourism, indictors have been selected with regard to seven criteria, where the first criteria is the most important (European Commission, 2006, p. 9):

1. Relevant with regard to interactions between tourism and the environment.
2. Corresponding to the different areas within DPSIR framework.
3. Frequent in existing sets of tourism sustainable development indicators.
4. The data availability should be taken into account.

5. Suitable for different geographical levels, whereas indicators for special tourism areas need to be supplemented (see also half-time conclusions).
6. Clear to understand and possible to connect to general accepted environmental goals.
7. Limited number of indicators.

The UK Office of National Statistics distinguishes the following stages in STI choosing cycle (Figure 8).

Figure 8. The indicator selection cycle



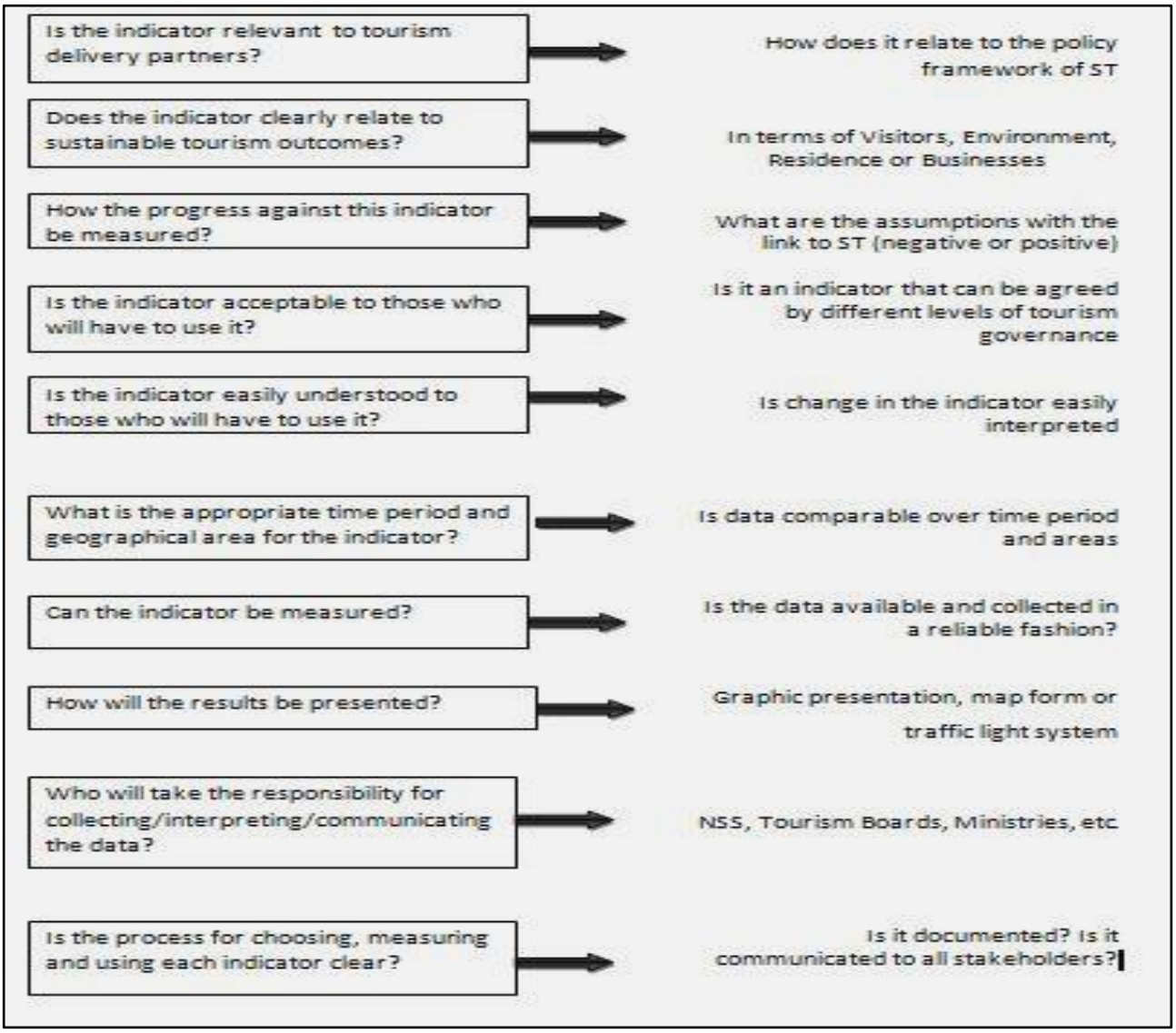
Source: ONS (2011, p. 9)

The first stage of this process is to select the broad groupings for indicators. This grouping is selected using a combination of strategic objectives, stakeholder consultation. Once the overall group of indicators is established (stage one), the individual indicators can be selected

(stage two). Then these have to be reassessed against the overall group criteria (stage three). The chosen indicators are applied and the results interpreted and communicated (stage four).

The results should be checked against the original objectives and action plans for the strategy, and any revisions (to the strategy, actions or to the indicators) carried out (stage 5).

Figure 9. The selection process for individual indicators



Source: Adapted from: ONS (2011, p.11)

Nevertheless, when it comes to the phase of selection of individual indicators the questions outlined in the Figure 9 should be taken into account. These questions aim to contribute to the body of existing criteria that are required for developing a "good" set of indicators.

3.4. Indicators as tools for assessing sustainability

In less than two decades, since the idea of sustainable development became established in policy and academic circles, the number of indicators produced has become daunting although there have been few practical assessments of the status of sustainable tourism at specific locations, partly because standardized, evaluative criteria have yet to be developed (Ross and Wall, 1999). Thorough measurements of all aspects and implications are almost impossible to acquire given the multitude of interrelated variables involved (Wall, 1996). Therefore, this study tries to develop a reasonable method to evaluate the sustainability of Armenia as a touristic destination.

When looking at the historical background indicators were expected to capture and translate rather a complex reality. A classic example of this context can be considered Gross National Product (GNP) which was designed as a base of the nation's wealth and growth. As Frouquet (1980) noticed the fact that GNP as an indicator was supposed to enable to measure trends, and to compare situation between countries, wasn't a subject of criticism as long as the economic growth remain at a high level (with annual increase of about 4%).

However, with the 1968 oil crisis and the rise of environmental concerns the context of construction of indicators changed. The 70s were thus marked by the work on the social indicators which were intended to correct the economicist flow of GNP (Campo Urbano, 1978 cited Ceron and Dubois, 2003). Later, the rise of environmental consciousness and the creation of related institutions was followed by the construction of environmental indicators (Briassoulis, 2001), answering a technical and administrative demand.

With the Brundtland report and the Rio Summit being launched, international, national, local, public and private organizations have all embarked on efforts to provide measures of nature's and society's long-term ability to survive and prosper together, as well as to guide planning and policy making. Indicators have been developed to complement and augment the default measure of progress, gross domestic product (GDP), which is a measure of a country's overall official economic output in the formal sectors.

These indicators intend to reflect a more extensive perspective of what comprises progress, and aim to refine the conceptualization of wealth, capital, and development. Examples include the Human Development Index developed by the United Nations Development Programme (UNDP) and the gross national happiness indicator of Bhutan. Other measures focus more specifically on the state of the natural environment, including the WWF's Nature's Living Planet Index and the Happy Planet Index of the New Economics Foundation.

Many companies report on sustainability, including through CSR reporting. More than 1,500 organizations from 60 countries have used the guidelines from the Global Reporting Initiative (which works in cooperation with the United Nations Global Compact) to produce sustainability reports. Over 1000 reports were submitted to the initiative in 2008, a 46 percent increase from 2007 and 2008 (Albermarle, 2010).

In an attempt to clarify the indicator selection process, efforts have been made to establish frameworks, organizing the development and selection process into a series of easily communicable steps. Many indicator sets and monitoring frameworks consist of indicators/measures that are selected in an ad-hoc manner (see for example Waldron and Williams' Whistler case study, 2003 cited White, et. al., 2006).

The DPSIR framework (Driving force; Pressure; State; Impact; Response) is an approach often referred to in the context of SDIs, for example forming the basis for the European Environment Agency (EEA) environmental indicators set. The concept underlying the DPSIR framework is cyclical: human activity exerts *Pressures* on the environment resulting in

changes in its *State*; such changes will have an *Impact* on human and ecosystem health which in turn may illicit a *Response* for corrective action and changing habits, that consequently *Drives* future activity and new *Pressures* and changes in *State* (Smeets and Weterings, 1999). Indicators can be developed for each component of DPSIR and, crucially, for the relationships and links between them. Gabrielsen and Bosch (2003, p. 9) provide useful examples of functional indicators for each stage:

Driving Force indicators describe social, demographic and economic aspects of society which govern consumption and production patterns. Population growth is a primary indicator for this component.

Pressure indicators are concerned with the outcome of human activity and the resultant pressure exerted on natural environments, such as pollutant emissions or development pressures on land.

State indicators are concerned with the quantity and quality of phenomena at any given time and place, for example fish stocks or atmospheric carbon dioxide concentrations.

Impact indicators may be easily confused with state indicators; they are however fundamentally concerned with "function", and how this may be altered as a result of *P* and *S*, rather than condition: *"In the strict definition impacts are only those parameters that directly reflect changes in environmental use functions by humans"* including impacts on human health. (EEA 2003, p. 8).

Response indicators describe the actions taken responding to the identified impacts, such as recycling rates.

Driving force – Pressure linkages can be described by 'eco-efficiency' indicators, which show how efficient a process is at reducing the resulting pressure; this will often relate to technological progress.

Pressure – State relationships can give an indication of the time delay within a natural system. Such an indicator could provide important information to facilitate predicting future scenarios, potentially pre-empting the problem.

State – Impact indicators could similarly provide important insight into potential consequences in the future, acting as an 'early warning system' facilitating preventative action.

Impact – Response indicators can illustrate how society perceives a specific problem as this will tend to govern any response initiated.

Response – Driving Force/ - Pressure/ - State/ - Impact indicators can convey how effective measures taken are at achieving the desired goal.

Whilst the utility and convenience of the DSPIR model approach to indicator selection makes it a popular choice, however, other forms of system thinking (e.g. Resilience, see Gunderson and Holling, 2001) can be as well considered. Moreover, Bell and Morse (2003) argue that there is an inherent risk that adopting the DPSIR approach, particularly focusing on the 'Response' element, will inadvertently encourage 'end-of-pipe' measures – simplistic and mechanical quick fixes, rather than the preferable adaptive management approach based in systems thinking. They provide alternative frameworks such as using the concept of capitals, domains and/or system orientations.

Capital considers sustainability in terms of capitals (natural, human, social, physical and financial) and context (trends, shocks, stresses).

Domains consider "tables" of indicators that cover common denominator areas of concern that consistently arise in reviews of existing SD indicator sets, for example, resources, pollution, biodiversity, local needs, quality of life. (Confusingly, Bell and Morse label these as "indicator frameworks"; however, following the above discussion regarding what a framework is, we would dispute this and hence refer to them as "tables" not frameworks).

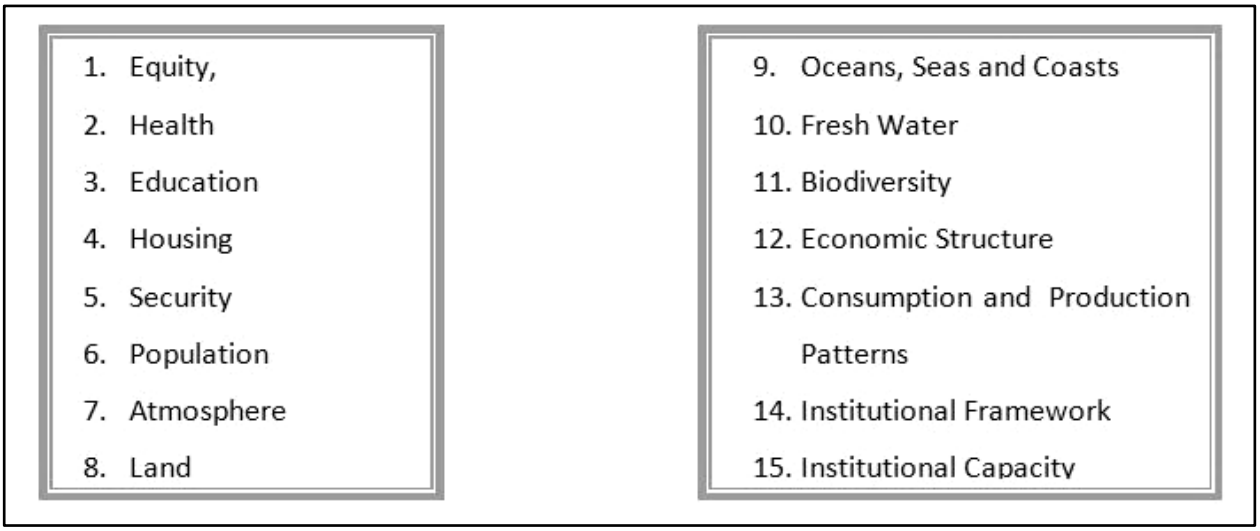
System orientator approaches stem from Bossel (1999) who lists the criteria that indicators must cover to measure the sustainability of any system, rather than developing indicator sets in an ad hoc way. These criteria are: existence, effectiveness, freedom of action, security, adaptability, co-existence and psychological needs (see Bell and Morse 2003, p. 37). Thus Bossel (1997) provides examples of indicators covering a number of domains (e.g. welfare, material resources, environmental burden), that he claims provides information about the SD potential for all sectors of the overall system. However, the analysis does not show how his initial criteria map on the results and given that it is the process of doing this selection and applying them, rather than the final results that is instructive, the full merits of his approach remain unclear.

Among the earliest studies to deal with tourism planning on the basis of sustainability and the use of indicators is the ECOMOST project, which was promoted by the International Federation of Tour Operators (IFTO) and part-funded by the European Union. This project´s aim was to create a model for sustainable development based on an analysis of tourism development on the islands of Mallorca and Rhodes. The system of indicators was used for in order to identify the critical problems in the destination, and to develop proposals concerning the actions required to reach higher levels of sustainability (Hughes, 1994 cited Rebollo and Baidal, 2009).

The UN Commission on Sustainable Development, in accordance with chapter 40 of Agenda 21 have proposed a core set of 58 indicators, set within 15 themes, 38 sub-themes and organized under the headings of “the four primary dimensions of sustainable development”. This structuring resulted from comprehensive testing and consultation and has its roots in the DPSIR framework. The 58 core indicators, as presented in the Annex 4, represent the “priority issues for countries and the international community”.

Based on Social, Environmental, Economic and Institutional perspectives the 58 indicators are classified into the following themes presented in the Figure 10:

Figure 10. Themes for classifying SDI



Source: UNCSD (2001)

Over the past 30 years, environmental policies and related reporting activities adopted by members of Organisation for Economic Co-operation and Development (OECD) have steadily evolved. This evolution has been largely driven by increased public awareness of environmental issues, their international aspects and their linkages with economic and social issues. Therefore, a set of indicators was developed by the OECD to " (…) *further strengthen countries' capacity to monitor and assess environmental conditions and trends so as to increase their accountability and to evaluate how well they are satisfying their domestic objectives and international commitments"* (OECD, 2003, p. 4).

The environmental indicators proposed by the OECD (2003) are organized into several categories, each corresponding to a specific purpose and framework.

- The Core Environmental Indicators (CEI) are designed to help track environmental progress, covering issues that reflect the main environmental concerns in OECD countries and are classified following the P-S-R Model.

- The Key Environmental Indicators (KEI) are a reduced set of the core indicators, aimed at informing the general public and providing key signals to policymakers.
- In addition to the CEI and KEI, there are Sectoral Environmental Indicators (SEI), designed to help integrate environmental concerns into sectoral policies; indicators derived from environmental accounting, designed to help 'integrate environmental concerns into economic and resource management policies'; and
- Decoupling Indicators (DEI), to measure the decoupling of environmental pressure from economic growth.

3.5. Indicators for assessing sustainability in tourism

When discussing SDI in the tourism sector indicators created by the WTO from 1992 onwards are especially relevant. The World Tourism Organization's proposals for the sustainable planning of tourism also led to calls for the use of indicators (WTO, 1995). The definition of such indicators has become an aim shared by a large number of organizations.

The publication of a practical guide for the development and use of indicators (UNWTO, 1996) is incredibly worth to mention in this context. Starting with that publication, workshops were held at regional levels and case studies analyzed by applying different indicator systems to specific destinations (Dymond, 1997; Coccossis et al., 2001; Cottrell and Duim, 2003). The experiences resulting from these case studies, together with the work from other institutions, were finally published by the WTO as "Guidebook: Indicators of Sustainable Development for Tourism Destinations" (UNWTO, 2004).

According to the latter work, a set of sustainable tourism indicators can be defined and classified into three groups:

- Key indicators of sustainable tourism. These include the basic information needed for the management of sustainable tourism in any destination. This group of indicators is

used to evaluate key issues for the destinations, including tourism intensity, seasonality of demand, effects of tourism on the local community and management of the waste generated.

- Complementary indicators for specific ecosystems. These indicators evaluate core factors shaped by the specific characteristics of a given destination (i.e., coastal areas, islands, mountain destinations). On some occasions, they involve a more accurate definition of the key issues.
- Specific site indicators. These evaluate important issues regarding the management of the tourism destination that are not taken into account by the key and specific ecosystem indicators, and that can only be defined for the destination under study. Consequently, these are not designed for the comparative analysis of destinations.

The UNWTO distinguishes specific baseline issues which are correlated with appropriate baseline or "universal" indicators. Table 2 is presenting the collection of the "Baseline Issues – Baseline Indicators" covered in the Guidebook (UNWTO, 2004).

Table 2. Baseline issue - baseline indicators for sustainable tourism

Baseline Issue	Baseline Indicator(s)
Local satisfaction with Tourism	Local satisfaction level with tourism
Effects of tourism on communities	• Ration of tourists to locals (average & peak period/days) • % who believes that tourism has helped bring new services or infrastructure (questionnaire-based) • Number & capacity of social services available to the community (% which are attributed to tourism)
Sustaining tourist satisfaction	• Level of satisfaction by visitors • Perception of value for money • Percentage of return visitors
Tourism seasonality	• Tourist arrivals by month or quarter (distribution throughout the year) • Occupancy rates for licensed (official) accommodation by month (peak periods relative to low season) and % of all occupancy in peak quarter or month) • % of business establishments open all year • Number and % of tourism industry jobs which are permanent or full-year (compared to temporary jobs)
Economic benefits of tourism	• Number of local people (& ratio men to women) employed in tourism (also ratio of tourism employment to total employment) • Revenues generated by tourism as % of total revenues generated in the

	community
Energy management	• Per capita consumption of energy from all sources (overall, and by tourist sector- per person day) • % businesses participating in energy conservation programs, or applying energy saving policy and techniques • % of energy consumption from renewable resources (at destinations, establishments)
Water availability & conservation	• Water use (total volume consumed and litres per tourist per day) • Water saving (% reduced, recaptured or recycled)
Drinking water quality	• % of tourism establishments with water treated to international potable standards • Frequency of water-borne diseases: number/ % of visitors reporting water-borne illnesses during their stay
Sewage treatment (waste water management)	• % of sewage from site receiving treatment (to primary, secondary, tertiary levels) • % of tourism establishments (or accommodation) on treatment system(s)
Solid waste management	• Waste volume produced by the destination (tonnes) by month • Volume of waste recycled (m3) / Total volume of waste (m3) (specify by different types) • Quantity of waste strewn in public areas (litter counts)
Development control	• Existence of a land use or development planning process, including tourism • % of area subject to control (density, design, etc)
Controlling use intensity	• Total number of tourist arrivals • Number of tourists per square metre of the site (e.g. at attractions), per square kilometre of the destination, - mean number/peak period average

Source: Adapted from: UNWTO (2004)

The UNWTO core indicators of sustainable development (Manning et. al., 1996) are an example of a top-down approach, which Twining-Ward and Butler (2002, p. 366) perceive as a *"useful starting point".*

The European Environment Agency (EEA, 2003) have developed a set of environmental indicators with the aim of: providing "a stable and manageable basis for indicator reporting by the EEA" prioritizing improvements in data quality from countries to European level; and "streamlining contributions to other indicator initiatives". 37 core indicators for environmental assessment are categorized in 9 thematic groups (Annex 7). However, in addition to the core set of indicators, the EEA has developed sectoral indicators as well. The EEA has distinguished 4 Policy Issues and suitable indicators for tourism sector.

Table 3. Sectoral indicators for tourism

Indicator	Policy Issue
Household expenditure for tourism and recreation	What causes the growth in tourism?
Tourism eco-labelling	Is the tourist industry adopting eco-labels?
Tourism intensity	Are maximum 'carrying capacities' being reached in some regions?
Tourism travel by transport modes	Is tourism's contribution to transport demand slowing?

Source: EEA (2003)

The most recent reference to the topic of STI is the Toolkit for sustainable destinations developed by the European Union (EU, 2013). The Toolkit identifies 27 core indicators (Table 4) divided in four sections:

- Section A: Destination Management Core Indicators - Destination management indicators emphasize important decision-making and communication issues that contribute to sustainable tourism management in the destination.
- Section B: Economic Value Core Indicators - Economic value indicators help track the contribution of tourism to economic sustainability in the destination
- Section C: Social and Cultural Impact Core Indicators - Social and cultural impact indicators focus on the effects of tourism on the residents and cultural heritage in the destination.
- Section D: Environmental Impact Core Indicators - Environmental impact indicators focus on those elements that are critical to the sustainability of the natural environment of the destination.

The Toolkit also identifies 40 optional indicators divided into the same four sections as the Core indicators. These indicators are more relevant to destinations that have more advanced sustainability systems in place.

The Core STI identified by the EU are presented in the Table 4.

Table 4. Core STI identified by the EU

1. Percentage of the destination with a sustainable tourism strategy/action plan, with agreed monitoring, development control and evaluation arrangement
2. Percentage of tourism enterprises/establishments in the destination using a voluntary verified certification/labelling for environmental/quality/sustainability and/or CSR measures
3. Percentage of visitors that are satisfied with their overall experience in the destination
4. The percentage of visitors who note that they are aware of destination sustainability efforts
5. Number of tourist nights per month
6. Daily spending per tourist (accommodation, food and drinks, other services)
7. Average length of stay of tourists (nights)
8. Occupancy rate in commercial accommodation per month and average for the year
9. Direct tourism employment as percentage of total
10. Percentage of tourism enterprises inspected for fire safety in the last year
11. Percentage of tourism enterprises actively taking steps to source local, sustainable, and fair trade goods and services
12. Number of tourists/visitors per 100 residents
13. Percentage of men and women employed in the tourism sector
14. Percentage of commercial accommodation with rooms accessible to people with disabilities and/or participating in recognised accessibility schemes
15. Percentage of visitor attractions that are accessible to people with disabilities and/or participating in recognised accessibility schemes
16. Percentage of the destination covered by a policy or plan that protects cultural heritage
17. Percentage of tourists and same day visitors using different modes of transport to arrive at the destination (public/private and type)
18. Average travel (km) by tourists to and from home or average travel (km) from the previous destination to the current destination
19. Percentage of tourism enterprises involved in climate change mitigation schemes—such as: CO_2 offset, low energy systems, etc.—and "adaptation" responses and actions
20. Waste volume produced by destination (tonnes per resident per year or per month)
21. Volume of waste recycled (percent or per resident per year)
22. Percentage of sewage from the destination treated to at least secondary level prior to discharge
23. Fresh water consumption per tourist night compared to general population water consumption per person night
24. Energy consumption per tourist night compared to general population energy consumption per person night
25. Percentage of destination (area in km^2) that is designated for protection
26. The destination has policies in place that require tourism enterprises to minimise light and noise pollution
27. Level of contamination per 100 ml (faucal coli -forms, campylobacter)

Source: Adapted from: EU (2013)

3.6. Summary

Overall, the application of the concept of sustainability assessment in tourism is still maturing and there are still lots of inconsistencies when it comes to the approaches and different concepts as well as tools for assessing tourism sustainability.

This chapter provides an overview of the main theoretical aspects and presents a brief description of the models and sets of indicators identified within tourism related literature and as being put forward by relevant organizations namely UNWTO and EU.

CHAPTER FOUR: The development of tourism in developing countries

4.1. Introduction

"Not withstanding many of the highly commendable motives for encouraging the growth of international tourism (…) the overwhelming reason why countries proffer themselves as tourist destinations is for economic benefits."

Archer and Fletcher, 1990

This chapter discusses the phenomenon of tourism development and monitoring processes undertaken in developing countries. For this reason different approaches of taxonomy are discussed trying to define the characteristics of developing countries. Further on, the motivations as well as the possible challenges while striving to use tourism as a shift towards overall macroeconomic development are presented. Moreover, the stance of developing countries in tourism competitiveness is examined in comparison with the developed economies.

4.2. Defining the "developing countries"

The UNDP, the World Bank (WB), and the International Monetary Fund (IMF) approach the issue of classification system based on countries' development attainment very differently (including as regards to choice of terminology).

Countries are divided into developed and developing according to their Gross National income (GNI) per capita per year. Countries with a GNI of US $ 11905 and less in 2010 are defined as developing by the WB (ISI, 2013). Another indicator used for the country's level of development is the Human Development Index (HDI), as developed and compiled by the United Nations Development Programme (UNDP). The HDI is conceptually broader than income measures since this composite measurement combines indicators of life expectancy, educational attainment and income (UNDP, 2013). In other words, HDI is an alternative to

purely economic assessments of national progress, such as GDP growth which better reflects the quality of people's lives and countries' achievements.

In addition, the country classification in the World Economic Outlook (IMF, 2013) divides the world into two major groups: (1) advanced economies and (2) emerging market and developing economies. This classification, however, is not based on strict criteria, it is rather done by summarizing some key indicators such as, GDP per capita, total exports of goods and services, population. Nonetheless, all of the above mentioned organizations designate about 20–25 percent of countries as developed. The group of developing countries is therefore large.

However, since no single definition of the term "*developed country"* is recognized internationally, the levels of development may vary widely within so-called developing countries. Some developing countries have high average standards of living (Sullivan and Sheffrin, 2003). Thus, all three institutions have found it useful to identify subgroups among developing countries (Table 5).

Table 5. Country Classification Systems in Selected International Organizations

	IMF	UNDP	World Bank
Name of "developed countries"	Advanced Economies	Developed Countries	High income countries
Name of "developing countries"	Emerging and developing countries	Developing Countries	Low- and middle- income countries
Development threshold	Not explicit	75 percentile of HDI distribution	US $ 6000 GNI per capita in 1987-prices
Type of development threshold	Most likely absolute	Relative	Absolute
Subcategories of "developing countries"	(1) Low income developing countries (2) Emerging and other developing countries	(1) Low human development countries (2) Medium human development countries (3) High human development countries	(1) Low income countries (2) Middle income countries

Source: Nielsen (2011, p. 19)

Existing taxonomies suffer from lack of clarity with regard to how they distinguish among country groupings. Where exactly to draw the line between developing and developed countries is not obvious, and this may explain the absence of a generally agreed criterion. Thus, as Nielsen (2011, p. 3) notes "*a developing/developed country dichotomy is too restrictive and that a classification system with more than two categories could better capture the diversity in development outcomes across countries*".

Nevertheless, when it comes to Armenia, all of the above mentioned three organizations classify it as a developing country (WB, 2013; IMF, 2013; UNDP, 2013). The adapted list of the developing countries by the ISI is presented as Annex 3.

Apart from the classification categories and indicators Tosun (2005) distinguishes three main groups of common features characteristic for developing countries, namely:

- Socio-Economic features – includes: Low level of living; lack of services of welfare state; high rates of population growth and dependency burdens; low per capita national income; low economic growth rates, increasing income inequality; high and increasing unemployment and underemployment; inadequate human resources; narrow resources base, low level of capital accumulation, dependence on primary products; declining terms of trade.
- Political features - High level of centralization in public administration system; wide-spread patron–client relationships; elite domination in political life; high level of favoritism and nepotism; inadequate or no democratic experience; high level of political instability; high level of clashes among supporters of different ideologies or tribes.
- Cultural features – Lack of education, a high incidence of health problems and widespread poverty; Exclusion of local people from socio-political life; Motivations to meet their basic needs and felt-needs by ignoring wider socio-political issues, etc.

4.3. Tourism as a tool towards development in developing countries: Myth or reality?

Even though tourism's contribution to worldwide gross domestic product (GDP) is estimated at some 5% and 30% of the global exports of services at over US$ 1 trillion, figures prove it is one of the world's largest and fastest growing economic sectors (UNWTO, 2012). UNWTO annual report of 2012 also states that while countries across the globe face the challenge of unemployment, tourism can play a leading role in fighting a jobless recovery thus laying background for fostering development and fighting poverty since tourism's contribution to employment tends to be slightly higher and is estimated in the order of 6-7% of the overall number of jobs worldwide (direct and indirect). Moreover, tourism has a variety of impacts on the economic development which by all means leads to high living standards (Stynes, 1997).

Qian (2007 p. 64) notes that *"(…) for more than 40 years, tourism has been touted as a vital development agent, if not an economic panacea, for developing countries".* Akdag & Öter (2011) claim that in developing countries one of the prerequisites of economic development is to increase the export revenues. In these countries, a shift from traditional agricultural economy to an industry-based economy is a must. In this sense tourism industry can be considered as a revenue generator that contributes to the overall improvement of macroeconomic indicators. Current economic conditions have emphasized the importance of tourism revenues as a remedy against economic crises.

The potential economic benefits of tourism are a major attraction for developing countries due to three pro-tourism arguments (Mill and Morrison, 1999):

1. the growing trend in demand for international travel (even regardless economic crisis);

2. the income elasticity of demand for tourism means that as the household incomes of people in the developed world increase, more disposable income will be directed towards travel.;
3. developing countries are in need of foreign exchange earnings to support their economic development initiatives and to satisfy the demands of their own residents.

Besides generating foreign exchange earnings and investments, tourism has stimulated economic diversification and job creation in many communities around the globe. Owing to its economically lucrative nature and irrepressible role in nourishing vital economic capillaries, tourism is ostensibly promoted and marketed on a global scale by private and public sectors of the tourist-generating countries as well as host countries (Sasidharan et.al., 2002).

Several Asia Pacific countries have developed their economies with the contribution of tourism revenues. Even countries claiming themselves economically closed to the world (Cuba) have started understanding and are protecting the tourism industry (Agdak and Oter, 2011).

Furthermore, for these countries tourism is an important incentive for conservation as well (Gössling, 1999). Most of the national parks in Africa, for instance, would no longer persist without tourism (Vorlaufer, 1997).

Burton (1995) argues the fact that unlike other industries that are single resource-based tourism development depends upon various ranges of over-related resources such as climatic conditions, topographic features, ecosystems and habitats. Lumsdon and Swift (1998) in turn distinguish three core forms of tourism demonstration in developing countries, namely:

- nature-based (or eco-) tourism,
- coastal (or beach) tourism, and
- heritage (or cultural) tourism.

However, as a result of increasing competition that exists in the international tourist market between the existing tourist destinations and the emergence of new tourist destinations, achievement and particularly maintaining the competitive advantage is a challenge and primary goal of each tourist destination (Dimoska and Trimcev, 2012). In this sense if the developing countries intend to use tourism as a shift towards development, then protecting and strengthening of their comparative advantages should be a must.

There is a vast body of literature about competition, competitive advantage and competitive identity in tourism industry (Vodeb, 2012). Competition between destinations plays a critical role in shaping the global tourism industry (Crouch and Ritchie, 2006). Tourism destination are becoming competitive as more and more destinations look at the tourism to become the new economic generator replacing activity in agriculture, mining, and manufacturing (Goeldner and Ritchie, 2006). The competitiveness abilities of tourist destinations is considered as an explicit way of showing the level of socio-economical development of tourist destination with a special review to quality of life (Angelkova et. al., 2012).

The concept of tourism destination competitiveness stems from the concept of competitiveness in general. Research about the competitiveness of destinations began in the early 1990s (Dimoska, 2012).

Still no universally agreed or widely adopted definition can be found, nor a universal model for competitiveness because of the complexity multi- dimensional, multi-faceted, relative nature of the concept. However, the most accepted definition of competitiveness from the national point of view is the one proposed by Waheeduzzman and Ryans (1996, p. 10), defining competitiveness as: *"the degree to which a nation can produce goods and services that meet the test of international markets while simultaneously maintaining or expanding the real income of its citizens".*

As for the definition of a destination competitiveness, Poon (1993 cited Wilde and Cox, 2008), believes that to be competitive, every destination has to follow 4 key principles:

- put the environment first;
- make tourism a leading sector;
- strengthen the distribution channels in the marketplace; and
- building a dynamic private sector.

Enright and Newton (2005, p. 341) concluded that *"a destination is competitive if it can attract and satisfy potential tourists, and this competitiveness is determined both by tourism-specific factors and a much wider range of factors that influence the tourism service providers".*

It is not surprising that destination competitiveness is also a very broad and multidimensional concept. According to Ritchi and Crouch (2003) destination competitiveness comprises 6 dimensions, namely: economic, political, social, cultural, technological and environmental.

Nevertheless, all authors agreed "...it is clear that while there is not yet a widely accepted causal model of destination competitiveness, there is agreement that the construct comprises economic, social, cultural and environmental dimensions. A competitive destination is one that features profitable tourism businesses, an effective market position, an attractive environment, satisfactory visitor experiences, and supportive local residents" (Pike, 2008, p. 41).

Many destinations in the emerging and developing regions of the world have managed to fruitfully develop and exploit their tourism potential to attract and cater to visitors from both domestic and international markets (WEF, 2011). However, when it comes to facts and figures, the review of the Travel & Tourism Competitiveness Index (TTCI) form 2007 up to 2011 (Figure 11) states that the top ranks of the Index are invariably dominated by advanced economies, while tourism growth is largely driven by emerging economies.

Figure 11. Comparison of advanced and emerging economies

Rank	2007	2008	2009	2011
ADVANCED ECONOMIES (33)				
Average rank	18.6	18.2	18.2	18.5
Highest rank	1	1	1	1
Lowest rank	44	51	46	52
EMERGING ECONOMIES (89)				
Average rank	77.4	77.6	77.6	77.4
Highest rank	18	26	27	25
Lowest rank	122	122	122	122

Note: The table considers only those 122 economies that are present in all four editions of the Index.

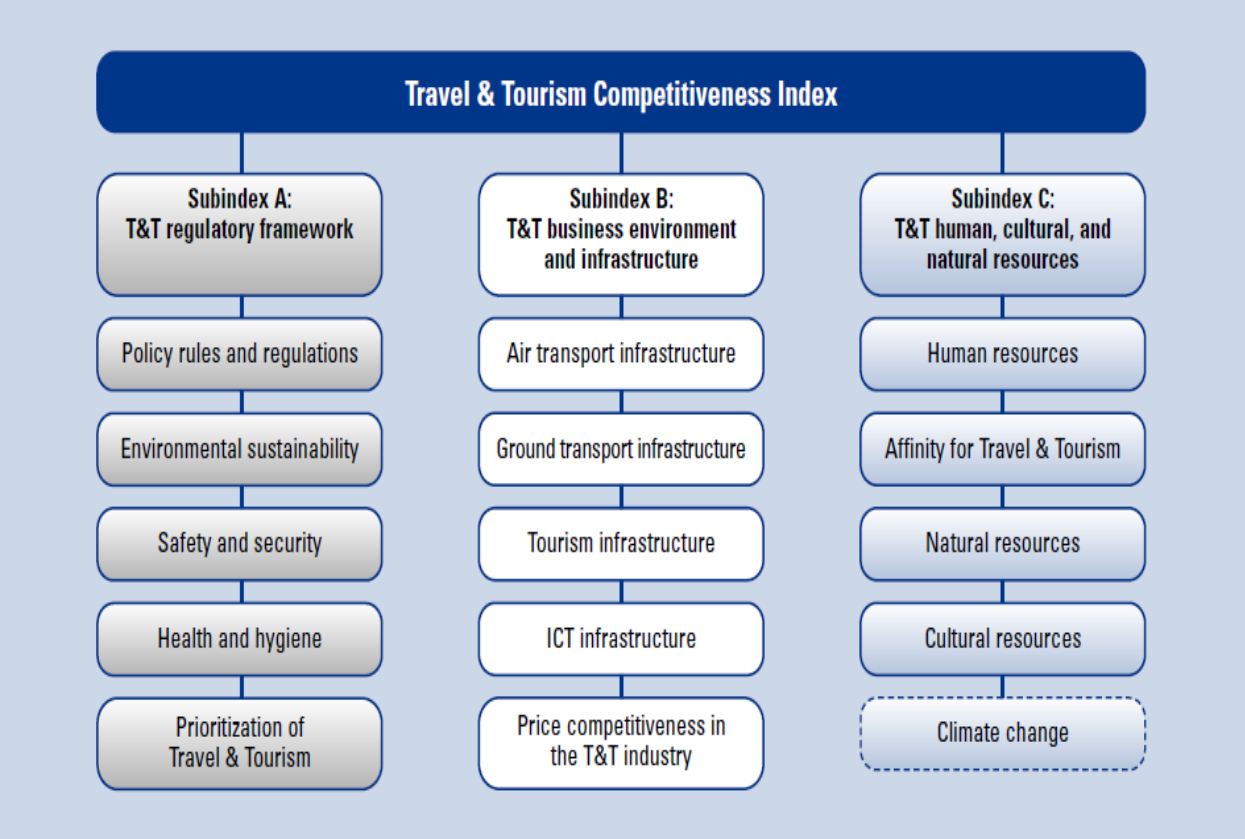
Source: WEF (2011, p. 46)

The Travel & Tourism Competitiveness Report (TTCR) was first launched on March 1, 2007 by the World Economic Forum (WEF). The Travel & Tourism competitiveness Index (TTCI) was developed to measure T&T competitiveness of different economies. The TTCI is the most comprehensive analytical tool which estimates the factors and policies that make it attractive to develop T&T industry in different countries. The index includes both hard data (WTTC; UNWTO) and soft data - survey results of the World Economic Forum's annual Executive Opinion Survey. The TTCI aims to "measure *the factors and policies that make it attractive to develop the T&T sector in different countries"* (WEF, p. xiv).

The Travel & Tourism competitiveness Index is composed of a number of pillars which are grouped into three subindices:

- T&T regulatory framework
- T&T business environment and infrastructure
- T&T human, cultural and natural resources

Figure 12. The Travel & Tourism competitiveness Index



Source: WEF (2011, p. 5)

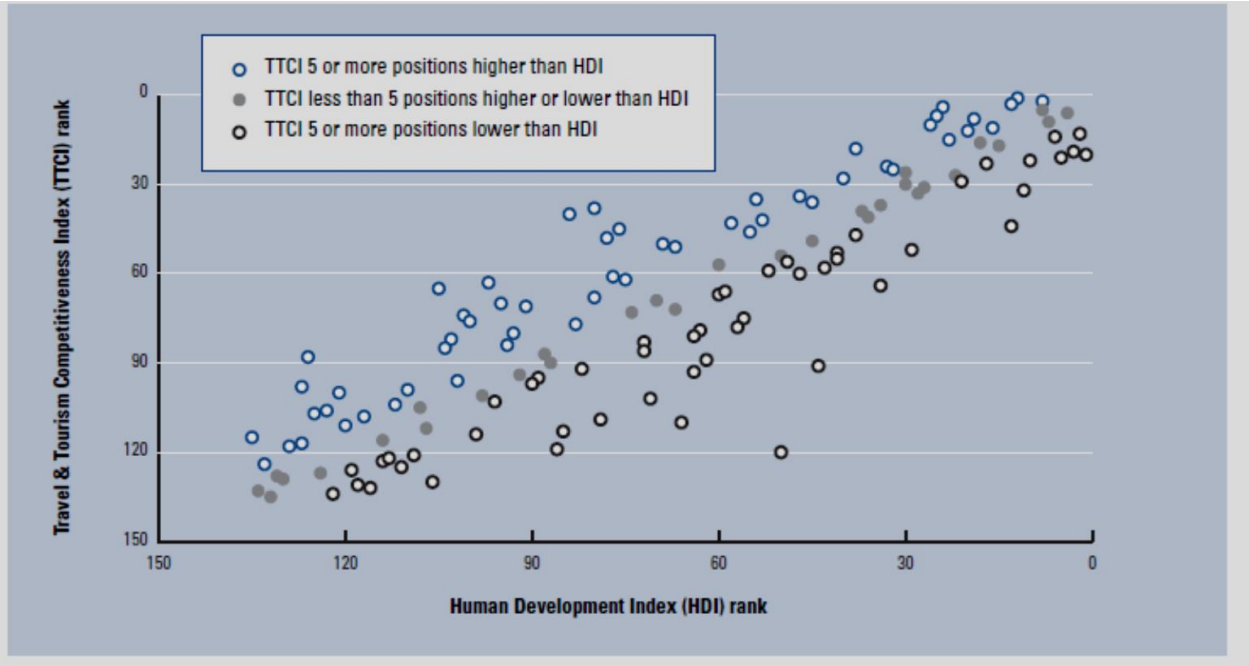
As in previous editions, the top ranks in the 2013 edition of the Index are secured by the 33 advanced economies (WEF, 2013), meanwhile in the 2011 edition of the index developing economies started to enter the mix from rank 25: the top 24 ranks were all taken by advanced economies (WEF, 2011).

The analysis of the TTCRs emphasizes the fact that the ranking of a country is highly related to its level of development. Moreover, the advanced economies have been wealthier over a longer time because they started earlier with their overall development, as well as with their tourism development. They have had more time and more resources available to resolve basic issues, such as rules and regulation, safety and security, and health and hygiene; and to

build infrastructure, to provide necessary services, and invest in the quality of their human capital.

Consequently, given that the TTCI measures the overall "stock" of T&T competitiveness rather than improvements over time (the "flow"), developing economies rank lower on the TTCI, accurately reflecting their disadvantages in these areas.

Figure 13. T&T competitiveness relative to HDI



Source: WEF (2011, p. 48)

In this sense it's noteworthy the comparison of TTCI and HDI since both indexes are compared not according to their absolute values but on their rankings, which has the advantage that they would have the same value when perfectly positively correlated (overall, their correlation is high at r = 0.89) (WEF, 2011). Thus, the scatter plot in Figure 13. illustrates the close overall correlation between the HDI and the TTCI.

For the group of 31 economies around the diagonal (marked with a solid gray circle), the development of the tourism sector is broadly in line with what one would expect given the

general level of development, as the difference between a country's positions on each Index is less than 5 positions. For the group above the line, the TTCI rank is higher than the HDI rank; and for the group below, vice versa. Outliers on the top left-hand side represent countries where TTCI consistently exceeds HDI, such as Thailand, China, India, the Gambia, and South Africa, while those at the bottom right-hand side of the graph represent countries where conditions for tourism development have not kept pace with overall development (e.g., Libya and Kuwait).

The overall analysis confirms that, as a matter of fact, the developed countries tend to rank higher than countries at lower stages of development. In a way, this is inevitable because it reflects the better overall conditions in those economies. Moreover, comparison of rankings relative to stages of development shows that, given comparable resources, some economies are able to create rather better conditions for tourism development than others.

Even so, Fennell and Eagles (1990) note that tourism in developing countries is promoted primarily on the appeal of their natural resources and landscape. In this sense Butler (1990) claims that tourism in developing countries is oftentimes built around sensitive ecosystems. Hence, the scarcity of natural resources faced by most developing countries (Zhang et al., 1999) increases the susceptibility and vulnerability of these resources to tourism development activities in host destinations.

Furthermore, *"while tourism can bring positive benefits, good does not necessarily follow*" (USIP 2009, p. 3). And it is proved to be true as the proportion of money captured from international tourism by developing countries is generally low, with only 20–40% of the retail tourist price paid for a package tour remaining within the economy of the destination country due to the outflow resulting from imported services and goods, foreign ownership, etc (Gössling, 1999).

After the negative environmental and social impacts of tourism have been exhaustively discussed (e.g. Hunter and Green 1995; Urry, 1995) emerging economies started not perceiving tourism as a low-impact, non-consumptive development option.

Thus, "ecolabelling" of tourism products is being put forth by concerned parties (Middleton and Hawkins, 1998; UNEP, 1998, cited Sasidharan et. al, 2002) in light of the quintessential need to maintain the delicate balance between tourism development and the environment in these regions. In line with the paradigm of sustainable tourism it is believed that negative effects can be avoided or minimized if tourism development is thoroughly planned and controlled.

Therefore, in striving to prevent disorderly tourism development, in order to successfully overcome the daily changes that occur in turbulent surrounding, planning of sustainable tourism development occurs as the only way to do it successfully.

The Tourism Intelligence Unit at the UK Office of National Statistics finds that since tourism is a tool *"to aid or drive regeneration and economic development as well as enhancing the quality of life of visitors and host communities"* (ONS 2011, p. 3), therefore, it is strongly suggested to make or develop tourism in a more sustainable way which will eventually have a significant contribution to the sustainability of society in general.

4.4. Summary

To sum up with the classification of the countries is rather conditional. Because of the absence of unified criteria for the classifications the existing taxonomies tend to put the countries into subgroups within the main categories of developed and developing countries since they are rather broad concepts.

The role of tourism in these countries is getting more and more importance as being seen an effective way of shifting towards overall macroeconomic development. Even despite the low

ranking on the TTCI developing countries tend to show consistent development in terms of tourism competitiveness.

However, the lack of proper planning and monitoring can cause inevitable damages to the fragile ecosystems the tourism is being promoted on. Therefore, the promotion of development of strategies that pursue tourism sustainability, and the identification of specific sets of assessment models, adapted to specific conditions are strongly recommended

CHAPTER FIVE: Tourism development in Armenia

5.1. Introduction

Since the main objective of this research is to find out which specific indicators can be used for assessing tourism sustainability in Armenia, therefore this chapter gives an introduction to the country regarding geographic, socio-demographic and economic profiles to make clear to what kind of destination the indicators are supposed to be applied.

Moreover, institutional initiatives towards tourism development in the country are described mostly focusing on the actions undertaken and actors involved in the process. And, of course the current state of tourism in Armenia is described with emphasis being placed upon the travel and tourism sector competitiveness and approach to sustainability.

5.2. Geographic and socio-demographic profile

Armenia are is located 40 00 N, 45 00 E. The total area of the country is 29,743 sq km (country comparison to the world:143), of which 28,203 sq km of land and 1,540 sq km of water. By having a highland continental climate hot summers and cold winters are characteristic for Armenia.

Being a landlocked country Armenia borders with Azerbaijan-proper 566 km, Azerbaijan-Naxchivan exclave 221 km, Georgia 164 km, Iran 35 km, Turkey 268 km with the total land boundaries of 1,254 km.

The conventional long form for the country is Republic of Armenia (Հայաստանի Հանրապետություն [Hayastani Hanrapetut'yun]) which was put into use since the independence from the former Soviet Union on September 21, 1991. The Constitution was adopted by nationwide referendum on July 5, 1995, later on November 27, 2005

amendments were adopted through a nationwide referendum as well. The legal system is based on civil law system.

Figure 14. Armenia on the world map

Source: https://maps.google.pt/maps?q=armenia%20on%20world%20map&hl=en&biw=1280&bih=685&ie=UTF-8&sa=N&tab=il

The Republic of Armenia is divided into 3 branches, namely:

- Executive branch - represented by the Chief of the state, i.e the president, head of the government, i.e. the Prime Minister and the Cabinet, i.e. Council of Ministers appointed by the Prime Minister (See: World Leaders website);
- Legislative Branch – represented by the unicameral National Assembly or Parliament (Ազգային ժողով [Azgayin Zhoghov]) (See: Parliament.am);
- Judicial Branch – represented by the Constitutional Court and Court of Cassation (Appeals Court).

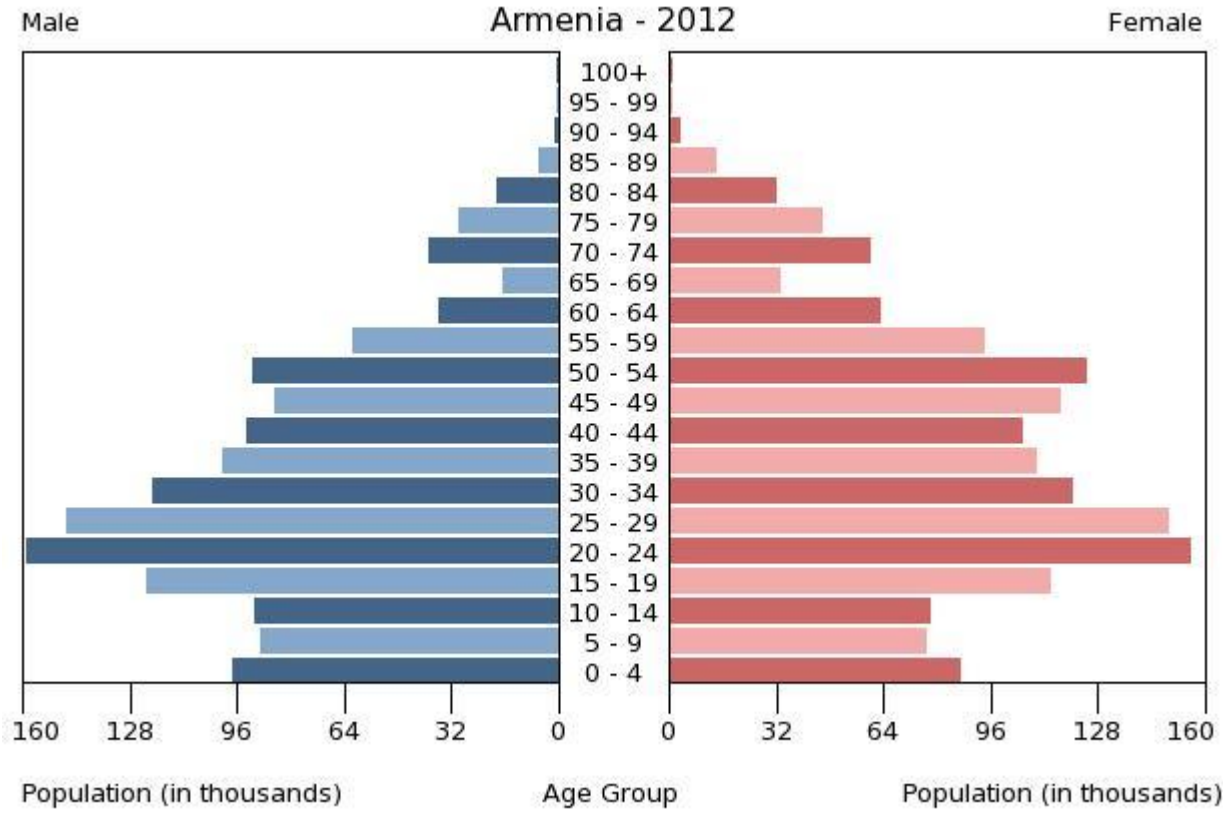
The country consists of 11 administrative divisions, i.e. provinces (մարզեր [marzer]), namely: Aragatsotn, Ararat, Armavir, Geghark'unik', Kotayk', Lorri, Shirak, Syunik', Tavush, Vayots' Dzor, including the capital Yerevan which is the largest city with the total population of 1.1 M people (National Statistical Service (NSS), 2012).

According to 2011 Census preliminary results with the 0.107% population growth rate the total population of the country is 3.1 M (country comparison to the world: 138) consisting of the following ethnic groups: Armenian 97.9%, Yezidi (Kurd) 1.3%, Russian 0.5%, other 0.3% Languages: Armenian (official) 97.7%, Yezidi 1%, Russian 0.9%, other 0.4% (2012 census). The 2011 Census also indicates the existence following religions: Armenian Apostolic 94.7%, other Christian 4%, Yezidi (monotheist with elements of nature worship) 1.3%.

The Population pyramid represented in the Figure 15 illustrates the age and sex structure of the country's population. The population is, therefore, distributed along the horizontal axis, with males shown on the left and females on the right. The male and female populations are broken down into 5-year age groups represented as horizontal bars along the vertical axis, with the youngest age groups at the bottom and the oldest at the top. The shape of the population pyramid gradually evolves over time based on fertility, mortality, and international migration trends.

The Republic of Armenia is officially a member of various international organizations such as Asian Development Bank (ADB), OSCE, UN, UNCTAD, UNESCO, UNIDO, UNWTO, World Trade Organization (WTO), etc.

Figure 15. Population pyramid of Armenia

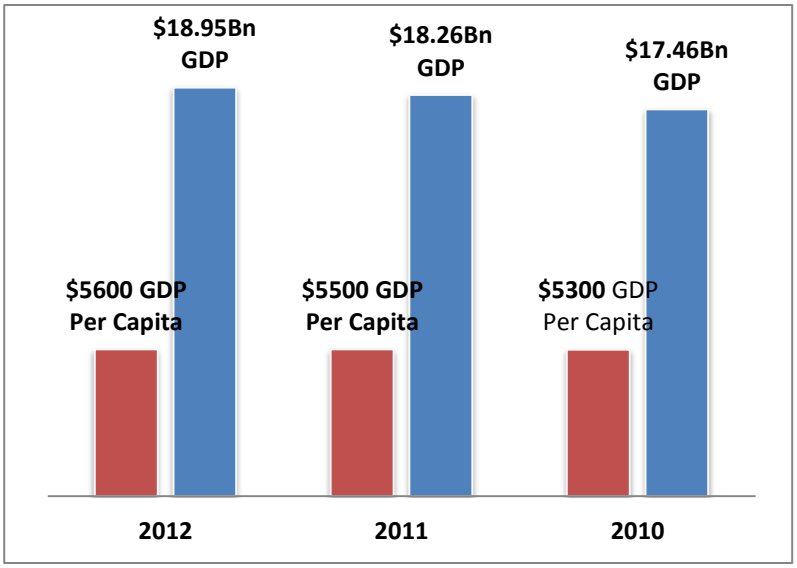


Source: CIA (2013)

5.3. Economic profile

As the Ministry of Economy of the Republic of Armenia claims after several years of double-digit economic growth, Armenia faced a severe economic recession with GDP declining more than 14% in 2009, despite large loans from multilateral institutions. Sharp declines in the construction sector and workers' remittances, particularly from Russia, led the downturn.

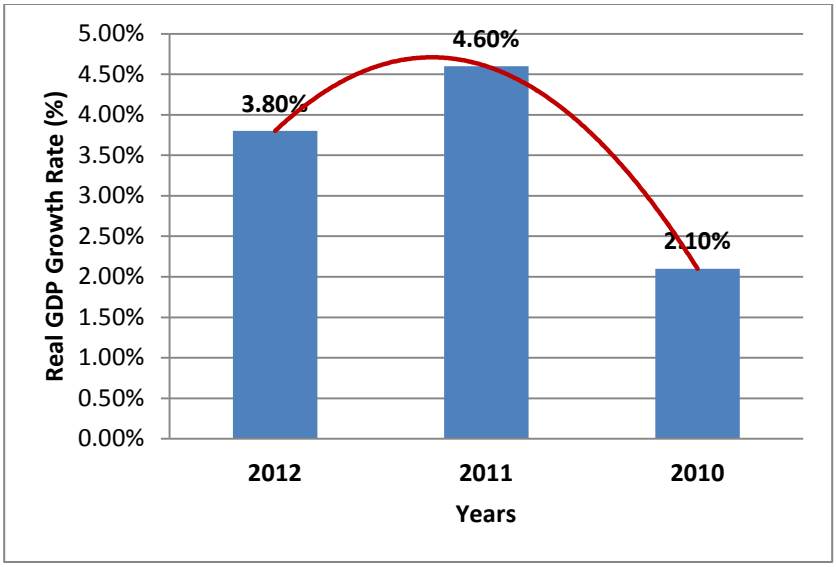
Figure 16. Armenia: GDP per capita & GDP (PPP)



Source: IndexMundi (2013)

Meanwhile, the Real GDP growth rate for those 3 years was respectively estimated as 3.8%, (country comparison to the world: 86), 4.6% and 2.1% .

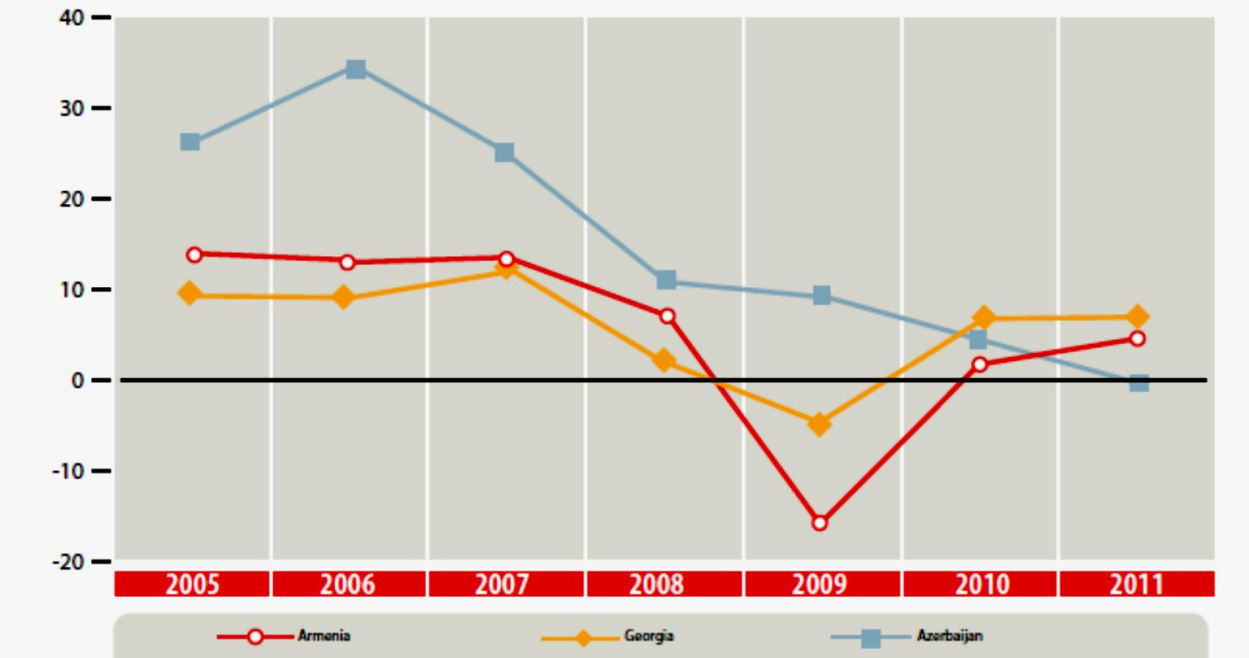
Figure 17. Armenia: Real GDP growth rate



Source: World Bank (2013)

Moreover, when considering the path of Real GDP growth from 2005 to 2011 in the context of neighboring countries the patterns are to a certain extent the same as shown in the Figure 18.

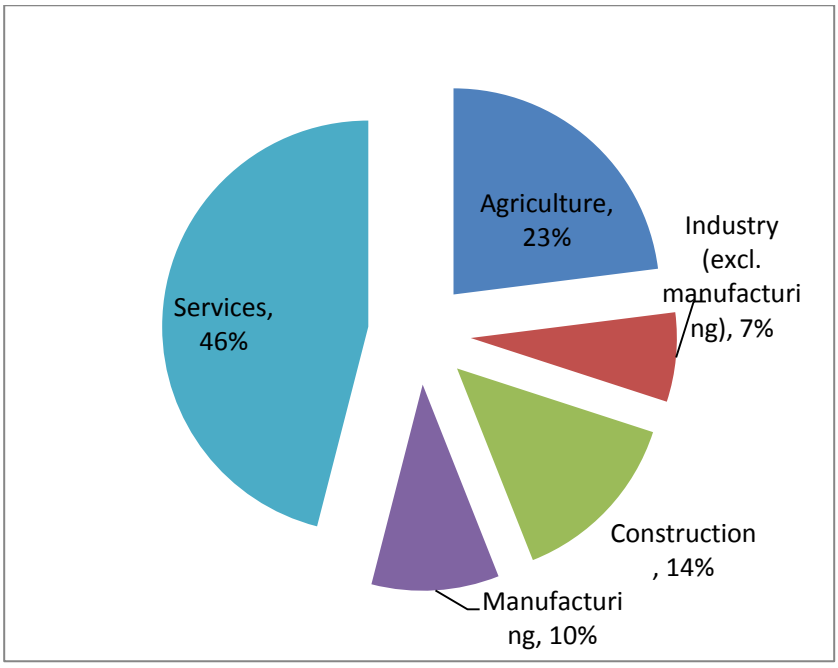
Figure 18**.** Armenia: comparison of real GDP growth rate with neighboring countries



Source: Economy and Value Research Center and EV Consulting (2012, p. 19)

Labor force in the Republic of Armenia as of 2011 is estimated 1.194 million putting the country on the 139th place in comparison to the world. As Figure 19 illustrates the labor force is mostly employed in agriculture followed by the Service sector and industry, accordingly.

Figure 19. The structure of Armenian economy



Source. National Statistical Service of Armenia (NSS, 2013)

Yet, when broken down by economic sectors at present, the vast majority of the country's wealth is created in 2 broad sectors – services and agriculture but the industry increased its share significantly during the last years.

5.4. Armenia: Institutional framework for tourism development

Jenkins (1980) points that tourism can be an attractive option in the path to development. People from the richer nations tend to visit far-away places, thus affecting benefit generation from income redistribution and employment in a global level. However, obstacles are inevitable — e.g. having only a little influence on total demand the developing countries may suffer from inadequate transport services, accommodation, etc. Uncontrolled tourism can also cause long-term social problems. The author argues that the host-country governments

must intervene to achieve the full benefits of tourism. Therefore tourism development process in Armenia at an institutional level, is next discussed.

According to the Ministry of Economy of Republic of Armenia (RA) tourism in Armenia is one of the most rapidly growing branches of industry in terms of its development rates and outcome. The objectives of tourism development state policy are defined by the national law on "Tourism and Tour Operating", "Tourism development initiatives" identified in 2000 (ATDA, 2000), as well as by the "Tourism development concept paper" (CAPS, 2008) adopted on February 13, 2008 by the Ministry of Economy.

Setting tourism as its top priority in its efforts towards economic development, the Government of Armenia established the Armenian Tourism Development Agency (ATDA) in 2000 to act as its premier national tourism organization. Since the very moment of establishment ATDA has aimed to uncover all the wonders of this ancient land to world travelers and to bring its awe-inspiring history and culture, replete with exceptional sights, sounds, and tastes, to the attention of the world's tourism marketplace (ATDA, 2000).

After the first steps on the way to tourism development planning a document named "Armenia's Tourism Development Initiatives 2001-2003" was designed in the same year of 2000. The overall goal of the TDI was to increase employment and generate income for small and medium sized enterprises located not only in the capital city of Yerevan, but in the rural regions of the country as well (ATDA, 2000). The main directions of TDI were Marketing; Visitor services; Visits by foreign operators and journalists; Handicrafts development and marketing; Training; Accommodation and B&B promotion; Cultural heritage promotion; Armenian cultural festival.

For the moment planned actions for tourism development are inscribed in "Tourism Development Concept Paper", which represents the vision in two phases: firstly by 2020 and secondly, by 2030. The main objective of tourism state policy identified in TDCP are

increasing the tourism contribution to the national economy, symmetric regional development, improvement of living standards and poverty reduction due to:

- sustaining high levels of growth in the number of incoming and internal tourists
- increasing tourism generated income through offering higher value products and services, and
- creating new job opportunities.

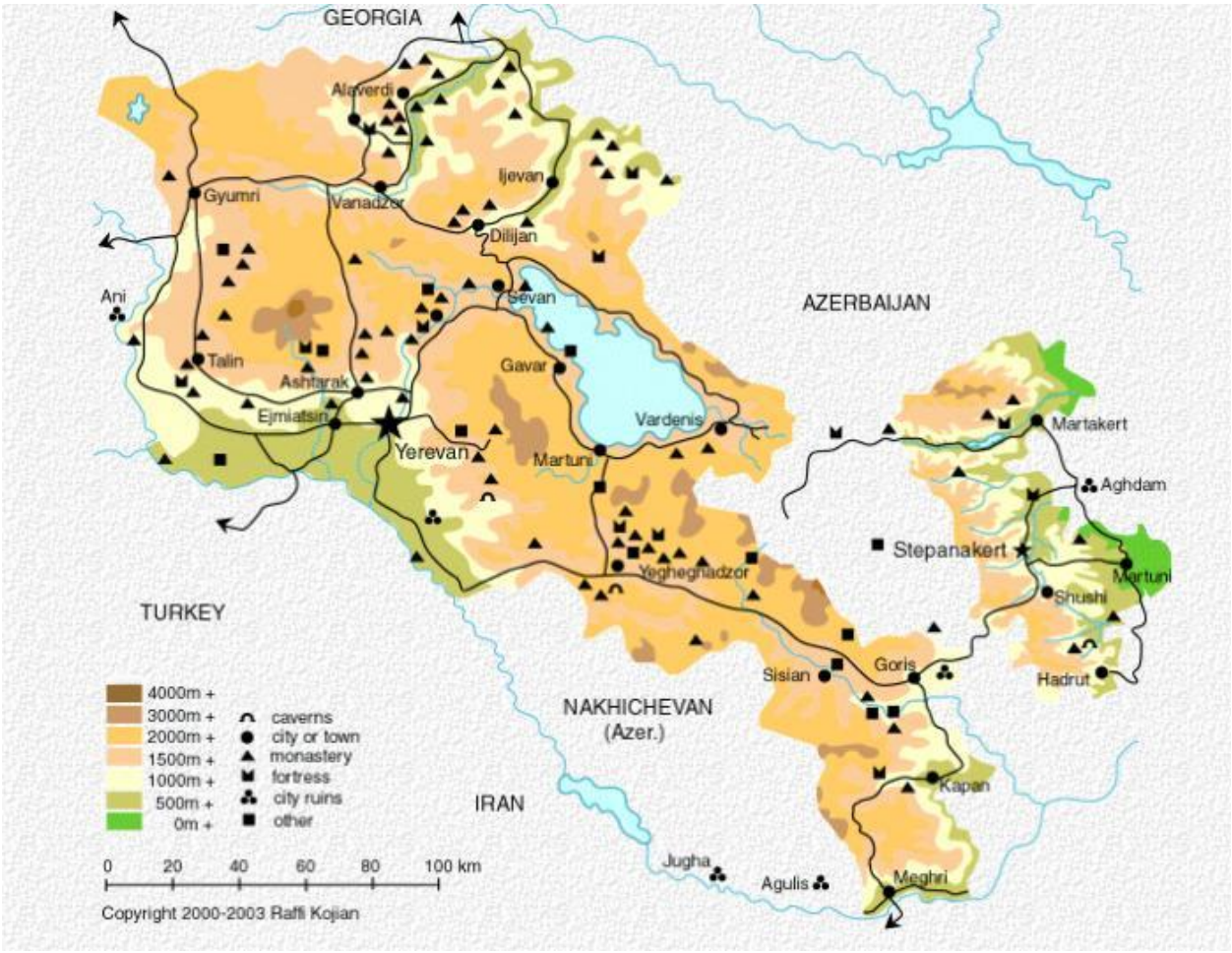
Tourism state policy defines 7 action principles, namely: Competitiveness; International Integration; Focus and Specialization; Cooperation; Sustainable Development; Tourism as a priority sector of economy; Nature and environmental protection. These principles are based on the following 16 values: 1) Authenticity; 2) Choice & Diversity; 3) Credibility; 4) Exclusivity; 5) Familiarity; 6) Hospitality; 7) Innovation; 8) Participation; 9) Planning; 10) Positive Impressions; 11) Prosperity; 12) Quality; 13) Regionalism; 14) Respect; 15) Safety; 16) Value for Money.

TDCP highlights the main obstacles and challenges of tourism development in Armenia and simultaneously outlines the possible solutions and activities needed to overcome them. For the future development the paper emphasizes 9 objectives, such as (CAPS, 2008): Design new, competitive destinations, prioritize tourism sites and attractions in Armenia; Provide high quality surveys, prioritize target markets; Branding of the country as a destination, profiling individual tourist sites and their effective presentation and promotion in global (target) markets; Improve accessibility and transportation; Improve and develop infrastructure; Provide high quality services; Human resource development; Ensure public health and safety; Improve destination management, business and investment environment.

5.5. Armenia: State of the arts of the tourism industry

Ministry of Economy of the Republic of Armenia (2011) claims that tourism with its pace of development and with its results is one of the most dynamically developing branch of the country, which highlights statistical indicators recorded in this field in recent years.

Figure 20: Armenia: Tourist attraction map



Source: http://www.armeniainfo.am/

The Tourist attraction map presented at the Figure 20 demonstrates that the tourist resources are allocated all around the country which is confirmed by the Competitive Armenian Private Sector (CAPS, 2008) through the evaluation of tourism resources in the country (Table 6).

Table 6. Armenia: Tourism resources evaluation

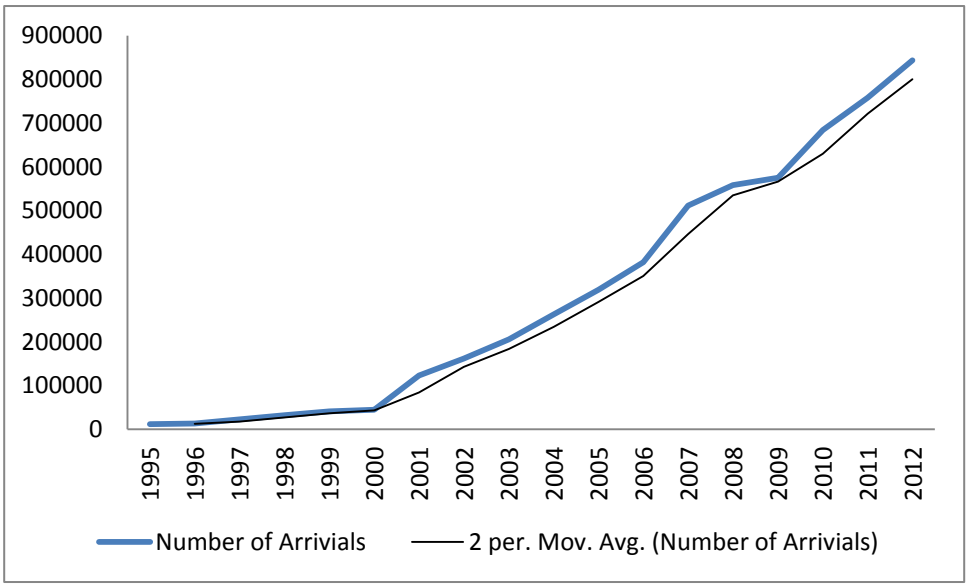
	Uniqueness/ Significance	Scale/Quantity	Diversity	Quality
Cultural Heritage	**High** over 4,000 years of rich history, unique culture architecture, literature, art of singing, dance, applied art, as well as cultural-historical monuments.	**High** Over 24000 cultural-historical monuments.	**High** Historical monuments represent several distinctive cultures: Urartu, Hellenic, Christian, Muslim, Soviet.	**High** Three of cultural-historical and nature monuments are among global cultural treasures (UNESCO): Haghpat – Sanahin, Geghardavank and the v of Azat river, Echmi together with its Zvar temple
Religion	**Very High** Armenia is the first Christian state in the world and the home of the indigenous Armenian Apostolic Church	**High** Armenia's churches and monasteries count for over 15% of Armenia's historical cultural monuments.	**Medium** Armenia's religious culture is exclusively Christian. 1 paganism Garni temple and 7 Muslim monuments	**High** The majority of the most famous monuments is rather well-preserved and/or reasonably well-restored
Nature	**High** Armenia has typical nature. This mountainous country has various climatic zones. Sometimes one can experience all four seasons of the year at a time in Armenia	**High** Currently there are 3 state reserves in Armenia .Armenia has more than 260 nature monuments.	**High** There are seven climatic zones on the com-pact territory of Armenia. Many of the animals, like Bezoarian goats are typical of Armenia only.	**Medium** Armenia's nature suffers from pollution and damage
Wellness	**Above Medium** Armenia is apparently endowed with some unique spa resources (like diverse and compactly located radon water sources), with healing power .	**Above Medium** Armenia's spa tourism has significant potential. There are many spa zones .	**Above Medium** Existing Armenian resorts and spas have the potential to offer various services	**High**. Mineral water can be used for treatment of cardiovascular, gastrointestinal systems, liver, gallbladder central nervous system, musculoskeletal system and other illnesses.
Adventure	**Medium** Armenia has a significant potential to offer unique	**Medium** Armenia has enough resources for the	**Medium** Hiking, horseback riding, mountain climbing, windsurfing,	**Medium** The quality of adventure experience can be

	adventure tourism products given its natural and human resources, as well as its distinctive traditions.	development of adventure tourism.	geological explorations	considered average
Winter Tourism	**High** Armenia has considerable resources to offer specific winter tourism products – Tsaghkadzor, Jermuk, Aragats, Agh-veran.	**High** Tsaghkadzor, Jermuk, Aragats, Aghveran	**Medium** Armenia is not prominent for offering variety of winter tourism services yet.	**Above Medium** Currently there are two winter tourism centers in Armenia – Tsaghkadzor and Jermuk, which are equipped with ropeways on a par with international standards

Source: CAPS (2008, p. 14)

According to National Statistical Service the number of international tourist arrivals in Armenia was 843,000 as of 2012. As the Figure 21 below shows, over the past 17 years this indicator reached a maximum value of 843,000 in 2012 and a minimum value of 12,000 in 1995.

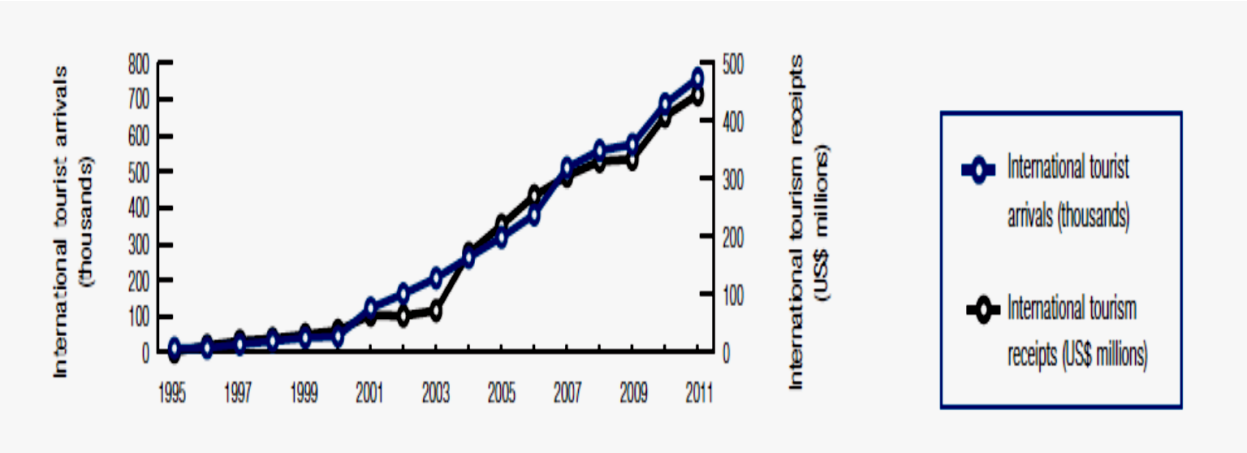
Figure 21. Armenia: International tourist arrivals



Source: World Bank (2013 b)

However, the growth of the sector is mainly due to tourists from Armenian Diaspora. As of 2009, it represented 62% of all tourist arrivals. Diaspora travelers[1] stay longer than the average tourist (25 days) and are more likely to come to visit friends and relatives. Repeat visitation is high. Currently only 8.3% of all Diaspora tourists are visiting Armenia for the first time.

Figure 22: Armenia: International tourist arrivals and receipts



Source: WEF (2013, p. 92)

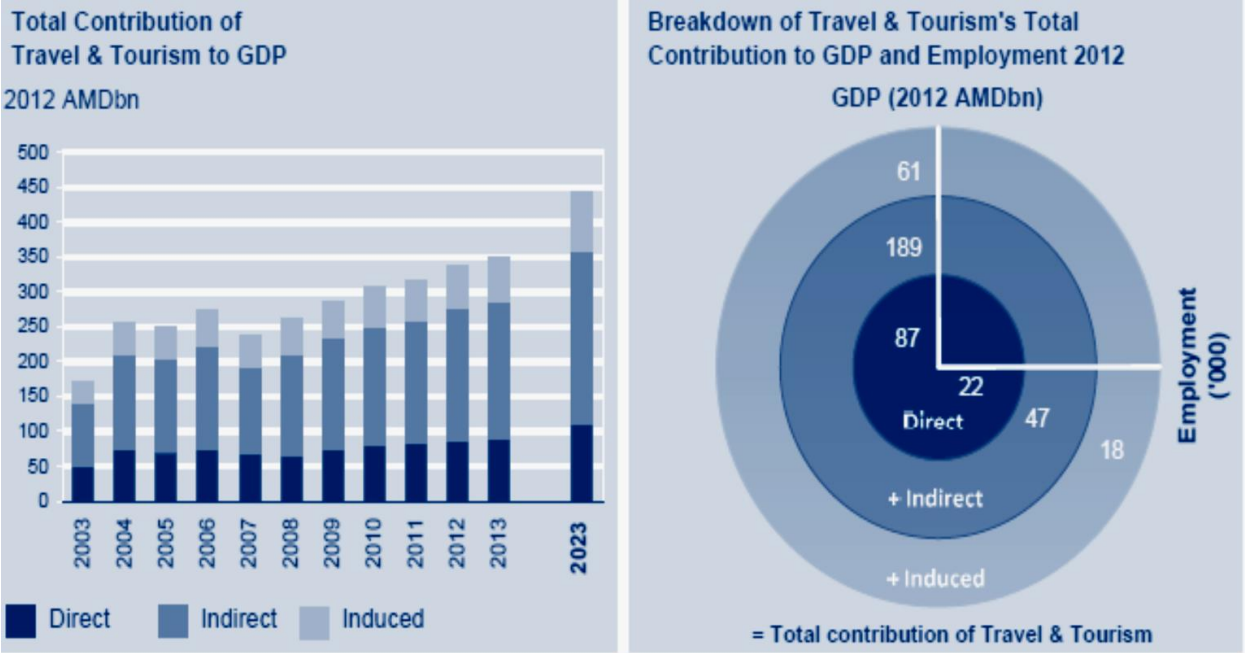
The current trends of tourism development in Armenia in terms of international tourism arrivals and receipts are demonstrating constant and positive correlated growth as presented by the WEF (2013) in the Figure 23.

As for the Travel & Tourism direct and total contribution to GDP**,** the direct contribution of was estimated as AMD 87.4bn (2.1% of total GDP) in 2012, and is forecast to rise by 2.6% in 2013, and to rise by 2.1% pa, from 2013-2023, to AMD110.2bn in 2023 (in constant 2012 prices); and the total contribution of AMD 336.9 bn (8.2% of GDP) in 2012, and is forecast to rise by 3.4% in 2013, and to rise by 2.5% pa to AMD 444.8 bn in 2023.

[1] These types of tourists are of Armenian origin residing in other countries who visit the Armenia as a "homeland".

Moreover, in 2012 Travel & Tourism directly supported 22,000 jobs (1.9% of total employment). This is expected to rise by 0.8% in 2013 and fall by 1.7% pa to 19,000 jobs (1.5% of total employment) in 2023 (WTTC, 2013).

Figure 23. Armenia: T&T total contribution to GDP and employment



Source: WTTC (2013, p.1)

Visitor exports are a key component of the direct contribution of Travel & Tourism. In 2012, Armenia generated AMD180.3bn in visitor exports. In 2013, this is expected to fall by 1.0%, and the country is expected to attract 874,000 international tourist arrivals. By 2023, international tourist arrivals are forecast to total 1,123,000, generating expenditure of AMD183.8bn, an increase of 0.3% pa (WTTC, 2013).

As for the investments in the sector of Travel & Tourism in 2012 it was estimated as of AMD 29.6 bn, or 2.7% of total investment which is expected to rise by 6.1% in 2013, and rise by 3.2% pa over the next ten years to AMD 43.3bn in 2023 (2.1% of total) (WTTC, 2013).

Figure 24: Armenia: Visitor exports & international tourist arrivals

Source: WTTC (2013, p. 5)

5.6. The Travel & tourism competitiveness report and Armenia's stance

When drawing parallels between T&T competitiveness and tourism arrivals as well as with tourism receipts, respectively illustrated in the Figure 25 and Figure 26**,** it becomes obvious that there is a significant positive correlations between those variables. Therefore it is fairly important to study Armenian stance at this context. Moreover, having data that covers 140 countries a comparison between Armenia and neighboring countries, namely Georgia and Azerbaijan, can be performed given the lack of data on tourism statistics.

Figure 25. T&T competitiveness and tourist arrivals

Source: WEF (2011, p. 9)

Figure 26. T&T competitiveness and tourism receipts

Source: WEF, (2011, p. 9)

In the 2013 edition of the TTCR (WEF, 2013) Armenia is ranked 79th up an impressive 11 positions since the last assessment. Improvements have taken place across many areas measured by the Index, with the most marked being registered in the areas of policy rules and regulations, human resources, and safety and security (where the country ranks 46th, 44th and 37th, respectively). In particular, red tape (33rd) and the cost to start a business (38th) have been reduced significantly, and visa requirements have become more open (35th). The country also benefits from a safe and secure environment. ICT infrastructure (73rd) has improved notably, especially in terms of Internet availability and usage. Infrastructure has also improved, benefitting from significant investment in recent years. Notwithstanding the improvements, air transport, ground transport, and tourism infrastructures remain relatively underdeveloped, ranking 85th, 94th, and 80th, respectively.

Table 7. Armenia: The Travel & Tourism Competitiveness Index

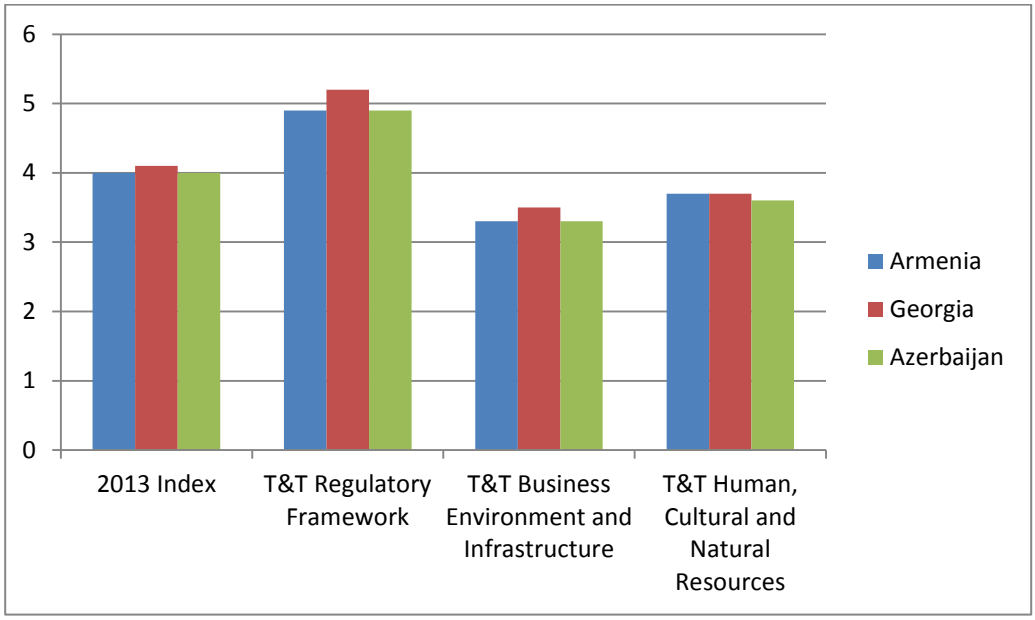
	Rank (out of 140)	Score (1-7)
2008 Index	89	3.6
2009 Index	91	3.7
2011 Index	90	3.8
2013 Index	79	4.0
Components of the 2013 TTCI		
T&T regulatory framework	51	4.9
Policy rules and regulations	46	4.7
Environmental sustainability	114	4.1
Safety and security	37	5.3
Health and hygiene	39	5.9
Prioritization of Travel & Tourism	73	4.3

T&T business environment and infrastructure	88	3.3
Air transport infrastructure	85	2.7
Ground transport infrastructure	94	3.1
Tourism infrastructure	80	3.4
ICT infrastructure	73	3.0
Price competitiveness in the T&T industry	80	4.4
T&T human, cultural, and natural resources	94	3.7
Human resources	44	5.1
Education and training	84	4.5
Availability of qualified labor	8	5.7
Affinity for Travel & Tourism	47	4.8
Natural resources	124	2.6
Cultural resources	81	2.1

Sources: WEF (2011); WEF (2013)

Even though there was a huge upgrading in this year Index the comparison between Armenia and neighbor countries, particularly Georgia and Azerbaijan illustrated in the Figure 27 overstates the fact that Armenia still needs huge structural improvements.

Figure 27. TTCI comparison between Armenia, Georgia & Azerbaijan



Source. Adapted from: WEF (2013)

Figure 27 demonstrates the positions of Armenia, Georgia and Azerbaijan in the Travel and Tourism Competitiveness Index rankings.

5.7. Summary

Armenia is a small landlocked country in the crossroads between Asia and Europe. Despite the consistent positive economic growth, according to the GDP rates, the country is still facing lots of challenges as a young developing country. Setting tourism as one of the top priorities towards economic development various institutional reforms were made with regard to the sector, especially legislation. Furthermore, different agencies responsible for tourism development in the country were established and respective strategies adopted. However, any reforms or strategies towards sustainability in tourism are not yet defined or specified.

The tourism resources in the country are quite evenly allocated which can be considered as an important factor when controlling tourist flows and seasonality. Even though the available rather small dataset of figures with regard to tourism shows consistent positive growth rates the actual numbers are still very small in value.

As for the competitiveness of travel and tourism sector in Armenia despite the huge improvements in the TTCI ranking during last couples of years Armenia still needs huge structural development in comparison with the neighbor countries, and developing countries in general.

CHAPTER SIX: Methodology

6.1. Introduction

In this chapter the main goal and objectives of this research are defined which is followed by the formulation of respective research questions. Further on the methods of data collection applied for this study are described and justified. In the end a methodological action plan is presented summarizing the overall research process.

6.2. The aim and objectives of the research

This research aims to define which specific indicators can be put into practice in order to help tourism organizations and tourism businesses to meet sustainability requirements in developing countries based on the case of Armenia.

According to the main goal specific objectives can be stated as following:

- Objective 1: To define the principles of the paradigms of sustainable development and tourism sustainable development;
- Objective 2: To identify already existing measurement approaches and tools for assessing sustainability in tourism;
- Objective 3: To distinguish the particularities of tourism in developing countries;
- Objective 4: To analyze the current stage of tourism development in Armenia in the context of sustainability and competitiveness;
- Objective 5: To propose a set of indicators for measuring sustainability of tourism in development in developing countries adapted to the case of Armenia.

6.2. Research questions

In order to meet the final objectives the following research questions (RQ) are formulated in accordance with the objectives stated:

Objective 1: *To define the principles of the paradigms of sustainable development and sustainability in tourism;*

- **RQ 1a** – What is sustainable development?
- **RQ 1b** – How can tourism be developed according to sustainable development principles?

Objective 2: *To identify already existing measurement approaches and tools for assessing sustainability in tourism;*

- **RQ 2a** – What is sustainability assessment?
- **RQ 2b** – What are the main concepts and approaches of sustainability assessment?
- **RQ 2c** – How should the indicators for sustainability assessment in tourism be developed?
- **RQ 2d –** What are the indicators?
- **RQ 2e** – What are the main datasets of indicators for sustainability assessment in tourism?

Objective 3: *To distinguish the particularities of tourism development in developing countries;*

- **RQ 3a** - What are the criteria of taxonomies among countries?
- **RQ 3b** - What are the particularities of tourism development in developing countries?
- **RQ 3c** – What makes tourism a competitive strategy for economic development in developing countries?

Objective 4: *To analyze the current stage of tourism development in Armenia in the context of sustainability and competitiveness;*

- **RQ 4a** – What is Armenia as a country?
- **RQ 4b** – What were the institutional initiatives for tourism development in Armenia?
- **RQ 4c** - What is the current stage of tourism development in Armenia?
- **RQ 4d** – How competitive is the tourism sector of Armenia in an international level?

Objective 5: *To propose a set of indicators for measuring sustainability of tourism in development in developing countries adapted to the case of Armenia.*

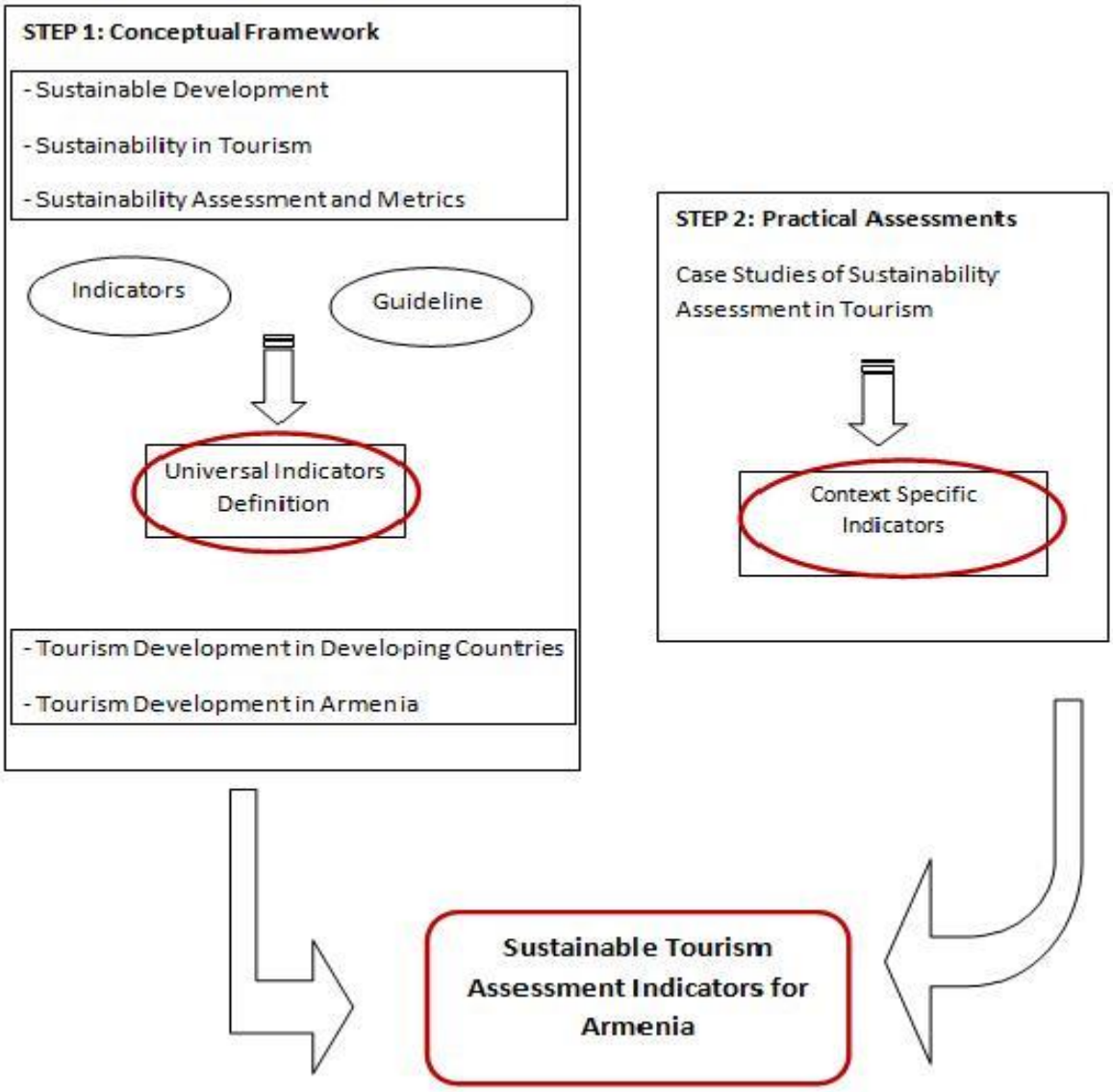
- **RQ 5a** – Are there some general conceptual indicators for sustainability assessment in tourism outlined by different organizations?
- **RQ 5b** - Which specific indicators are needed to draw a scheme for sustainable tourism development and monitoring in Armenia?

6.3. Methods of data collection

Given the character of this research the methodology chosen was based on the collection and analysis of secondary data since the major sources of data collection, based on Sarantakos' classificatory system (cited Jennings, 2001, p. 84) included public documents, archival documents, administrative documents, and formal studies and reports. In this sense secondary data were examined "to answer research questions other than the question(s) for which the data were initially collected" (Vartanian, 2011, p. 3). Moreover, the cases studied were mostly conducted and funded by respective governments which gives according to Trzesniewski et. al. (2011) available datasets a greater external validity and considerable breadth. Besides as Jennings (2001) notes sometimes secondary data sources are the only available way to access tourism data.

In order to fully answer the research questions an action plan was outlined (as illustrated in Figure 28).

Figure 28. Methodological action plan



Source: prepared by the author

STEP 1 – Conceptual Framework

For this phase an analysis was conducted using scientific articles, books, and official documents and websites, regarding the concepts of sustainable development, tourism

sustainability and sustainability assessment metrics in tourism to present the theoretical framework.

As well as in depth literature review was carried out to identify and define the "universal" indicators in relevance to economic, environmental and social perspectives of tourism sustainable development in accordance with the guidelines provided by the UNWTO (UNWTO, 2004). For this reason a comparative analysis was performed based on the dataset of indicators provided by the UNWTO (2004), UNCSD (2001), EEA (2003), OECD (2008) and EU (2013).

In addition different sources were consulted to identify characteristics of tourism development and competitiveness in developing countries, as well as in Armenia.

STEP 2 - Practical Assessments

This stage was designed to define the set of context specific indicators by analyzing and cross-relating different case studies undertaken in the field of sustainable tourism development and assessment.

Eight case studies were discussed dealing with sustainable tourism indicators which are applied to different geographical zones (cities, regions and countries). The case studies were chosen based on different criteria mostly focusing on the datasets of STI and on the fact that specific contexts were being analyzed.

STEP 3 – Definition of the Core STI for Armenia

STEP 3 derives from the actions previously undertaken and combines contributions both from step 1 and step 2, and proposes a sustainable tourism and assessment model for Armenia. Results obtained through the practical assessments (chapter eight, section three) were particularly relevant, in the identification of key elements to be considered in the context of Armenia. The theoretical framework outlined during STEP 1, was also of relevance,

especially the criteria that needed to be taken into account in the identification of sustainability indicators (chapter eight, section two).

6.4. Summary

In this chapter the methodological research framework applied for conducting this study was presented. In particular the main goal of the research was stated as well as the objectives and respective research questions were formulated.

In addition the data collection methods were describe, followed by the explanation three-step action plan designed for meeting the overall goal of this research.

CHAPTER SEVEN: Analysis of tourism sustainability assessment cases

7.1. Introduction

In order to achieve sustainable tourism at a destination level rather than on project or business levels, concepts and tools need to be combined and integrated (Lee, 2001) as they cover different areas and contribute to different aspects. Choosing appropriately integrated tools is important for developers, planners and regulators of tourism resorts and new destinations, because comprehensive assessment of possible impacts on environment and community of planned developments is required in order to avoid trade-offs and transferences of problems from one area to the other.

Bearing in mind the importance of specific site indicators suggested by the UNWTO (2005), in order to propose the most appropriate set of indicators for Armenia several case studies are examined with regard to STI identification and development processes. The Case studies are discussed based on several dimensions, such as:

- Geographic Perspective – whether the identified set of indicators are applicable at a national, regional or municipal level.
- Stakeholders – who/which organization was responsible for the identification and development of the set of indicators proposed for a specific destination.
- Assessment approach – linking assessment methodologies and practices.
- Groups of Indicators – to identify issues, objectives, impacts that serve as classification categories when defining indicators and measures.
- TBL compatibility – whether the set of proposed indicators comprise all the aspects of sustainable development.

7.2. Assessment of tourism sustainability in france

In France, the *Institut Français de l´Environnement* (*IFEN*, 2000) and the *Agence Française d´Ingénierie Touristique* (*AFIT*) have undertaken interesting work in the development of a set of indicators to assess tourism sustainability.

In 2000 the IFEN has identified a series of over 150 indicators at a national scale, which were classified by types of destination (coastal, mountain, rural or urban) which sought to facilitate the integration of the environment in tourism policies (UNWTO, 2004).

Examples of selected national-level indicators for French tourism include amongst others "Net tourism pressure"; "Domestic tourism modal split", etc.

Although the indicators were developed through DPSIR framework developed by the OECD (described in the chapter 3, section 4), it was finally decided by the authors not to organize the final document following this pattern. The main drawback of this option was a separation of interrelated indicators in different parts of the book. Each environmental issue was presented in a separate chapter (water, energy, waste, natural heritage…).

With regard to the TBL model The IFEN's work, however, was limited to the environment and did not concern other dimensions of overall sustainability.

7.3. Tourism sustainability assessment practices in Spain

In Spain, the Ministry for the Environment has been working in the definition of a system of environmental indicators for the tourism sector as part of the Spanish System of Environmental Indicators, although Autonomous Communities like the Balearic Islands have already developed their own regional system of indicators (Blázquez et al., 2001 cited Vera Rebollo and Ivars Baidal, 2009). In the local context, the implementation of Agenda 21 in

mature coastal resorts such as Calvià (Mallorca) or Sitges (Barcelona) has given a boost to work on tourist sustainability indicators.

A system of indicators has been developed for Spain by the OECD that allows the evaluation of the effect of tourism on the environment. The proposed System is composed of 27 indicators which cover all the aspects of TBL model. Moreover, the indicators are set up based on the DPSIR model as can be seen in the Annex 9.

In addition, assessment of sustainable tourism applicable to Spanish coastal destinations was conducted by Blancas et. al. (2010). The selected set of indicators was applied to sustainable tourism from a multidimensional standpoint, i.e. the TBL model was considered (Annex 10).

Regarding the social dimension, information regarding the social carrying capacity of the destination was examined to determine the effects of tourists on the local community. As well as data on public services available to tourists was assessed, including sports facilities, health services, public transport and public safety services. The quality of tourism employment was measured in terms of temporary contracts. And the information on crime and misdemeanours in the area was evaluated to assess the effect of a destination's safety on tourist flow. Overall, eight social indicators were identified.

Regarding the economic aspects eight specific indicators were discussed and the economic benefits derived from tourist activities were measured regarding tourist demand, tourism expenditure, seasonality of the activity, employment and public investment.

The environmental dimension was approached by including 16 indicators related to the intensity of beach use, generation and management of urban solid waste, energy consumption, management of water resources, erosion, level of urbanization and degree of protection.

In addition to this model Rebollo and Baidal (2009) described a more adaptive model of sustainability assessment in tourism. Not surprisingly, the set of indicators identified by these researchers was also based on the DPSIR model.

The model incorporates the holistic perspective of sustainability by considering the environmental, economic and socio-cultural dimensions of tourism development.

The indicators are organized into four interrelated groups (Annex 11):

- Land Use–Tourism model – this is a prerequisite for identifying the different types of tourist areas, understanding their different stages of development, and identifying factors that influence the evolution of tourism activities and can also orient it towards a sustainable rate of development. These factors are more easily recognized at the local level, where the principles of sustainability appear directly applicable (Rebollo et al., 1997). Overall, 14 indicators are identified with regard to *Tourists resource/attractions; Land use; Economic Activity; Demographic structure and Tourist-oriented structure*.
- Pressure Indicators - these eight indicators reflect the tensions that tourism activities place on the natural environment and on the socioeconomic structure of the destination, such as (seasonal) human pressure, increase in water consumption, etc.
- State-quality Indicators – which express current environmental situation of the destination, the quality of life as perceived by locals, and the degree of satisfaction experienced by tourists. *Basic environmental measures; Perceived quality of life; and Tourist satisfaction* are the identified three State-quality indicators.
- Political and Social Response Indicators – in particular nine indicators are suggested to represent the measures taken with regard to the conditions outlined in the Land Use–Tourism model, and the existing pressures as well as the state-quality of the different components of the development process.

7.4. Tourism sustainability assessment practices in the United Kingdom (UK)

In the UK, the design of indicators for sustainable development proposed by the Department of the Environment, Transport and the Regions (DETR) has highlighted the need to develop specific indicators for tourism activity (DETR, 1999).

The DETR emphasize the importance of destination indicators which are representative of local conditions and can potentially be aggregated to feed into a national system, with the British Resorts Association collaborating on defining this latter system (Allin et al., 2001).

Hence, in 2002 a set of headline indicators were developed by the English Tourism Council (ETC, 2002 cited White et. al., 2006). In particular 20 indicators were suggested based around the three core objectives for the management of sustainable tourism, namely:

- to protect and enhance the built and natural environment;
- to support local communities and their culture; and
- to benefit the economies of tourism destinations.

Even though there is no specific reference to the TBL model of tourism sustainability the list of indicators (see Annex 12) mostly covers all of the three dimensions. More specifically, indicators such as *Number of businesses signed up to environmental management schemes; or Carbon dioxide savings made by the hotel industry certainly refer to the Environmental aspects of sustainable development*, whereas *Average hourly earnings in tourism versus the average national hourly wage or Contribution of English tourism to UK economy* cover the Economic aspects and Socio-Cultural dimensions are considered in terms of including such indicators as *Accommodation registered as meeting National Accessible Scheme criteria for disabled people* or *Local authorities with tourism strategies that incorporate cultural and heritage consideration,* etc.

In addition to support the UK Government's Sustainable Development Strategy, "*Securing the future",* (March 2005), a suite of 68 national Sustainable Development Indicators were

developed (White et. al., 2006). These include 20 UK Framework Indicators, shared by the UK Government and the devolved administrations in Scotland, Wales and Northern Ireland. The remaining 48 indicators highlight additional priorities relevant to the UK Government Strategy.

Moreover, there is a set of 18 established and three in-progress indicators aimed at measuring progress towards meeting the commitments of Scotland's sustainable development strategy "Choosing our future", and on sustainable development more generally (White et. al., 2006) at the same time covering all the aspects of TBL model of sustainability development of tourism.

The already established 18 indicators are grouped based on the following criteria:

- Well being
- Supporting thriving communities
- Protecting Scotland's natural heritage and resources
- Scotland's global contribution
- Learning
- Economic and Demographic Context

The three indicators in the development phase are: Social Justice; Environmental Equality; and Well being.

7.5. Assessment of Tourism Sustainability in Douglas Shire Council, North Queensland, Australia

As was already previously mentioned there were quite different contributors for development of STI including international organizations, universities and researchers as well as Governmental and non-governmental organizations. A set of indicators was also developed by the Douglas Shire Community working group in 2001 (White, et. al, 2006).

Douglas Shire Council, North Queensland, Australia was invited to seek accreditation under Green Globe 21 brand. Green Globe 21 is the only global sustainability benchmarking and certification program for travel and tourism operations. The 12 STI as well as suggested measures were developed accordingly to the identified problems (Annex 14).

However, the indicators identified don't seem to cover the TBL model of sustainable development. At least 11 of 12 indicators cover only the environmental aspects of SD. As for the last indicator it is rather difficult to identify in regard to which dimension of the TBL model they were developed. And the last indicator, "*Equivalent persons*" which is measured as the total of resident population and visitors, is rather difficult to identify in regard to which dimension of the TBL model it was developed and can be interpreted both as an environmental and economic indicator.

7.6. Assessing tourism sustainability in the Gaspesian Region, Canada

Another set of STI was designed by Tanguay et al. (2012) for assessing tourism sustainable development in the Gaspesian region, Canada**.** With regard to sustainable development in tourism the set of indicators reflect upon the issues such as Ecosystem; Water; Atmosphere; Energy; Waste; Landscape and nuisances; Resilience and risk; Security and safety; Health; Satisfaction; Public participation; Culture; Accessibility; Investments; Promotion of ecotourism; Economic vitality; Employment; Marketing; Reputation; and Traffic.

Tanguay et al. (2012) suggest 20 core indicators (Annex 16) bearing in mind the following guiding principles:

- Safeguarding and development of Gaspesian culture;
- Preservation and development of the Gaspesian landscape heritage;
- Promotion of eco-responsibility;
- Participating governance and endogenous development; and
- Sustainability of tourism activities.

Based on these principles the core indicators in fact address economic, environmental and socio-cultural dimensions of tourism sustainable development in the region. However, what makes this study most valuable is the criteria for STI selection, more specifically the criterion called “availability of data” given the fact that not all kind of indicators are calculated on a municipal scale.

7.7. Development of STI for Cairngorms National Park Authorities

In 2006 in support to the Cairngorms National Park Authorities’ “Strategy and Action Plan for Sustainable Tourism” the Macaulay Institute set out some suggested indicators that could be used to monitor the performance and impact of tourism in the Park (White et al., 2006).

In total, 24 indicators were presented and classified under six headings (Annex 15), namely.

1. Volume and spread of tourism
2. Visitor satisfaction
3. Tourism enterprise performance and satisfaction
4. Community reaction
5. Volume and spread of tourism
6. Environmental impact

However, regardless the fact that the identified indicators are considered context specific they can be easily applied to any tourist destination apart from the parks. The reasons why these indicators can be used outside the park is because firstly, they cover all three dimensions of the TBL model and secondly are quite universal in nature.

7.8. Assessment of tourism sustainability in Bjelasica and Komovi region, Montenegro

In April 2007 the World Tourism Organization, in conjunction with the Ministry of Tourism and the Environment of Montenegro, held a workshop on Sustainable Tourism Indicators and Destination Management in Montenegro.

The workshop led participants through hands-on exercises in order to experience the use of practical approaches to the identification of indicators in the context of destination management. The Bjelasica and Komovi region, with the Biogradska Gora National Park at its centre, served as a pilot destination to demonstrate a participatory planning process and the application of indicators. The workshop methodology was designed in a way that can be replicated and adapted to other locations (UNWTO, 2007).

While identifying and selecting the possible indicators the following topics were discussed:

- **Relevance**: Who will use it and how will it influence decisions on the issue? Is it easy to understand and clear to users? and
- **Feasibility**: Are there available data sources? Which organizations can provide this? What technique can be used to collect and analyze the information, and is it practical and affordable? Is data available in time series? Are there any existing standards?

At the end of the workshop 33 core indicators were suggested categorized into six groups (Annex 16) with regard to issues of sustainability in tourism, namely:

- ISSUE 1: The lack of effective planning and control over the spread of Buildings
- ISSUE 2: The shortage of skilled and qualified labor
- ISSUE 3: The need for improved waste management
- ISSUE 4: The preservation of traditional buildings through tourism
- ISSUE 5: The use of local agricultural produce in tourism
- ISSUE 6: The increase in land and house prices

This set of indicators covers all three dimensions of the TBL model emphasizing the environmental issues most likely given the fact of existence of a national park.

7.9. Assessment of negative impacts of tourism in Crikvenica, Croatia

A relevant case study was conducted by Logar (2010) aiming to develop a set of indicators for measuring negative impacts of tourism in a coastal town of Crikvenica, Croatia. The 24 indicators were developed in relevance to the issues of tourism development in Crikvenica (Annex 18).

The main impacts or issues were concluded to be:

- Low quality of accommodation = low tourism profitability;
- Illegal private accommodation;
- Seasonality of incomes and employment;
- Lack of an adequately trained work force;
- Large-scale urbanization;
- Visual pollution;
- Seasonality of environmental loads;
- Loss of fishing traditions;
- Changes in the social structure of the town.

With regard to the TBL model of sustainability in tourism Low quality of accommodation = low tourism profitability; Illegal private accommodation; Seasonality of incomes and employment and Lack of an adequately trained work force are references to the economic dimension. Meanwhile Large-scale urbanization; Visual pollution; and Seasonality of environmental loads cover the Environmental issues. As for the Loss of fishing traditions; and Changes in the social structure of the town they both comprise the socio-cultural aspects of sustainable development.

7.10. Summary

Specific site indicators evaluate important issues regarding the management of the tourism destination that are not taken into account by the key and specific ecosystem indicators, and that can only be defined for the destination under study (UNWTO, 2004).

Consequently, these are not designed for the comparative analysis of destinations. As there is no unique indicator system to study sustainable tourism (Manning, 1999), any study concerning tourism sustainability development has to design its own set, bearing in mind the intended use of the information provided.

Therefore, this chapter was reviewing several cases of STI and its application to different destination in order to understand whether there is a pattern of used datasets of site specific indicators. The results of the analysis based on the datasets of indicators is presented in the next chapter.

CHAPTER EIGHT: Research findings

8.1. Introduction

The assessment of the sustainability of tourism destinations is very complex. Various tools are in use, which possess different strengths and weaknesses depending on the characteristics of the tourism destinations and the objective of the assessment. Therefore, there is a need to understand the available tools and to select them according to project requirements and knowledge of their correct usage.

Any methodology adopted needs to recognize *"that there is an inter-relation between indicators"* and that indicators should not be considered separately as discrete variables (Miller and Twining-Ward 2005, p. 116).

This chapter presents and discusses the results obtained through the theoretical and practical analysis of the existing indicators for assessing tourism sustainability. In the end the results are summarized based on a five-step selection process to meet the overall goal of this research and identify the core set of indicators to assess the sustainability of tourism in Armenia.

8.2. Results of the theoretical analysis of STI

In order to find out whether there are some kind of "universal" indicators for assessing sustainability in tourism existing databases of indicators were consulted based on:

- 30 baseline STI identified by the World Tourism Organization's *Indicators of Sustainable Development for Tourism Destinations: A Guidebook* (UNWTO, 2004),
- 58 core STI suggested by United Nations Commission on Sustainable development (UNCSD, 2001) ;
- Core and Key Environmental indicators defined by the Organisation for Economic Cooperation and Development (OECD, 2003);

- 37 core environmental indicators as well as 4 sectoral indicators for tourism suggested by the European Environmental Agency (EEA, 2003);
- And the most recently developed 27 core and 40 optional STI developed by the European Union (EU, 2013).

The main reasons for consulting this specific databases are presented in the Table 8 .

Table 8**.** Justification of the sources consulted

UNWTO	The UNWTO was the first one in pioneering for STI identification and development processes. All the further actions made towards the sustainability assessment in tourism derive from the principles described in the Guidebook; The Guidebook contains a relatively comprehensive list of indicators developed which is also recognized by a wide range of experts. The risk of missing important dimensions of sustainable tourism would be minimized while matching the selected indicators to the aims and baselines issues of sustainable development in a tourist destination.
UNCSD	Given the fact that the main principles of tourism sustainability derive from the concept of sustainable development the UNCSD is one of the leading organizations ensuring the sustainable development practices in an international level
OECD	The Bellagio STAMP cooperatively developed by the OECD and ISD are recognized as a set of guiding principles to measure and assess progress towards sustainability under the OECD's *Measuring the Progress of Societies* program. OECD encompasses a great number of countries which can use OECD's derivatives in the sphere of sustainability assessment in tourism destinations
EEA	EEA is the principal and leading international organization specialized in environmental sustainability, which is one of three dimensions of the sustainable development The DPSIR as well as its predecessor P-S-R frameworks developed by the EEA is still considered as one of the most important approaches for sustainability assessment and measurement in tourism
EU	This is the main governmental organization specializing in overall sustainable development of the member states. The literature indicates that most efforts on practical assessment of sustainability in tourism, at a national scale, were initialized by EU member-states (Eg., France, Spain, UK) Besides, the Toolkit for sustainable destinations developed by the EU (EU, 2013) is the most recent reference on the topic of sustainability assessment and metrics in tourism.

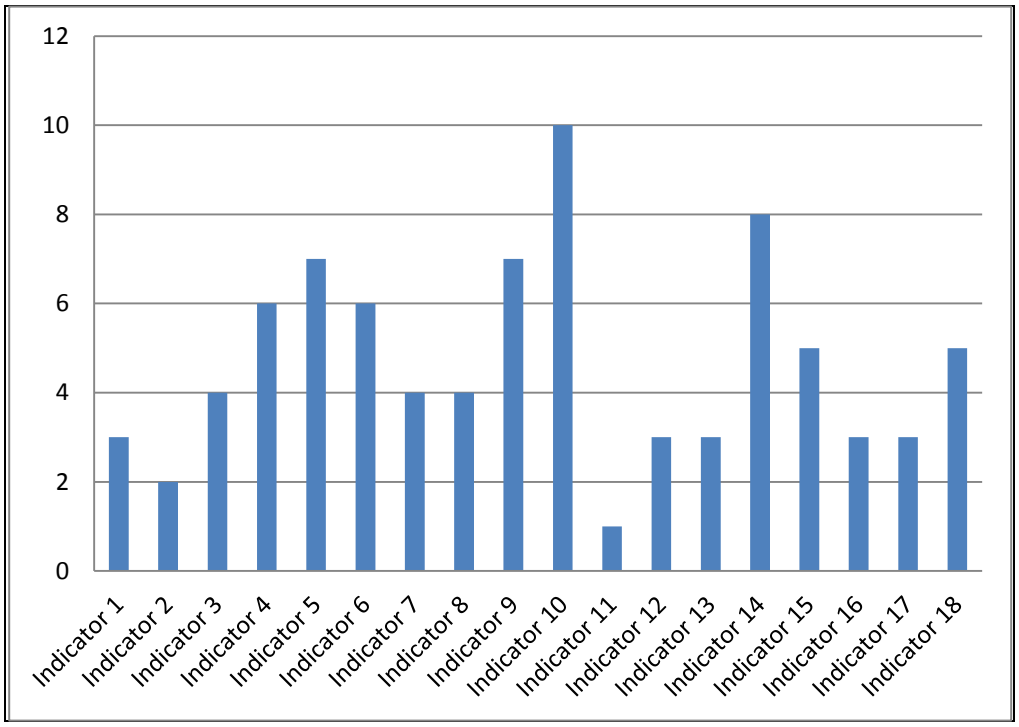
Source: author

The comparison of the above mentioned datasets resulted in the identification of 18 equivalent indicators used by those organizations, namely.

1. Percentage of visitors that are satisfied with their overall experience in the destination
2. No. of beds in hotels and similar establishments
3. No. of trips by means of transport
4. Household consumption expenditure on tourism
5. Tourism related employment (% in total empl.)
6. Tourism share in GDP
7. Number of tourists overnight stays in different types of accommodations
8. CO_2 emissions from energy use in tourism facilities
9. Water use by tourists, per person and day in relation to use by residential population
10. Waste volume produced by destination (tonnes per resident per year or per month)
11. Areas used for specific leisure activities, e.g.: marinas, golf courses, ski areas etc., time series
12. Protected land and water areas (% of land area in tourist regions), time series
13. Bathing Water Quality, time series
14. Sewage water treatment plants - volumes of water treated - time series
15. Percent of tourist business establishments participating in recognized environmental schemes
16. Eco-labeled tourism facilities (as % of total)
17. Existence of land use or development planning processes, specifically referring to tourism activities
18. Energy consumption per tourist night compared to general population energy consumption per person night

The lists of indicators suggested by the five organizations referred in table 8 were cross-compared. Only the indicators with the frequency rate of “two” or more in a five pointsscale (number of listed organizations) were included in the list of “Equivalent Indicators”. The frequency rates of the indicators enumerated in are presented in the Figure 29.

Figure 29. Frequency of "Equivalent Indicators"



Source: author

8.3. Results of the practical analysis

In addition, 8 case studies were discussed that deal with sustainable tourism indicators and are applied to different geographical zones (cities, regions and countries). Even though the UNWTO Guidebook also provides different case studies the selection of those specific studies was derived from the fact that after discussing 11 relevant cases from the Guidebook, Tanguay et al. (2012, p. 4) concluded that the indicators used *"tended to follow the same pattern"*.

Before discussing the relationship between the set of indicators used the summary of consulted case studies is provided in the Table 9.

Table 9. Summary of the case studies consulted

	Time Relevance	Geographic Perspective	Developers	Assessment Approach	TBL Compatibility
France	2000	National	IFEN, AFIT	DPSIR	-
Spain	2006-2010	National and regional	OECD, Tourism researchers	DPSIR	√ √
UK	1999-2005	National and regional	ETC	Prioritization of Issues	√ √
Douglas Shire Council, Australia	2001	Regional	Working Group	Environmental Assessment	-[2]*
Gaspesian Region, Canada	2012	Regional	Tourism Researchers	Guiding Principles	√
Cairngorms National Park Authorities	2006	Regional	Macaulay Institute	Assessment of tourism impacts in the park	√
Bjelasica and Komovi region, Montenegro	2007	Regional	UNWTO, Ministry of Tourism and Environment of Montenegro	Prioritization of Issues	√[3]**
Crikvenica, Croatia	2010	Regional	Tourism Researchers	Prioritization of Issues	√

Source: author

Based on the summary it can be stated that:

- Sustainability assessment as well as indicator development processes in tourism have their roots in early 2000s and in fact are still maturing as was mentioned previously;
- The consulted case studies assess tourism sustainability either at national level (UK, Spain, France) or at a regional/municipal level (UK, Douglas Shire, Gaspsie, CNPA, Crikvenica);
- The development of the relevant indicators and assessment processes are mostly initialized by the Governmental Agencies and conducted with the help of tourism research institutes;
- The indicators are developed either using the DPSIR model or based on the issues identified within this framework;

[2] *This is the author's perspective
[3] **Environmental aspects were more emphasized

- With regard to the TBL model of sustainable development only two of discussed cases didn't cover economic, socio-cultural and environmental dimensions simultaneously.

The consulted case studies along with the already mentioned 18 "Equivalent Indicators" form a dataset of 415 indicators of which 208 TBL compatible and 189 environmental indicators were obtained from the practical analysis (Table 10).

Table 10. Dataset of indicators

Destination	Number of Indicators	Comments
France	150	Only environmental/national indicators
Spain	93	27 environmental national indicators 32 TBL compatible indicators applied to coastal destinations 34 TBL compatible indicators applied to Torrevieja
UK	41	20 national/ TBL compatible indicators 21 TBL compatible indicators applied to Scotland
Douglas Shire	12	Only environmental/regional indicators
Gaspesian Region	20	TBL compatible indicators
CNPA	24	TBL compatible indicators
Bjelasica and Komovi region	33	Mostly environmental/regional indicators
Crikvenica	24	TBL compatible indicators
Sub-Total	**397**	
"Equivalent Indicators"	18	
Total	**415**	18 "Equivalent Indicators", 208 TBL comprising and 189 environmental indicators

Source: prepared by the author

The Table 10 presents the formation of the indicators which will be adapted to the case of Armenia in the following section of this chapter.

8.4. Adapting findings to the case of Armenia

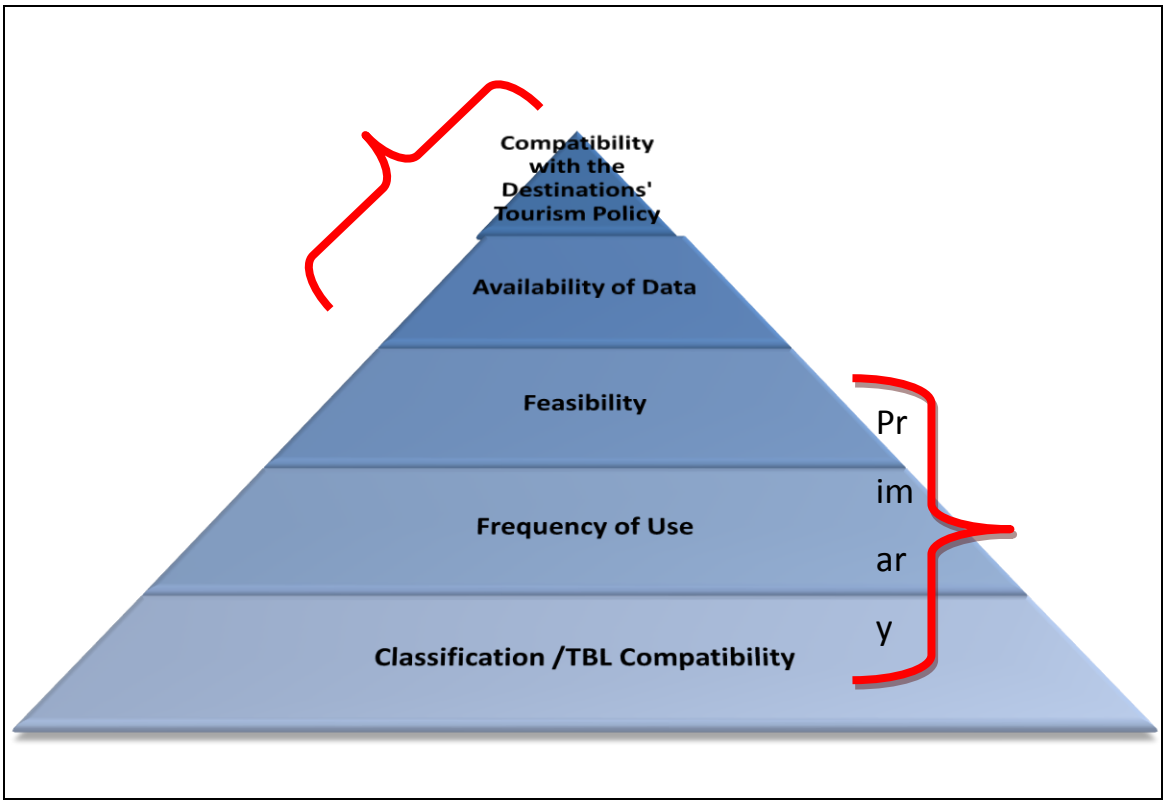
To select core indicators five selection criteria should be applied to our database of 415 indicators. Given the complexity of the sustainability assessment the primary and complementary criteria were differentiated (Figure 30). The three primary criteria for STI selection are:

- Classification/TBL compatibility
- Frequency of use
- Feasibility/Measurability

These criteria are considered as aiming to reduce the initial dataset to a more concise list with regard to economic, socio-cultural and environmental dimensions of sustainable development.

In addition the two complementary criteria, namely “Availability of Data” and “Compatibility with the Destinations’ Tourism Policy” are designed to ensure that the indicators can be applied to the destination, which is in the case Armenian reality. Moreover, ensuring the availability of data will guarantee the measurability of the indicators.

Figure 30. Selection criteria for sustainable tourism Indicators



Source: prepared by the author

Five steps based on these five criteria were necessary in order to reduce the 415 indicators to a more concise and operational list. Each of these steps, however, involves subjectivity, which is inevitable in the process of developing indicators, particularly on sustainability issues (Rajaonson and Tanguay, 2010; Singh et al., 2009 cited Tanguay et al. 2012, p. 6).

In the first step, all the initial indicators were classified with regard to economic, socio-cultural and environmental dimensions of sustainable development to ensure the TBL compatibility intersections.

In the second step the most frequently used STI were identified. The frequency of use is a criterion that can risk omitting less used but relevant indicators. However, Tanguay et al.

(2012) notices that this criterion allows us to identify well-documented indicators. As a matter of fact, 12 of the most documented indicators were identified as follows:

1. No. of trips by means of transport
2. Total annual expenditure on tourism
3. Tourism related employment (% in total empl.)
4. Tourism share in GDP
5. Number of tourists overnight stays in different types of accommodations
6. CO_2 emissions from energy use in tourism facilities
7. Water use by tourists, per person and day in relation to use by residential population
8. Waste volume produced by destination (tonnes per resident per year or per month)
9. Sewage water treatment plants - volumes of water treated
10. Percent of tourist business establishments participating in recognized environmental schemes
11. Percentage of energy consumption attributed to tourism
12. Percentage of tourism population equivalent (PTE)

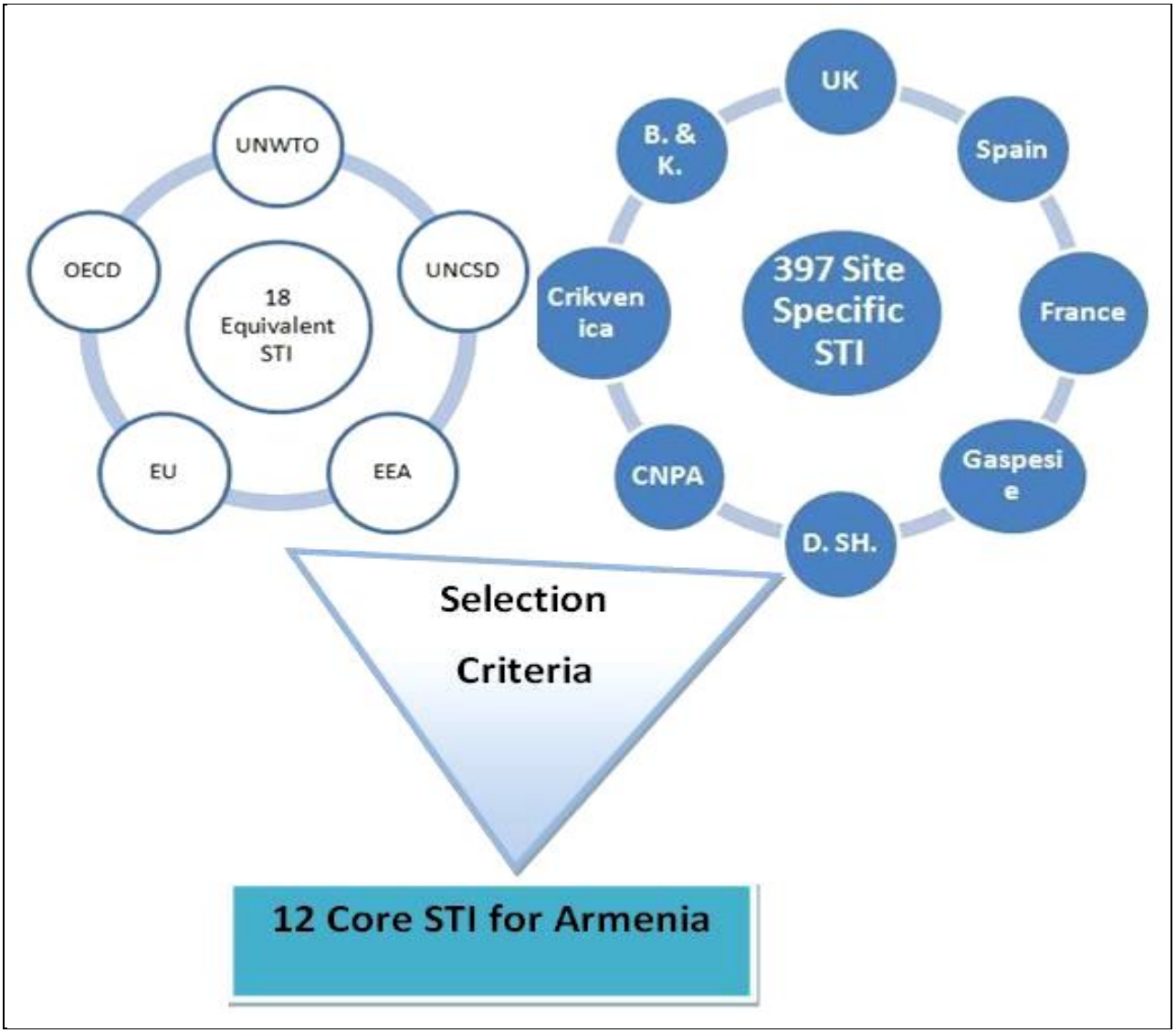
During the third step apparently no indicator was removed as they were all considered as dynamic indicators. Nevertheless, it should be noted that this indicators need to be cross-related and compared among each other and with other tourism indicators to ensure the depth of the analyses.

In the frames of this research it is actually not possible to conduct all 5 steps considered given the absence of available data on tourism in Armenia and the fact that there is no existing policy ensuring sustainability of tourism development.

However, the identified 12 indicators were proved to meet all the principles and guidelines discussed in the literature and can be further complemented when undertaking the last two steps of a proposed five-step STI selection process.

The summary of indicator selection process for assessing tourism sustainability in Armenia is presented in the Figure 31.

Figure 31. Summary of STI Selection Process



Source: author

8.5. Summary

In this chapter there are eight cases studied with regard to STI applied to different destinations. The description of the cases that was presented in the previous chapter, is, hence, followed by the discussion of the results obtained through the practical analysis in line with the results from the identification of “universal or equivalent” indicators.

In the end Core indicators for sustainability assessment in tourism are presented based on the synthesis of theoretical framework and the results of the practical analysis.

These indicators are chosen bearing in mind the characteristics of Armenia as a tourism destination and therefore, when applying the proposed set of indicators to other destinations the five-stage selection process based on three primary and two complementary criteria should be considered.

CHAPTER NINE: Conclusions

9.1. Introduction

The main goal of this research was to propose a set of indicators that can be used to assess and monitor sustainability of tourism development in developing countries based on the case of Armenia.

Overall, the application of the concept of sustainable development to tourism is still maturing given the fact that the paradigm of sustainable development is itself rather a new phenomenon. Thus, efforts to measure sustainability have to face some conceptual challenges.

However, this chapter seeks to outline the main findings of the research in accordance with the main goal, objectives of this study and proposed research questions. Some recommendations arising from the research are next presented in the line with the limitations encountered and the need for further studies is justified.

9.2. Discussion and evaluation

- **RQ 1a** – What is sustainable development? (Objective 1)

In the last two decades sustainability has emerged as a force in the tourism industry, offering new directions and values for public policy as well as, simultaneously, becoming a political leitmotiv for tourist destinations. The concept of sustainability as known to us today first appeared with the publication of World Conservation Strategy in March, 1980 (IUCN, 1980).

There have been a number of institutional initiatives in this respect, and they have shaped a framework for both theoretic and applied development, and have helped to extend the paradigm of sustainability as a general feature of contemporary tourism.

Since its introduction the paradigm of sustainable development appeared to be a subject of controversy. To the author's perspective one of the major challenges when dealing with sustainable development is that although the essence of the concept of sustainable development is clear enough a single unified definition for the term is still missing.

However, the most commonly used and agreed definition of sustainable development among the researchers (e.g. Allen, et. al., 1988; Butler, 1999; Carroll, 2002, Hall, 1998) is the one given in the Brudtland report which defines sustainable development as *"… a process to meet the needs of the present without compromising the ability of future generations to meet their own needs"* (WCED, 1987, p. 50).

Even though the debates over sustainable development were mainly arisen because of environmental issues there is a certain need to consider sustainable development as an integrity of "three pillars" namely: society, the economy and the environment (e.g. Cox and Cusick, 2006; Gibson, 2001; Harris, et. al., 2001; Holmberg, 1992; Reed, 1997; UNEP & UNWTO, 2005).

- **RQ 1b** – How can tourism be developed according to sustainable development principles? (Objective 1)

Research using the specific term sustainable tourism, however, commenced barely two decades ago (May, 1991; Nash and Butler, 1990). However, it managed offering new directions and values for public policy, and inducing the creation of the concept of sustainable tourism (Torres-Delgado and Palomeque, 2012).

The concept of sustainable tourism like sustainable development suffers from the limitations, derived from the ambiguity in its definition and as a matter of fact most of the definitions originate from the basic definitions about sustainable development. Therefore, sustainable tourism is considered to be a "*tourism which is developed and maintained in an area in such*

a manner and at such a scale that it remains viable over an indefinite period and does not degrade or alter the environment (…) in which it exists to such a degree that it prohibits the successful development and well-being of other activities and processes" (Butler, 1993, p. 29).

However, as Hunter (1997) points out sustainable tourism development most certainly should be considered as an adaptive paradigm which aims to contributing to the parental concepts.

The concept of sustainable tourism development involves balanced economic, social and cultural development without endangering the environment, which enables the development of the same or higher level (UNEP, 1994 cited UNEP and UNWTO, 2005). Therefore, planning of tourism development in accordance with sustainability guidelines seems the only way to successfully overcome and prevent the degradation of available resources used for tourism purposes (Angelevska-Najdeska and Rakicevik, 2012).

- **RQ 2a** – What is sustainability assessment? (Objective 2)

The assessment of the sustainability of tourism destinations is very complex. Various tools are in use, which possess different strengths and weaknesses depending on the characteristics of the tourism destinations and the objective of the assessment. Therefore, there is a need to understand the available tools and to select them according to project requirements and knowledge of their correct usage.

In a broad sense sustainability assessment is an *"ex-ante evaluation of the potential impacts of projects, plans, programmes or policies"* (Berger 2007, p. 1). It mostly involves several systematic steps, including an identification and description of the problem, the definition of policy options and measures, an evaluation/assessment of potential effects and impacts, and the description of options available to mitigate theses effects and impacts.

However, given the fact of sustainable development being a rather recent and still evolving concept (e.g. Pope et al., 2004, Bell and Morse, 2003; Hunter, 1997) there are very few examples of effective sustainability assessment processes implemented anywhere in the world.

- **RQ 2b** – What are the main concepts and approaches of sustainability assessment? (Objective 2)

There are many forms of sustainability assessment and yet, no single, widely accepted approach can be detected. As currently expressed in the literature, the theory of sustainability assessment has largely evolved from work undertaken by practitioners of environmental impact assessment (EIA), and more recently strategic environmental assessment (SEA) (Sheate et. al., 2001). This phenomenon only proves that the environmental issues should be considered along with the other two dimensions of the triple-bottom line model of sustainable development.

Furthermore, Pope et al. (2004) distinguish two forms of approaches for sustainability assessment that would be compatible with the TBL model, namely EIA-driven integrated assessment and Objective-led integrated assessment. Bell and Morse (1999) in turn advocate a five-step "systemic sustainability analysis" approach (SSA) as a new approach to sustainability assessment.

The main concepts associated to sustainability at a tourism destination level, are considered in the literature to be Ecotourism (Ceballos-Lascurain, 1983); Ecolabeling (Hale, 1996); Cleaner Production (Kavanagh, 1999); Environmental Management (Krishnamoorthy, 2008); and Tourism Carrying Capacity (Coccossis et al., 2001).

- **RQ 2c** – What are the indicators? (Objective 2)

For the comprehensive assessment of all sustainability aspects on all organizational levels of a tourism destination, a combination of tools will be required to allow the best possible decision-making.

Indicator development is often proposed in order to make sustainable tourism a more concrete and operational concept (Manning, 1999). Broadly speaking, an indicator is a measure, generally quantitative, that can be used to illustrate and communicate complex phenomena simply, including trends and progress over time (EEA, 2005).

While concepts construct the basis for the development of objectives, strategies and measures to improve sustainability (Schiantez et. al., 2007), indicators as desirable instruments and/or measuring rods to assess and monitor progress towards sustainable development (Selman, 1999).

Moreover, what distinguishes an indicator from basic data is its capacity to carry a meaning which exceeds its pure quantitative value (Rechatin, 1997 cited Ceron and Dubois, 2003).

- **RQ 2d** – How should the indicators for sustainability assessment in tourism be developed? (Objective 2)

There is certainly no shortage of suggested “criteria” for indicators and it has been possible to combine the often quoted lists to form a comprehensive overview. Developing a reliable and useful set of indicators that truly reflect the multidimensional nature of sustainable development is clearly a complex task.

Generally, indicators used within sustainable tourism development models should satisfy a number of criteria, as outlined by the European Commission (2005, p. 4) and Kristensen et al. (2006, p. 3). Furthermore, a portfolio of indicators should adhere to the specific principles defined by the European Commission (EC 2005, p. 5). In addition different guidelines and criteria can be found in the literature regarding STI (e.g., Shianetz et. al., 2007; Tanguay et al.,

2012; Stoeckl et al., 2004, Miller, 2001) which aim to ensure the compatibility and feasibility of the indicators developed.

However, *"if sustainable development is one of the tourism industry's major contemporary objectives, then the industry needs to be able to measure its performance and impacts in this area"* (Ko 2005, p. 432); undertaking this process, through adopting a framework to selecting indicators and acting upon their results, is worth the time and effort required to get it right.

- **RQ 2e** – What are the main datasets of indicators for sustainability assessment in tourism? (Objective 2)

As already mentioned there is still a huge gap between the theory and practice with regard to the development of indicators for assessing sustainability in tourism. Therefore, the main datasets of indicators consulted for the research were the ones outlined by the UNWTO, UN Commission on Sustainable Development, EEA, OECD and the EU.

- **RQ 3a** - What are the criteria of taxonomies among countries? (Objective 3)

The issue of classification system based on countries' development stage, including regards to choice of terminology are approached very differently by the UNDP, the World Bank, and the IMF.

The World Bank classifies countries based on their Gross National Income, while the UNDP uses more complex criteria such as Human Development Index. The IMF in turn classifies the countries based on a complex system that summarizes some key indicators such as, GDP per capita, total exports of goods and services, population.

However, the existing taxonomies suffer from lack of clarity with regard to how they distinguish among country groupings. Therefore, different subgroups are formed within the two main groups of countries, i.e. developing and developed.

- **RQ 3b** - What are the particularities of tourism development in developing countries? (Objective 3)

In the literature it is widely recognized the prerequisites of tourism development towards contribution to the overall macroeconomic stability, specifically for developing countries (e.g. Akdag and Öter, 2011; Mill and Morrison, 1999; Tosun, 2001; Qian, 2007; Stynes, 1997).

However, in these countries tourism is mostly promoted based on the fragile resources and ecosystems (Fennell and Eagles, 1990; Butler, 1990; Zhang et. al., 1999, Gössling, 1999). Moreover case studies available from Turkey, Ghana, Kenya, Botswana, Indonesia, Fiji, the Philippines, Papua New Guinea and Costa Rica (Buckley, 2012) signal about frequent cultural, historical and socioeconomic differences between residents and international tourists, and internal divisions within communities.

Therefore, in striving to prevent disorderly tourism development, in order to successfully overcome the daily changes that occur in turbulent surrounding, planning of sustainable tourism development occurs as the only way to do it successfully.

- **RQ 3c** – How competitive is tourism in developing countries? (Objective 3)

Many destinations in developing countries have managed to fruitfully develop and exploit their tourism potential to attract and cater to visitors from both domestic and international markets (WEF, 2011). However, when it comes to facts and figures, the review of the Travel & Tourism Competitiveness Index (TTCI) form 2007 up to 2011 shows that the top ranks of

the Index are invariably dominated by advanced economies, while tourism growth is largely driven by emerging economies.

The overall analysis confirms that, as a matter of fact, the developed countries tend to rank higher than countries at lower stages of development. In a way, this is inevitable because it reflects the better overall conditions in those economies. Moreover, comparison of rankings relative to stages of development shows that, given comparable resources, some economies are able to create rather better conditions for tourism development than others.

- **RQ 4a** – What is Armenia as a country? (Objective 4)

The Republic of Armenia is a small landlocked country in the crossroads between Asia and Europe. Despite the consistent positive growth in the rate of GDP the country is still facing lots of challenges as a young developing country.

At present, the vast majority of the country's wealth is created in 2 broad sectors – services and agriculture but the industry increased its share significantly during the last years. Therefore, tourism can be used as a tool towards the overall development of the country.

- **RQ 4b** – What were the institutional initiatives for tourism development in Armenia? (Objective 4)

The bodies responsible for tourism development in Armenia are the Ministry of Economy and the Armenian Tourism Development Agency. The objectives of tourism development state policy are defined by the national law on "Tourism and Tour Operating", "Tourism development initiatives" identified in 2000 (ATDA, 2000), as well as by the "Tourism development concept paper" (CAPS, 2008) adopted on February 13, 2008 by the Ministry of Economy.

However, being set as a priority only in 2008 tourism in the country is still in an early developing phase and all the institutional initiatives mostly concentrate on overall development strategies rather than taking into account possible sustainability issues that can arise without proper planning and management.

- **RQ 4c** - What is the current stage of tourism development in Armenia? (Objective 4)

The Ministry of Economy of the Republic of Armenia claims that tourism with its pace of development and with its results is one of the most dynamically developing branch of the country, which highlights statistical indicators recorded in this field in recent years.

The current trends of tourism development in Armenia are demonstrating constant and positive growth as presented by the WEF (2013), WTTC (2013), Ministry of Economy of the RA (2011) and National Statistical Service (2013). However, these assumptions are based on very small number of figures since one of the major obstacles while evaluating the current stage of tourism development in Armenia is the lack and sometimes even the absence of basic statistical data.

- **RQ 4d** – How competitive is the tourism sector of Armenia in an international level? (Objective 4)

In the 2013 edition of the TTCR (WEF, 2013) Armenia is ranked 79th up an impressive 11 positions since the last assessment. Improvements have taken place across many areas measured by the Index, being the most relevant areas policy rules and regulations, human resources, and safety and security. Notwithstanding the improvements, air transport, ground transport, and tourism infrastructures still remain relatively underdeveloped.

And despite that upgrade the comparison between Armenia and neighboring countries shows that Armenia is still in need of huge structural improvements.

- **RQ 5a** – Are there some general conceptual indicators for sustainability assessment in tourism outlined by different organizations? (Objective 5)

The comparison of the datasets developed by the UNWTO, UNCSD, OECD, EEA and EU resulted in identifying 18 equivalent indicators used by those organizations, namely.

1. Percentage of visitors that are satisfied with their overall experience in the destination
2. No. of beds in hotels and similar establishments
3. No. of trips by means of transport
4. Household consumption expenditure on tourism
5. Tourism related employment (% in total empl.)
6. Tourism share in GDP
7. Number of tourists overnight stays in different types of accommodations
8. CO_2 emissions from energy use in tourism facilities
9. Water use by tourists, per person and day in relation to use by residential population
10. Waste volume produced by destination (tonnes per resident per year or per month)
11. Areas used for specific leisure activities, e.g.: marinas, golf courses, ski areas etc., time series
12. Protected land and water areas (% of land area in tourist regions), time series
13. Bathing Water Quality, time series
14. Sewage water treatment plants - volumes of water treated - time series
15. Percent of tourist business establishments participating in recognized environmental schemes
16. Eco-labeled tourism facilities (as % of total)
17. Existence of land use or development planning processes, specifically referring to tourism activities
18. Energy consumption per tourist night compared to general population energy consumption per person night

- **RQ 5c** – Which specific indicators are needed to draw a scheme for sustainable tourism development and monitoring in Armenia? (Objective 5)

Five steps based on these five criteria were necessary in order to reduce the 415 indicators to more concise list of 12 indicators that can be applied when assessing tourism sustainability in Armenia:

1. No. of trips by means of transport
2. Total annual expenditure on tourism
3. Tourism related employment (% in total empl.)
4. Tourism share in GDP
5. Number of tourists overnight stays in different types of accommodations
6. CO_2 emissions from energy use in tourism facilities
7. Water use by tourists, per person and day in relation to use by residential population
8. Waste volume produced by destination (tonnes per resident per year or per month)
9. Sewage water treatment plants - volumes of water treated
10. Percent of tourist business establishments participating in recognized environmental schemes
11. Percentage of energy consumption attributed to tourism
12. Percentage of tourism population equivalent (PTE)

9.3. Recommendations

After this research a number of recommendations can be proposed with regard to developing strategies and tools aiming to assess tourism sustainability.

- Application of the proposed dataset of STI – as was not once stated, the STI developed within this research were considered for Armenia and, developing countries in general. In this sense, it is noteworthy to mention that in these countries trying to use tourism as a means towards macroeconomic development in general, the top priorities with regard to tourism are not the sustainability issues but the development of strategies to ensure the growth of the industry.

Therefore, by adopting the proposed set of STI in the early stages of the planning and monitoring processes will give them some advantages to overcome possible challenges and obstacles caused by uncontrolled tourism.

- Need to develop statistical dataset – as was encountered during the research the lack and sometimes even absence of statistical data on tourism is a major problem in developing countries and especially in Armenia.

  The data used within this research to evaluate the actual stage of tourism development in Armenia, were obtained mostly through international organizations, such as WB, IMF, UNWTO, WTTC.

  The importance of statistical data cannot be underestimated since in order to be able to monitor the progress the obtained results need to be cross-compared over time.

  In this context it should be noted that data for the set of 12 indicators could be at least obtained at a national level using the datasets of international organizations until the developing countries have means and resources for doing that on their own.
- Sustainable tourism as a brand – adopting principles of sustainable tourism can make tourism in developing countries more competitive given the raising interest in eco-friendly aspects of tourism industry all around the world.

9.3.1. Limitations of the research

During the research several limitations were encountered with regard to both conceptual and practical aspects of sustainability assessment and monitoring in tourism, namely:

- All the concepts consulted in the frames of this research are rather recent and still maturing.
- As already mentioned the concept of sustainability is itself not universally defined and attempts to measure it are rather difficult to put into practice (Bell and Morse, 1999; Butler, 1998; Hardi and Zdan, 1997);

- The TBL model of sustainability affects the process of development in such a way that it can be influenced by environmental, social and economic contexts which may require more attention to be paid to specific aspects over others (Bell and Morse, 2003; Ko, 2005; Reed and Doughill, 2003; Twining- Ward and Butler, 2002);
- Data on sustainable tourism is seldom available for a whole country and only a few countries and organizations have built up sustainable tourism indicators. So far existing indicator sets for sustainable tourism were identified only in few countries (eg. Spain, UK, France).
- Legal compliance is not enough to define a sustainable model of development and, in many cases, it is rather difficult to achieve.

9.3.2. Recommendations for further research

Any conceptual framework selected must be resilient and respond to changes in practice; it must provide indications of change in order to allow management decisions to be made. This requires commitment to review action and system response and to review the indicators/benchmarks chosen. Therefore, given the fact that the conceptual framework is still maturing and new practical assessments are being implemented the need for the further and ongoing research is rather obvious.

The further research is anticipated in the sense that the list of indicators can be updated over time. And even if not, the evaluation and monitoring of a tourism sustainability at a given destination should be a continuous process, more preferably implemented in an annual basis, in order to enable to decision-makers gauge the progress.

9.4. Summary

In this final chapter the main conclusions of the research were presented. The chapters initially presents the discussion of the findings of the research in accordance with the proposed objectives and research questions. This is followed by the description of the limitations of the study and the need for further investigation.

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Հայաստանի Հանրապետության զբոսաշրջության բնագավառի վերլուծություն (2011), ՀՀ էկոնոմիկայի նախարարություն

Annexes

Appendices

Annex 1 : Sustainable development timeline

Year	Principal Reference
1962	Publication of "Silent Spring" by Rachel Carson For the first time the earth's capacity to absorb chemicals was questioned.
1963	International Biological Programme initiated by nations around the world It was a 10 year study to analyze environmental damage through biological and ecological mechanisms, which laid the foundation for a science-based environmentalism.
1964	Publication of "Man and Nature or, Physical Geography as Modified by Human Action" by George Perkins Marsh The issue of "wise use" of natural resources is raised
1972	United Nations Conference on Human Environment held in Stockholm First international recognition of environmental issues. The concept of sustainable development debated in great detail. Establishment of numerous national environmental protection agencies and the United Nations Environment Programme (UNEP). www.unep.org
1972	Publication of "Limits to Growth" by the Club of Rome The report predicted the dire consequences if growth was not slowed down. www.clubofrome.org
1977	Tbilisi Declaration The world's first intergovernmental conference on environmental education was organized by (UNESCO) in cooperation with UNEP held in Tbilisi, Georgia (in the territory of former USSR).
1980	Release of World Conservation Strategy by IUCN. The strategy defines development as "the modification of the biosphere and the application of human, financial, living and non-living resources to satisfy human needs and improve the quality of human life". The main agents of habitat destruction were identified as poverty, population pressure, social inequity and the terms of trade. www.iucn.org
1983	World Commission on Environment and Development The Brundltland Commission worked for three years to weave together a report on social, economic, cultural, and environmental issues.
1987	Publication of The Report of the Brundtland Commission, Our Common Future, by Oxford University Press The report deals with sustainable development and the change of politics needed for achieving that. The definition of this term was given in the report.
1988	Establishment of Inter-governmental Panel on Climate Change Operation with three working groups to assess the most up-to-date scientific, technical and socio-economic research in the field of climate change. www.ipcc.ch
1990	World Conference on Education for All Starting with this conference all the participating governments, non-governmental organizations, civil society, bilateral and multilateral donor agencies and the media have taken up the cause of providing basic education for all children, youth and adults.
1992	U.N. Conference on Environment and Development (UNCED) or Earth Summit in Rio de Janeiro Publication of Agenda 21, the Convention on Biological Diversity, the Framework Convention on Climate Change, the Rio Declaration, and a statement of non-binding Forest Principles. www.unep.org/unep/partners/un/unced/home.htm

1995	World Trade Organization (WTO) The establishment of WTO resulted in the formal recognition of trade, environment and development linkages. www.wto.org
1999	Launch of the first Global Sustainability Index It led to tracking leading corporate sustainability practices worldwide. Called the Dow Jones Sustainability Group Indexes, the tool provides guidance to investors looking for profitable companies that follow sustainable development principles. www.sustainabilityindex.com
2000	UN Millennium Summit and the MDGs The largest-ever gathering of world leaders agreed to a set of time bound and measurable goals for combating poverty, hunger, disease, illiteracy, environmental degradation and discrimination against women, now known as the Millennium Development Goals, to be achieved by 2015. www.un.org/millenniumgoals
2001	Fourth Ministerial Conference of the World Trade Organization held in Doha, Qatar, It recognized the environment and development concerns in the final Declaration. www.ictsd.org/ministerial/doha
2002	World Summit on Sustainable Development in Johannesburg 10 years since UNCED. Promotion of "partnerships" as a non-negotiated approach to sustainability. www.johannesburgsummit.org
2005	Kyoto Protocol. The protocol legally binded the developed country 'Parties' to goals for greenhouse gas emission reductions, and establishing the Clean Development Mechanisms for developing countries. www.iisd.ca/process/climate_atm-fcccintro.htm
2007	Fourth International Conference on Environmental Education organized by the Government of India in Ahmedabad, November 26- 28 Being held during the United Nations Decade of Education for Sustainable Development (DESD 2005-2014), the Conference will look at how EE and ESD can partner and strengthen each other towards building a sustainable future.
2008	World food, fuel and financial crises converge For the first time in history, more than 50 per cent of the world's population lives in towns and cities. www.unfpa.org/pds/urbanization.htm Green economy ideas enter the mainstream.
2009	G20 Pittsburgh Summit G20 nations provide guidance for a 21st century global, sustainable and balanced economy. Leaders call for phasing out fossil fuel subsidies, and seek measures that will lead to sustainable consumption, while providing targeted support for the poorest people. http://www.cfr.org/world/g20-leaders-final-statement-pittsburgh-summit-framework-strong-sustainable-balanced-growth/p20299
2010	The rise of wind power. Nations agree to the fair and equitable sharing of benefits arising from the utilization of genetic resources, under the Nagoya Protocol to the Convention on Biological Diversity (CBD); nations also agree to the Cartegena Protocal on Biosafety.
2011	The Arab Spring: Starting with Tunisia, The world population reaches 7 billion, and is increasingly interconnected. Japan earthquake and tsunami China begins shift to a "green economy
2012	Trade disputes on solar and wind energy products One of the first of the Millennium Development Goal targets is achieved, in advance

	of the 2015 deadline: the percentage of the world's people without access to safe drinking water is cut in half. www.un.org/millenniumgoals/
2012	Rio +20: Fifty years after Silent Spring, 40 years after Stockholm and 20 years after the Earth Summit, the global community reconvenes in an effort to secure agreement on "greening" world economies through a range of smart measures for clean energy, decent jobs and more sustainable and fair use of resources. www.uncsd2012.org/rio20/

Source: Adapted from The International Institute for Sustainable Development (2012)

Annex 2: An agenda for sustainable tourism

	Aims of the Agenda	Description
1.	**Economic Viability**	To ensure the viability and competitiveness of tourism destinations and enterprises, so that they are able to continue to prosper and deliver benefits in the long term. This aim addresses such important issues as understanding the market, delivering visitor satisfaction, maintaining good trading conditions, maintaining and projecting and attractive destination, delivering business support.
2.	**Local Prosperity**	To maximize the contribution of tourism to the economic prosperity of the host destination, including the proportion of visitor spending that is retained locally. The second aim addresses issues of reducing the leakages, strengthening links between businesses and influencing levels of visitor spending.
3.	**Employment Quality**	To strengthen the number and quality of local jobs created and supported by tourism, including the level of pay, conditions of service and availability to all without discrimination by gender, race, disability or in other ways. Policy areas within this aim addresses to increasing employment opportunities and proportion of year round, full-time jobs, ensuring and enforcing labor regulations, encouraging enterprises to provide skills training programs and career advancement, the concern for the wellbeing of workers who lose their jobs.
4.	**Social Equity**	To seek a widespread and fair distribution of economic and social benefits from tourism throughout the recipient community, including improving opportunities, income and services available to the poor. The aim is considered to address the issues of developing income earning opportunities for disadvantaged people and utilizing income from tourism to support social programs
5.	**Visitor Fulfillment**	To provide a safe, satisfying and fulfilling experience for visitors, available to all without discrimination by gender, race, disability or in other ways. This aim covers the issues of improving access to all, providing holiday opportunities for the economically and socially disadvantaged, maintaining a duty of care to visitors and monitoring and addressing visitor satisfaction and the quality of experience.
6.	**Local Control**	To engage and empower local communities in planning and decision making about the management and future development of tourism in their area, in consultation with other stakeholders. The aim addresses to ensuring appropriate engagement and empowerment of local communities, improving the conditions for effective local decision making and addressing the specific

		position of indigenous and traditional communities with respect to local control.
7.	**Community Wellbeing**	To maintain and strengthen the quality of life in local communities, including social structures and access to resources, amenities and life support systems, avoiding any form of social degradation or exploitation. For this aim the following issues are to be considered: getting the balance right in the volume, timing and location of visits; reducing congestion; careful planning and management of tourism enterprises and infrastructure; promoting mutual use of facilities and services by residents and tourists and Influencing the behaviour of tourists towards local communities.
8.	**Cultural Richness**	To respect and enhance the historic heritage, authentic culture, traditions and distinctiveness of host communities. The policy areas for this aim are addressed to ensuring effective management and conservation of cultural and historic heritage sites and working with communities on the sensitive presentation and promotion of culture and traditions.
9.	**Physical Integrity**	To maintain and enhance the quality of landscapes, both urban and rural, and avoid the physical and visual degradation of the environment. The aim addresses to ensuring that new tourism development is appropriate to local environmental conditions, minimizing the physical impact of tourist activity and maintaining high quality rural and urban landscapes as a tourism resource
10.	**Biological Diversity**	To support the conservation of natural areas, habitats and wildlife, and minimize damage to them. The policy areas for this aim are addressed to working with national parks and other protected areas, promoting development and management of ecotourism, using tourism to encourage landholders to practice sustainable land management, working with private parks and reserves, minimizing damage to natural heritage from tourism, Raising visitor awareness of biodiversity and raising support for conservation from visitors and enterprises.
11.	**Resource Efficiency**	To minimize the use of scarce and non-renewable resources in the development and operation of tourism facilities and services. The aim to be addressed to taking account of resource supply in the planning of tourism development, and vice versa, to minimizing water consumption by the tourism sector, ensuring the efficient use of land and raw materials in tourism development, and promoting a reduce, reuse, recycle mentality.
12.	**Environmental Purity**	To minimize the pollution of air, water and land and the generation of waste by tourism enterprises and visitors. Policy areas to address: promoting the use of more sustainable transport, reducing the use of environmentally damaging chemicals, avoiding the discharge of sewage to marine and river environments, minimizing waste and where necessary disposing of it with care, influencing the development of new tourism facilities.

Source: UNEP and UNWTO (2005, p. 18)

Annex 3: Concept of sustainable tourism at an international level

Year	Principal References
1992	Earth Summit CNUMAD, Rio de Janeiro (UN): − Agenda 21 − Declaration on the Environment and Development − Agreement on Biological Diversity − Framework Convention on Climate Change − Declaration of Principles for Forestry Founding of the Commission for Sustainable Development (CSD) of the UN
1993	1st Ministerial Conference on Tourism and Sustainable Development, Hyeres-les-Palmiers UNWTO: − Tourism for 2000 and Beyond: Qualitative Aspects
1995	− Charter for Sustainable Tourism UNEP: − Guide for Environmentally Responsible Tourism 2nd Ministerial Conference on Mediterranean Tourism and Sustainable Development, Casablanca: − Charter for Mediterranean Tourism − Founding of the Mediterranean Commission for Sustainable Development
1996	UNWTO, World Travel Tourism Council (WTTC) and Earth Council: − Agenda 21 for the Travel and Tourism Industry
1997	Asia and Pacific Ministerial Conference on Tourism and the Environment, Malé (UNWTO): − Malé Declaration on Sustainable Development International Conference of Environmental Ministries on Biodiversity and Tourism, Berlin (UN) − Berlin Declaration on Biological Diversity and Sustainable Tourism International Conference on Tourism and Sustainable Development in the Mediterranean, Calvià: − Calvià Declaration on Tourism and Sustainable Development in the Mediterranean World Tourism Leaders Meeting on the Social Effects of Tourism (UNWTO): − Manila Declaration on the Social Impact of Tourism
1998	International Congress on Sustainable Tourism in the Mediterranean. The Participation of Civil Society, St. Feliu de Guíxols (Ulixes 21 project, MED-Forum): − Declaration of Mediterranean NGOs on Sustainable Tourism and the Participation of Civil Society 5th Mediterranean Environment Forum, Barcelona (MED-Forum): − Mediterranean NGO Programmes for Sustainable Development
1999	Founding of the Sustainable Tourism Committee (STC) of the UN 7th Session of the Commission for Sustainable Development, New York (UN): − The Global Significance of Tourism − Sustainable Tourism: A local Perspective − Sustainable Tourism: a Non-Governmental Perspective − Workers and Union in the Tourist Network − Decision 7/3 on Tourism and Sustainable Development 13th General Assembly of the UNWTO, Santiago, Chile:

	− Global Ethical Tourism Code
2000	International Conference of Sustainable Hotels for Sustainable Destinations (UNESCO and UNWTO) Founding of the Tour Operator Initiative for the Sustainable Development of Tourism, Maspalomas (UNWTO, UNEP and UNESCO)
2001	World Summit on Sustainable development (UNWTO): − Sustainable Tourism in Tourism (preparatory document) International Conference on Sustainable Tourism, Rimini (UNEP): − Rimini Charter − Network of Cities for Sustainable Development
2002	World Ecotourism Summit, Quebec (UNWTO and UNEP): − Quebec Declaration on Ecotourism World Summit on Sustainable Development, Johannesburg (UN): − ST-EP Initiative − Application Plan for Summit Decisions
2003	1st International Conference on Climate Change and Tourism, Djerba (UNWTO): − Djerba Declaration on Tourism and Climate Change 5th World Parks Congress, Durban (International Union for Conservation of Nature and Natural Resources, IUCN): − Recommendations of the 5th World Parks Congress
2004	Universal Culture Forum (UCF), Barcelona: − Tourism for All
2005	UNWTO Meeting (prior to the special session of the UN General Assembly), New York (UNWTO): − Declaration of Tourism in the Service of Millennium Objectives UNEP and UNWTO: − Towards more Sustainable Tourism Guide for Tourism Officers
2007	2nd International Conference on Climate Change and Tourism, Davos (UNWTO): − Davos Declaration
2008	Founding of the Tourism Reactivation Committee (TRC) of the UNWTO
2009	1st Meeting of the TRC, Madrid (UNWTO) 2nd Meeting of the TRC, Berlin (UNWTO) 3rd Meeting of the TRC, Astana (UNWTO) 18th General Assembly of the UNWTO, Astana (UNWTO): − Route Map for Recovery 4th Meeting of the TRC, Berlin (UNWTO)

Source: Torres-Delgado and Palomeque (2012, p. 5)

Annex 4. List of developing countries

Afghanistan	Guinea	Panama
Albania	Guinea-Bissau	Papua New Guinea
Algeria	Guyana	Paraguay
American Samoa	Haiti	Peru
Angola	Honduras	Philippines

Argentina	India	Romania
Armenia	Indonesia	Russian Federation
Azerbaijan	Iran, Islamic Rep. of	Rwanda
Bangladesh	Iraq	Samoa
Belarus	Jamaica	Sao Tome and Principe
Belize	Jordan	Senegal
Benin	Kazakhstan	Serbia
Bhutan	Kenya	Seychelles
Bolivia (Plurinational State of)	Kiribati	Sierra Leone
Bosnia and Herzegovina	Korea, Democ. P. Rep. of	Solomon Islands
Botswana	Kosovo	Somalia
Brazil	Kyrgyz Republic	South Africa
Bulgaria	Lao People's Democ. Rep.	South Sudan
Burkina Faso	Latvia	Sri Lanka
Burundi	Lebanon	St. Kitts and Nevis
Cambodia	Lesotho	St. Lucia
Cameroon	Liberia	St. Vincent and the Grenadines
Cape Verde	Libya	Sudan
Central African Republic	Lithuania	Suriname
Chad	Macedonia, the F.Y.R. of	Swaziland
Chile	Madagascar	Syrian Arab Republic
China	Malawi	Tajikistan
Colombia	Malaysia	Tanzania, United Republic of
Comoros	Maldives	Thailand
Congo, Democ. Republic of the	Mali	Timor-Leste
Congo, Rep.	Marshall Islands	Togo
Costa Rica	Mauritania	Tonga
Côte d'Ivoire	Mauritius	Tunisia
Cuba	Mexico	Turkey
Djibouti	Micronesia, Fed. States of	Turkmenistan
Dominica	Moldova	Tuvalu
Dominican Republic	Mongolia	Uganda
Ecuador	Montenegro	Ukraine
Egypt, Arab Rep.	Morocco	Uruguay
El Salvador	Mozambique	Uzbekistan
Eritrea	Myanmar	Vanuatu
Ethiopia	Namibia	Venezuela, (Bolivarian Republic of)
Fiji	Nepal	Vietnam
Gabon	Nicaragua	West Bank and Gaza*)
Gambia, The	Niger	Yemen
Georgia	Nigeria	Zambia
Ghana	Pakistan	Zimbabwe
Grenada	Palau	
Guatemala		

Source: ISI, 2013

Annex 5: Core indicators of sustainable development by the UNCSD

Social		
Theme	**Sub-Theme**	**Indicator(s)**
Equity	Poverty	• Percent of Population Living below Poverty Line • Gini Index of Income Inequality • Unemployment Rate
	Gender Equality	Ratio of Average Female Wage to Male Wage
Health	Nutritional Status	Nutritional Status of Children
	Mortality	• Mortality Rate Under 5 Years Old • Life Expectancy at Birth
	Sanitation	Percent of Population with Adequate Sewage Disposal Facilities
	Drinking Water	Population with Access to Safe Drinking Water
	Healthcare Delivery	• Percent of Population with Access to Primary • Health Care Facilities • Immunization Against Infectious Childhood • Diseases • Contraceptive Prevalence Rate
Education	Education Level	• Children Reaching Grade 5 of Primary Education • Adult Secondary Education Achievement Level
	Literacy	Adult Literacy Rate
Housing	Life Conditions	Floor Area per Person
Security	Crime	Number of Recorded Crimes per 100,000 Population
Population	Population Change	• Population Growth Rate • Population of Urban Formal and Informal Settlements
Environmental		
Theme	**Sub-Theme**	**Indicator(s)**
Atmosphere	Climate Change	Emissions of Greenhouse Gases
	Ozone Layer Depletion	Consumption of Ozone Depleting Substances
	Air Quality	Ambient Concentration of Air Pollutants in Urban Areas
Land	Agriculture	• Arable and Permanent Crop Land Area • Use of Fertilizers • Use of Agricultural Pesticides
	Forests	• Forest Area as a Percent of Land Area • Wood Harvesting Intensity
	Desertification	Land Affected by Desertification
	Urbanization	Area of Urban Formal and Informal Settlements
Oceans, Seas and Coasts	Coastal Zone	• Algae Concentration in Coastal Waters • Percent of Total Population Living in Coastal Areas
	Fisheries	Annual Catch by Major Species
Fresh Water	Water Quantity	Annual Withdrawal of Ground and Surface Water as a Percent of Total Available Water
	Water Quality	• BOD in Water Bodies

		• Concentration of Faecal Coliform in Freshwater
Biodiversity	Ecosystem	• Area of Selected Key Ecosystems • Protected Area as a % of Total Area
	Species	Abundance of Selected Key Species
Economic		
Theme	**Sub-Theme**	**Indicator(s)**
Economic Structure	Economic Performance	• GDP per Capita • Investment Share in GDP • Debt to GNP Ratio
	Trade	Balance of Trade in Goods and Services
	Financial Status	Total ODA Given or Received as a Percent of GNP
Consumption and Production Patterns	Material Consumption	• Intensity of Material Use • Intensity of Energy Use
	Energy Use	• Annual Energy Consumption per Capita • Share of Consumption of Renewable Energy • Resources
	Waste Generation and Management	• Generation of Industrial and Municipal Solid Waste • Generation of Hazardous Waste • Management of Radioactive Waste • Waste Recycling and Reuse
	Transportation	Distance Traveled per Capita by Mode of Transport
Institutional		
Theme	**Sub-Theme**	**Indicator(s)**
Institutional Framework	Strategic Implementation of SD	National Sustainable Development Strategy
	International Cooperation	Implementation of Ratified Global Agreements
Institutional Capacity	Information Access	Number of Internet Subscribers per 1000 Inhabitants
	Communication Infrastructure	Main Telephone Lines per 1000 Inhabitants
	Science and Technology	Expenditure on Research and Development as a Percent of GDP
	Disaster Preparedness and Response	Economic and Human Loss Due to Natural Disasters

Source: UNCSD (2001)

Annex 6 : Core indicators for environmental assessment by OECD

Issue	Core Indicator(s)		
	Pressures	**Conditions**	**Responses**
Climate Change	Index of greenhouse gas emissions	Atmospheric concentrations of greenhouse gases; Global mean temperature	Energy efficiency • Energy intensity (total primary energy supply per unit of GDP or per capita) • Economic and fiscal instruments (e.g. prices and taxes, expenditures)
Ozone layer depletion	Index of apparent consumption of ozone depleting substances (ODP) • Apparent consumption of CFCs/ and halons	Atmospheric concentrations of ODP Ground level UV-B radiation • Stratospheric ozone levels Responses	CFC recovery rate
Eutrophication	Emissions of N and P in water and soil Nutrient balance • N and P from fertilizer use and from livestock	BOD/DO in inland waters, in marine waters Concentration of N & P in inland waters, in marine waters	Population connected to biological and/or chemical sewage treatment plants • Population connected to sewage treatment plants • User charges for waste water treatment • Market share of phosphate-free detergents
Acidification	Emissions of heavy metals Emissions of organic compounds • Consumption of pesticides	Concentration of heavy metals & organic compounds in env. media & in living species • Concentration of heavy metals in rivers	Changes of toxic contents in products and production processes • Market share of unleaded petrol
Urban environmental quality	Urban air emissions (SOx, NOx, VOC) Urban traffic density Urban car ownership Degree of urbanization (urban population growth rates, urban land)	Population exposure to air pollution, to noise Concentrations of air pollutants Ambient water conditions in urban areas	Green space (Areas protected from urban development) Economic, fiscal and regulatory instruments • Water treatment and noise abatement expenditure
Biodiversity	Habitat alteration and land conversion from natural state to be further developed	Threatened or extinct species as a share of total species known Area of key ecosystems	Protected areas as % of national territory and by type of ecosystem • Protected species
Waste	Generation of waste • Movements of hazardous waste		Waste minimization • Recycling rates • Economic and fiscal instruments,

			expenditures
Water resources	Intensity of use of water resources	Frequency, duration and extent of water shortages	Water prices and user charges for sewage treatment
Forest resources	Intensity of forest resource use	Area, volume and structure of forests	Forest area management and protection
Fish resources	Fish catches	Size of spawning stocks	Fishing quotas
Soil degradation (desertification & erosion)	Erosion risks: potential and actual use of land for agriculture • Change in land use	Degree of top soil losses	Rehabilitated areas
Socioeconomic, sectoral and general indicators *(not attributable to specific environmental issues)*	Population growth & density Growth and structure of GDP Private & government final consumption expenditure Industrial production Structure of energy supply Road traffic volumes; Stock of road vehicles Agricultural production		Environmental expenditure • Pollution abatement and control expenditure • Official Development Assistance Public opinion

Source: OECD (2003)

Annex 7: Key environmental indicators by OECD

Pollution Issues		
	Available Indicators	**Medium Term Indicators**
Climate Change	CO2 emission intensities	Index of greenhouse gas emissions
Ozone Layer	Indices of apparent consumption of ozone depleting substances (ODS)	Same, plus aggregation into one index of apparent consumption of ODS
Air Quality	Sox & NOx emission intensities	Population exposure to air pollution
Waste Generation	Municipal waste generation Intensities	Total waste generation intensities. Indicators derived from material flows accounting
Fresh Water Quality	Waste water treatment connection rates	Pollution loads to water bodies
Natural Resources and Assets		
	Available Indicators	**Medium Term Indicators**
Fresh Water Resources	Intensity of use of water resources	Same plus sub-national breakdown
Forest Resources	Intensity of use of forest resources	Same

Fish Resources	Intensity of use of fish resources	Same plus closer link to available resources
Energy Resources	Intensity of energy use	Energy efficiency index
Biodiversity	Threatened species	Species and habitat or ecosystem diversity Area of key ecosystems

Source: OECD (2003)

Annex 8 : Core set of environmental indicators by EEA

Thematic Groups	Indicators
Air pollution and ozone depletion	Emissions of acidifying substances Emissions of ozone precursors Emissions of primary particles and secondary particulate precursors Excedance of air quality limit values in urban areas Exposure of ecosystems to acidification, eutrophication and ozone Production and consumption of ozone depleting substances
Biodiversity	Threatened and protected species Designated areas Species diversity
Climate Change	Greenhouse gas emissions and removals Projections of greenhouse gas emissions and removals Global and European temperature Atmospheric greenhouse gas concentrations
Terrestrial	Land take Progress in management of contaminated sites
Waste	Municipal waste generation Generation and recycling of packaging waste
Water	Use of freshwater resources Oxygen consuming substances in rivers Nutrients in freshwater Nutrients in transitional, coastal and marine waters Bathing water quality Chlorophyll in transitional, coastal and marine waters Urban waste water treatment Gross nutrient balance Area under organic farming
Energy	Final energy consumption by sector Total energy intensity Total energy consumption by fuel Renewable energy consumption Renewable electricity
Fisheries	Status of marine fish stocks Aquaculture production Fishing fleet capacity
Transport	Passenger transport demand

	Freight transport demand
	Use of cleaner and alternative fuels

Source: EEA (2003)

Annex 9: Spanish system of environmental tourism indicators

	Indicator(s)	Measure(s)
1.	Average number of bedspaces in tourist accommodations per establishment	No. bedspaces/ total no. establishments
2.	Annual distribution of tourism inflow	Annual distribution by Autonomous Community
3.	Total annual tourism expenditure	Total annual tourism expenditure (Euro millions) by Autonomous Community
4.	Percentage employment in hotel and restaurant sector	No. employees in the sector / total no. employees
5.	Percentage of tourism population equivalent (PTE)	[(Total no. tourists (inc. Spanish & 2nd homes) / 365) / Total present population] x100 = PTE
6.	Collective accommodation establishments	Number per resident
7.	Potential pressure over natural habitats	No further information
8.	Tourist density in urban areas	PTE / Total urban area (ha)
9.	Tourist anthropisation factor	No further information
10.	Distance from airports to urban inhabited areas	Distance in km
11.	Presence of second-dwellings	No. second dwellings / each 100ha of municipal area
12.	Visitors to places of cultural and historical interest	No further information
13.	Interventions carried out by SEPRONA over tourism and sport activities in natural environments	No further information
14.	Equipped beaches	No. of equipped beaches per km coastline
15.	Moorings offered in sport harbours	No. moorings per km of coastline
16.	Tourism urban waste generation	(Annual waste generation / total present population) x PTE
17.	Tourist consumption of urban drinking water supplies	No further information
18.	Electric power consumption due to tourism	No further information
19.	Modal distribution of tourist arrivals	No further information
20.	Degree of naturality of the environment	% of area of Sites of Community Interest over total Autonomous Community area
21.	Continental bathing water quality	No further information
22.	Marine bathing water quality	No further information
23.	Wastewater purification capacity per tourism population equivalent in main tourist towns	No further information
24.	Percentage of protected areas having controlled accesses and itineraries	No further information
25.	Hotel establishments certified according to environmental management regulation systems	No further information
26.	Selective collection of containers generated by tourism activities	No further information

27.	Incorporation of environmental criteria to tourism and territorial planning and legislation	No further information

Source: White et al. (2006, p. 17)

Annex 10: STI applied to Spanish coastal destinations

Social Indicators
1. Ratio of tourists to locals
2. Ratio of peak season tourists to locals
3. Sports facilities per inhabitant available to the community in coastal zone
4. Health Centres per inhabitant available to the community in coastal zone
5. Public transport vehicles for travelers and merchandise per inhabitant in coastal zone
6. Ratio of peak season tourism employment to low season tourism employment
7. Percentage of beach area without security devices in coastal zone
8. Number of crimes and misdemeanours made at provincial level

Economic Indicators
9. Total number of tourist arrivals in coastal zone
10. Daily average expenditures of sun and beach tourists
11. Ratio of peak month tourists to low month tourists
12. Occupancy rate for official accommodations
13. Ratio of average peak season occupancy rate to average low season occupancy rate for official accommodations
14. Percentage of official tourism accommodation establishments which open all year
15. Ratio of tourism employment to total employment in coastal zone
16. Public investments in coastal issues (access, beaches, dunes, defence of coasts, boardwalk, etc.)

Environmental Indicators
17. Number of tourists per square metre of beaches in coastal zone
18. Number of peak season tourists per square metre of beaches in coastal zone
19. Waste volume produced by destinations in coastal zone
20. Volume of glass recycled in coastal zone
21. Percentage of energy consumption attributed to tourism in coastal zone
22. Percentage of renewable energy consumption attributed to tourism with respect to total energy consumption in coastal zone
23. Consumption of urban supplying water attributed to tourism in coastal zone
24. Volume of water reused in coastal zone
25. Volume of sewage from coastal zone receiving treatment
26. Percentage of coastal zone considered to be in eroded state

27. Percentage of beach area considered to be in high urbanization state in coastal zone
28. Percentage of sampling points with good sanitary qualification in coastal zone
29. Percentage of beach area with Blue Flag Status in coastal zone
30. Percentage of beach area with cleaning services in coastal zone
31. Percentage of beach area considered to be protected natural area
32. Percentage of beach area considered to be in high occupation state in coastal zone

Source: Blancas et al. (2012, p. 486)

Annex 11: Assessing tourism sustainability in Torrevieja, Spain

Categories	Indicators	
Land Use - Tourism Model	*Tourist resources/attractions*	1. Basic tourist resources
		2. Potential tourist resources
	Land use	3. Land for residential use
		4. Suburban sprawl versus concentrated areas for residential purposes
		5. Physical modifications of the coast
	Economic Activity	6. Economic specialization
		7. Employment by sector
		8. Official unemployment level
	Demographic structure	9. Increase in population
		10. Origins of the resident population
		11. The ageing of the population
	Tourist-oriented structure	12. Regulated accommodation offer
		13. Potential tourist accommodation available in private homes
		14. Profile of demand
Pressure Indicators	15. Human pressure	
	16. Seasonal Human pressure	
	17. Increase in land use for residential purposes	
	18. Increase in number of dwellings	
	19. Increase in official supply of tourist accommodation	
	20. Increase in urban garbage collection	
	21. Increase in water consumption	
	22. Increase in consumption of electricity	
State-quality Indicators	23. Basic environmental measures	
	24. Perceived quality of life	
	25. Tourist satisfaction	
Political and Social Response indicators	26. Actions on tourism resources	
	27. Urban planning	
	28. Protected non-urbanisable land	
	29. Tourism planning	
	30. Municipal budget	

	31. Green budget
	32. Waste water treatment
	33. Selective garbage collection
	34. Environmental surveillance and control

Source: Rebollo and Baidal (2009, p. 190)

Annex 12: National sustainable tourism indicators of the UK

Indicator(s)	Measure(s)
Group 1: Protect and enhance the built and natural environment	
Number of businesses signed up to environmental management schemes	Number of businesses with e.g. David Bellamy Conservation Award, ISO14001, EMAS, GTBS, Green Lanterns etc.
Number of English beaches with a Blue Flag and a Seaside Award	Number of beaches, reported annually
Carbon dioxide savings made by the hotel industry	CO2 savings by hotels as a result of installing energy efficiency measures
Transport used on England holiday trips by UK residents	% of trips by mode of transport (Public, private car, hired car, other)
Local authorities with Tourism Action Plans	% of Local Authorities with Tourism Action Plans
Ratio of the land and historic buildings protected by national agencies against the amount of money spent on protection of these assets	Ratio
Group 2: Support local communities and their culture	
• Workforce employed in tourism • Average hourly earnings in tourism versus the average national hourly wage.	• % of total workforce • Ratio
Local authorities with LA 21 strategies that include sustainable tourism elements	% of Local Authorities
Audit of community perceptions of tourism	No further information available
English adults not taking a holiday of four nights or more	% of English adults
Accommodation registered as meeting National Accessible Scheme criteria for disabled people	Percentage
Local authorities with tourism strategies that incorporate cultural and heritage considerations	Percentage of Local Authorities
Group 3: Benefit the economies of tourism destinations	
Tourism accommodation enterprises in the tourism sector participating in Welcome Host training	Number of tourism accommodation enterprises
Accommodation registered with ETC, AA or RAC Quality Assurance Scheme	Percentage of accommodation
Extent of visitor satisfaction	Survey with 6 point scale from 'not at all' to 'completely' satisfied.
Domestic tourism spend by region	No further information available
Contribution of English tourism to UK economy	Tourism contribution as a percentage of UK GDP
Composition of tourism sector by business turnover	No further information available

Trips to England by UK residents	Total number of trips per month
Net domestic holiday spend by UK tourists	(English domestic holiday spend + Spent by other UK residents in England + Overseas' visitors spend in England) – Spend abroad on tourism by English residents = Net domestic inflow/outflow over time (£m)

Source: White et al. (2006 , p. 18)

Annex 13: Indicators for Scotland's sustainable development

Well being	**Health Inequality**: Life expectancy (by area) men/ women
	Air Quality: Air Quality Management Areas (AQMAs)
	Economic opportunity: 16-19 year olds who are not in education, training or employment
	Economic opportunity: People of working age in employment
Supporting thriving communities	**Community**: (a) Neighbourhood satisfaction (b) volunteering
	Crime: Recorded crimes for (a) vehicles (b) domestic housebreaking (c) violence (d) anti-social behaviour
	Households: (a) Childhood poverty: children in low income households (b) homeless households
Protecting Scotland's natural heritage and resources	**Waste**: Municipal waste arisings (a) total and (b) recycled / composted
	Biodiversity: Composite indicator of bird populations
	Marine: Fish stocks which are within safe biological limits
	River Quality: Kilometers of river identified as "poor" or "seriously polluted"
Scotland's global contribution	**Climate Change**: Greenhouse gas emissions: total and net
	Sustainable Energy: Electricity generated from renewable resources
	Sustainable Energy: carbon emission indicator
	Transport: Total vehicle kilometers
Learning	**Learning**: Eco-schools uptake and number with Green Flag
Context	**Economy**: Economic output: GDP per head
	Demography: Age profile of population
Indicators in Development	**Social justice:** new indicator being developed to support UK Framework
	Environmental Equality: new indicator being developed to support UK Framework
	Well-being: well being measures will be developed in support of UK Framework if supported by the evidence

Source: White et. al. (2006 , p. 19)

Annex 14: STI of Douglas Shire Council, Queensland, Australia

	Indicators	Measures
1.	Sustainability Policy	Develop policy
2.	Energy Consumption	Total energy consumed/equivalent persons
3.	Potable water management	Total water consumed/ equivalent persons
4.	Solid Waste Reduction	Total solid waste to land fill/ equivalent persons
5.	Environmental Investment	Environmental expenditure/total council expenditure
6.	Resource Conservation	Use of eco-labels/total product used by lead agency
7.	Biodiversity	Habitat conservation area/total area
8.	Water Quality	Number of tests meeting guidelines/total water tests
9.	Soil Quality	Number of sites on contaminated land register
10.	Carbon Dioxide	Green house gas produced/ equivalent persons (Optional)
11.	Community Measure	Number of enterprises certified by Nature and ecotourism Accredited Program / all tours run in the Shire
12.	Equivalent Persons	total resident population plus visitors

Source: Adapted from: White et al. (2006)

Annex 15: STI suggested by the Cairngorms National Park Authorities (CNPA)

Volume and spread of tourism	
1.	Estimates of trips, nights and spending in the region
2.	Visitor numbers at attractions and main sites (monthly to get indicator or seasonality)
3.	Monthly occupancy at accommodation (see under enterprise performance)
4.	Traffic counts at main locations (monthly)
5.	Number of tourism development projects receiving planning permission (together with number of applications, number called in by CNPA & outcome)
6.	Proportion of attractions and activity providers open all year
Visitor satisfaction	
7.	Percentage of visitors satisfied in general and with types of facility / service
8.	Proportion of repeat visitors
9.	Number of complaints received
Tourism enterprise performance and satisfaction	
10.	Monthly accommodation occupancy rates and attraction visitor numbers
11.	Performance increase or decrease compared to previous year
12.	Number of jobs supported – full time, part time : all year, seasonal
13.	Proportion of enterprises with quality certification
14.	Number of enterprises using local produce
15.	Percentage of enterprises satisfied with CNPA
Community reaction	
16.	Proportion of residents surveyed saying they are happy with tourism levels
17.	Number of complaints received relating to tourism
Volume and spread of tourism	
18.	Estimates of trips, nights and spending in the region
19.	Visitor numbers at attractions and main sites
Environmental impact	

20.	Records of air and water quality
21.	Levels of litter in key sites
22.	Proportion of visitors arriving by public transport
23.	Number of enterprises in Green Tourism Business Scheme
24.	Number of enterprises taking environmental management measures such as recycling

Source: White et al. (2006, p. 21)

Annex 16: Core indicators of sustainability assessment in tourism in Gaspesian region, Canada

Guiding Principles	Indicators
Safeguarding and development of Gaspesian culture	Number of visits to museums and art galleries
Preservation and development of the Gaspesian landscape heritage	Public administration expenses for the cultural sector
	Area of natural protected spaces
Promotion of eco-responsibility	Number of visits to national parks located in the region
	Number of eco-labelled events
Participating governance and endogenous development	Number of businesses that acquired the "Qualit´e Tourisme Gasp´esie" label
	Number of municipalities treating wastewater
	Public transportation clientele
	Volume of waste recycled
	Number of municipalities with a sustainable tourism committee
Sustainability of tourism activities	GDP (domestic price of cultural industries, art, entertainment and recreational industries and accommodation and food services industries)
	Level of satisfaction of tourists
	Volume of tourists
	Number (percentage) of accessible public beaches
	Spending of tourists
	Level of use of existing transport modes to the destination
	Number of jobs in the tourism sector
	Average occupancy rate of accommodation
	CRˆEGIM funds for environmental issues
	Expenses on real estate and repairs in the arts, performance and recreation industry

Source: Tanguay et al. (2012, p. 12)

Annex 17: STI suggested for Bjelasica and Komovi region, Serbia

ISSUE 1: The lack of effective planning and control over the spread of Buildings
1. Extent (%) and location of land subject to planning and development control
2. Number of formal applications for development received
3. Number (or %) of applications complying with planning requirements
4. Number (or %) of applications approved
5. Number of illegal developments recorded by official inspectorate
6. Number of reports and complaints about illegal development made by individuals
7. Number (or %) of illegal buildings/owners subject to prosecution/ action to remove
8. buildings
9. Amount and location of land subject to development (illegal and legal) based on observation and mapping

ISSUE 2: The shortage of skilled and qualified labour
10. Total number employed in the tourism sector, by sub-sectors (e.g. accommodation, restaurants, transportation, guiding, etc.), by occupations and levels
11. Number and % of employees qualified/certified
12. % of jobs all-year-round vs. seasonal
13. Number of qualified trainers (in schools)
14. Evidence of labour shortage for specific projects.

ISSUE 3: The need for improved waste management
15. Total weight (kilos) of waste to landfill per month
16. Ratio of weight of waste to landfill in tourist season compared with non-tourist season
17. Average weight (kilos) of waste to landfill per resident
18. Monthly weight of litter collected in clean up campaigns
19. Observation (count) of litter on sample road stretches
20. Tourist perception of cleanliness of the area (exit perception survey).

ISSUE 4: The preservation of traditional buildings through tourism
21. Number, % of buildings retaining traditional / vernacular architecture (increase/decrease through time) –number of katuns, wooden buildings
22. Number,% of traditional buildings in degraded conditions
23. Number, % of historic/traditional buildings used for tourism services (accommodation, restaurants, shops)
24. Number, % of tourists visiting historic sites, areas, museums, other heritage attractions
25. Number of monasteries prepared/open for visitors, availability of visitor services.

ISSUE 5: The use of local agricultural produce in tourism
26. Number (or %) of restaurants saying that they source food produce locally as first priority
27. Number (or %) of restaurants with local dishes labelled on the menu
28. Number of shops selling specialty local foods to visitors; variety of products and size of displays

29. Number of restaurants in the current National Cuisine scheme run by the NTO, and displaying the logo
30. Percentage of visitors reporting satisfaction with quality and distinctiveness of food/cuisine and whether they have purchased local produce.
31. Level of sales by local farmers/food producers to local restaurants.

ISSUE 6: The increase in land and house prices
32. % annual increase in land prices on community owned land, per square metre, since 2006
33. % annual increase in house prices (on total property or per square metre guide) since 2006

Source: UNWTO (2007, p. 67)

Annex 18: STI suggested for Crikvenica, Croatia

Main impacts/issues	Indicators and measures
Low quality of accommodation = low tourism profitability	• % of beds in 4- and 5-star accommodation facilities • % of private accommodation • Receipts per tourist • % of total destination revenues generated by tourism
Illegal private accommodation	• Estimated percentage of total tourist overnight stays
Seasonality of incomes and employment	• % of total tourism revenues earned from June to September • Average occupancy rate in accommodation facilities • % of jobs in tourism industries which are permanent • % of work force employed in hotels and restaurants
Lack of an adequately trained work force	• Number of students graduating from tourism professions yearly • % of labor imported (from other regions and countries)
Large-scale urbanization	• % of built-up land in the total town area • % of the town area allocated for further construction • Total construction area (built and allocated for building) • Newly built area per year
Visual pollution	• Ordinal ranking (scale 1–5)
Seasonality of environmental loads	• % of tourist overnight stays from June to September • Ratio of number of tourists in peak month to lowest month • Number of tourists per resident in the peak period • Ratio of water consumed in the month with the highest and the lowest number of tourist overnight stays • Ratio of wastewater outflow in the month with the highest and the lowest number of tourist overnight stays • % of wastewater receiving treatment • Ratio of solid waste in the month with the highest and the lowest number of tourist overnight stays • m^2 of beach area per tourist
Loss of the fishing tradition	• Ratio of the work force employed in fishing before the major tourism development and today (%)
Changes in the social structure of the town	• % of non-autochthonous people • % of second homes in total housing units

Source: Logar (2010, p. 128)

Appendices

Appendix 1: Checklist for "Equivalent Indicators" identification

	Sources / Indicators	EEA	UNWTO	OECD	UNCSD	UN
19.						
20.						
21.						
22.						
23.						
24.						
25.						

Appendix 2: Index card for case studies chosen by the author

	Time Relevance	Geographic Perspective	Developers	Assessment Approach	TBL Compatibility
France					
Spain					
UK					
Douglas Shire Council, Australia					
Gaspesian Region, Canada					
Cairngorms National Park Authorities					
Bjelasica and Komovi region, Montenegro					
Crikvenica, Croatia					

Appendix 3: Checklist for assessing STI frequencies

Sources / Indicators	"Equivalent Indicators"	France	Spain	UK	D. SH.	Gaspesie	CNPA	B. & K.	Crikvenica
1.									
2.									
3.									
4.									