



Master's degree thesis

LOG950 Logistics

**Examining the potential of Circular Economy in the
tourism industry: A multiple-case study of
implementing BECE framework in Nepal**

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Preface

I still remember the first time I received the admission letter from Molde University College. I was super excited to move to Norway and learn from the education and culture here. During my studies, I found the concept of Circular Economy to be the most interesting. The reason could be that, coming from a developing country like Nepal, I can relate to the problem of today's linear economy. I remember walking miles just to fetch clean drinking water. This situation has not changed in the past two years and will take many more years to reform. And, I believe that companies, government and consumers all around the world should be made aware about circular economy benefits and strategies.

Writing this thesis has been a rollercoaster ride of emotions. After being away from my homeland for one and half year, I had planned to go back to conduct this study. However, an unforeseen pandemic, the coronavirus disease changed everything. The research design and methods had to be modified in order to cope with this situation. Since it affected the operation of the case companies, they became occupied with handling this crisis and the study was progressing slow. It was truly, a stressful period for everyone. After many sleepless nights and countless battles with myself, moving back and forth between giving up and trying once again, I cannot express how happy and relieved I am right now.

This achievement is not of mine alone. First of all, I would like to dedicate this thesis to my parents, Lalit Dura and Dilmaya Dura. I wouldn't be here without their sacrifices, love and support. I also want to mention my precious sisters Sunita and Susma, and brother Dilip for their love. Then, I want to thank my supervisor, Nina Pereira Kvadsheim for being so kind and patient with me and, for motivating and guiding me so well throughout this journey. Next, I would like to thank my friend Bishal Tuladhar for connecting me with the case companies in Nepal. Another heartfelt gratitude goes towards Kencho Ongdi of Everest Lodges and Rakesh Limbu of International Trekkers for their support and contribution to this study. My special thanks go to the person who has been my strength in the times of my despair, my peace during the storm, my light of hope and my safe haven – my love, Sander Westre Mork. Finally, thank you reader, for taking your time to go through my work. I hope you will find it interesting and useful.

Best regards

Suman Dura

Abstract

Purpose: The purpose of this study is to contribute to the literature on circular economy (CE) in the tourism sector. The study intends to identify the drivers and barriers in implementing circular strategies in the tourism sector and generate an appropriate business model for achieving circularity in the case companies. Furthermore, the study also examines whether the Backcasting and Eco-design for circular economy (BECE) framework is a useful tool for facilitating circular thinking in the services sector.

Method: Based on the extant literature, there is lack of CE frameworks applicable in services sector. A multi-case approach was chosen where the BECE framework was used in two companies; a Destination Management Organization and a lodge designed as workshops. The data were collected from the interview and documents used in facilitating the workshop.

Findings: The findings from this study show that local participation and collaboration, establishing a regulatory framework, government support, incentives for local businesses and communities to invest in energy efficiency and alternative energy sources and training regarding better waste management practices are the drivers of CE. On the other hand, lack of awareness, lack of local participation, expensive solar panels and improper waste management system are the barriers. Virtualizing action is deemed to be the most appropriate and effective in leading the transition, which emphasizes the role of technology. And, the BECE framework when planned and designed carefully, proved to be a useful tool in understanding the current business model and developing new circular strategies without compromising the business priorities.

Limitations: The study is done through the company's perspectives therefore, customer's perspectives were not included in the analysis. In addition, the outbreak of COVID-19 brought difficulties in the data collection process. Direct field workshop was not possible due to travel restrictions. Further, the focus of the case companies was diverted towards resolving the issues brought by the pandemic upon their business operations, which delayed the data collection. Finally, due to lack of timeframe, the study has not covered the implementation phase of the developed strategies.

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List of Abbreviations

BM(s)	Business Models
B2B	Business to Business
B2C	Business to Consumer
BECE	Backcasting and Eco-design for Circular Economy
C2C	Cradle-to-Cradle
CE	Circular Economy
CEBM(s)	Circular Economy Business Models
CIRT	Center for Regional and Tourism Research
CLSC(s)	Close Loop Supply Chains
CVP	Customer Value Proposition
DMO	Destination Management Organization
EMF	Ellen MacArthur Foundation
EPA	Environmental Policy Agency
GDP	Gross Domestic Product
IE	Industrial Ecology
LCA	Life Cycle Assessment
MET	Material, Energy and Toxicity
MFA	Material Flow Accounting
PSS	Product Service Systems
PSSC	Product Service Supply Chain
ReSOLVE	Regenerate Share Optimize Loop Virtualize Exchange
SBMI	Sustainable Business Model Innovation
SDG(s)	Sustainable Development Goals
SME(s)	Small and Medium Enterprises
SOSC	Service Only Supply Chains
SPD	Sustainable Product Design
SSC	Service Supply Chain
SSCM	Service Supply Chain Management
UN	United Nations
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
WHO	World Health Organization
WTO	World Tourism Organization
WTTC	World Travel and Tourism Council

Chapter 1

Introduction

1.1 Chapter Introduction

This Chapter presents the background/motivation of the study. In addition, it builds upon the research problem, research objectives and research questions. The Chapter ends with giving a brief overview of how the thesis is organized.

1.2 Background/Motivation

The current linear business model of “take-make-use-throw” is putting tremendous pressure on the environment and pushing beyond the limits of the planet’s ability to cope (PWC 2020, Mendoza et al. 2017), resulting in melting glaciers, rising sea levels, dying cloud forests and scrambling wildlife (Nunez 2019). Around 40 percent of the ocean is polluted, suffering depleted fisheries and loss of coastal habitats (UNDP 2020). As human civilization flourished with industrialization and urbanization, greenhouse gases produced by human activities have caused global warming (NASA 2020).

The uncontrolled exploitation of resources has already brought many repercussions posing danger to survival on the planet for all living beings. Every year, almost 1.3 billion tons of food is wasted while the number of people going hungry has reached almost 2 billion (UNDP 2020). According to WHO (2020a), 9 out of 10 people breathe polluted air. Additionally, “only 3 percent of the world’s water is drinkable and 80 percent of wastewater goes into waterways without adequate treatment” (UNDP 2020). Nevertheless, the demand for natural resources is still expected to increase rapidly due to the increase in population and strong middle-class growth (Lieder and Rashid 2016).

Several attempts have been made around the world to reduce the impacts on the environment and economy, to solve the problem of resource scarcity (Lieder and Rashid 2016). Companies, industries, organizations and governments are trying to achieve economic growth without depending on the natural resources and without damaging the environment (Lacy and Rutqvist 2015). Especially, with the rise of the concept of circular economy (CE), which is based on the principles of designing out waste and pollution, keeping products and materials in use, and regenerating natural systems (EMF 2017f).

Shifting from the linear to the CE has many benefits, for instance, such a transition is estimated to give 48 percent reduction of carbon dioxide emissions by 2030 (EMF 2017f). Businesses can benefit from CE by generating new profit opportunities, reducing costs due to lower virgin-material requirements and stronger relationships with customers (EMF 2017c). A major study by McKinsey and Ellen MacArthur Foundation in 2015 determined that CE strategies, such as efficient use of resources and finding value throughout the product life cycles could improve the resource productivity in Europe by 3 percent by 2030 as well as generate cost savings of 600 billion euros per year and 1.8 trillion other economic benefits (McKinsey Center for Business and Environment 2015, 2017). Similarly, according to EMF (2017c), it is possible to reduce primary material consumption by 32 percent by 2030. CE can be the solution to the resource scarcity problem in accordance with maintaining the planet's ecosystem.

While the emphasis for the manufacturing industry has been on transitioning from linear to CE, there is lack of CE frameworks and applications of CE principles in the service sector (Heyes et al. 2018). Defining service is not easy because of its diverse nature (Lovelock and Patterson 2015) and each sector has its own challenges (Johnston and Clark 2008). Following Lovelock and Patterson (2015), any economic activity which provides time, place, form, problem solving or experiential value to the receiver is a service. It can also be referred to as an act, performance or experience offered by one party to another, essentially intangible, not resulting in the ownership of anything but, creating value for the receiver. The production of the service itself, may or may not be tied to a physical product (Lovelock and Patterson 2015). Service operations are not limited to the services provided by businesses to consumers (B2C) like financial, retail, entertainment, but also include business to business (B2B) services like consultants, internal services like software providers, public services like health, education and non-profit services like charities, aid, etc. (Johnston and Clark 2008).

The service sector is as responsible as the manufacturing sector for environmental degradation (Julião et al. 2018). Acting as a bridge between the manufacturers and the consumers, it can influence both sides. It can influence suppliers to provide more environmentally conscious products and services, reducing resource inputs in their operations such as energy efficiency programs and cutting business travel. It can also

educate consumers about the relative merits of different products that are offered, reducing resource use on the part of consumers by substituting more environmentally beneficial services or activities, etc. (Rosenblum, Horvath, and Hendrickson 2000, p.4669).

1.3 Research problem

One of the major service industries contributing towards economic development of a country is tourism. The WTO (2020) defines tourism as “a social, cultural and economic phenomenon, which entails the movement of people to countries or places outside their usual environment for personal or business/professional purposes.” It can have direct or indirect economic impact such as direct sales of food, accommodation, transportation, etc. as well as creation of new job opportunities like guides, translators, among others. As per WTTC (2020), the tourism sector contributed 8.9 trillion US dollars to the world’s GDP creating 330 million jobs. However, the very movement of people from one place to another for any purpose can cause negative impacts on the environment by generating pressure on local resources and causing negative externalities (Florido, Jacob, and Payeras 2019). Hence, it is important for the tourism sector to shift from the linear model to circular model.

There is a research gap in the application of CE principles in the tourism industry (Julião et al. 2018). Most of the studies have been carried out by Chinese authors and very few in other parts of the world. A study about differences in the CE policies in China and Europe found that the Chinese possess a broader perspective on CE (McDowall et al. 2017) as illustrated in Table 1-1 below. Whereas, developing countries are far behind on this road to transition.

Table 1-1 Major studies on CE in tourism

Authors	Title
(Qing-zhong and Xiao-lin 2007)	The research on the development idea and the running system of circular economy of tourism
(Qing-zhong 2006)	The new development conception of tourism circular economy and its systematic operation mode
(Ming, Chen, and Li 2010)	Low-carbon tourism: The strategic choice of the tourism industrial ecology
(Shu et al. 2007)	The ecotourism, circular economy of tourism and sustainable development of tourism
(Li and Huang 2003)	On the tourism resource development and conservation based on circular economy
(Li and Huang 2004)	Development and protection of tourism resources based on circular economy theories

(Gao, Chen, and Tuo 2006)	Fresh thinking of recycling tourism economy development
(Zhang and Tian 2014)	The sustainable development of circular economy under the perspective of ecological tourism
(Luo, Huang, and Wang 2009)	Discussion on circular economy-oriented rural tourism development mode
(Scheepens, Vogtländer, and Brezet 2016)	Two life cycle assessment (LCA) based methods to analyse and design complex (regional) circular economy systems. Case: Making water tourism more sustainable
(Jones and Wynn 2019)	The circular economy, natural capital and resilience in tourism and hospitality
(Julião et al. 2018)	Exploring circular economy in the hospitality industry
(Manniche et al. 2017)	Destination: A circular tourism economy: A handbook for transitioning toward a circular economy within the tourism and hospitality sectors in the South Baltic Region
(Rodríguez-Antón and Alonso-Almeida 2019)	The circular economy strategy in hospitality: A multi-case approach

Source: Own compilation

The literature regarding CE on tourism is limited, it does not include previous studies on the transition or the ways to design circular businesses in tourism (Florido, Jacob, and Payeras 2019). In Table 1-1, we can see that there is lack of studies dedicated towards guiding the CE transition in tourism through a framework/model. According to Jones and Wynn (2019), there is a need for a conceptual framework to guide and integrate the concepts of circularity and sustainability in tourism.

There are frameworks such as sustainable business model innovations (SBMIs), closed loop supply chains (CLSCs) to help organizations adopt CE practices however, they are not able to fulfill the CE requirements (Mendoza et al. 2017). This therefore led to the development of a Backcasting and Eco-design for circular economy (BECE) framework, which was tested in redesign of vacuum cleaners. It was later implemented in a service-oriented technology company, which acted as a useful tool for exploring, analyzing and guiding the implementation of CE in service-oriented organizations. In fact, this study responds to Mendoza et al's (2017) call to further research on the implementation of this framework in other service-related organizations, specifically to find out similarities or differences in the drivers and barriers to CE implementation.

1.4 Research questions

The objective of this thesis is to explore the potential of tourism sector to become circular and explore the usability of the BECE framework in the tourism sector. Thus, the research questions for this thesis are as follows:

RQ 1: How can the tourism sector transition towards a circular economy?

The objective of this question is to identify opportunities and challenges of the tourism sector in becoming circular. Identifying these will promote CE thinking so that government, companies and customers involved in this value chain will be aware and realize the need for adopting circular practices in the tourism sector. It seeks to add to the literature gap on CE transition in the tourism sector.

In order to address this RQ 1, the following sub-questions need to be answered:

RQ 1.1 What are the main factors driving circularity in the tourism sector?

This question aims to identify the factors, which can act as drivers and enablers to motivate people and businesses in the tourism sector to adopt CE strategies. According to the literature on CE, there are cultural, regulatory, financial and sectoral drivers (Hart et al. 2019). This question intends to identify which drivers play a vital role in the transition of the tourism sector into a CE. These drivers will provide competitive advantage to the companies and help them address the environmental issues.

RQ 1.2 What are the main obstacles in achieving circularity in the tourism sector?

The barriers to CE transition are also categorized into cultural, regulatory, financial and sectoral (Hart et al. 2019). Thus, this question aims to identify major challenges in the tourism sector to adopt CE practices and how to overcome them. It also intends to examine whether the barriers align with the ones identified in the literature or there are some variations.

RQ 1.3 Which strategies or business models are the most appropriate in the tourism sector?

Through literature studies, there are strategies such as 9R framework, ReSOLVE strategies and CE business models (CEBMs), such as, circular supply chains, sharing platform, product as a service, product life extension and, recovery and recycling (these are discussed in detail

in Chapter 2). However, it is important to identify the most feasible and effective way to incorporate circularity in the tourism value chain without compromising the business priorities.

RQ 2: How useful is the BECE framework in the tourism sector?

This question aims to verify the usability of the BECE framework developed by Mendoza et al. (2017). This framework was developed to make it easier for the service companies to adopt circular practices. Previous studies by Mendoza et al. (2017), (Heyes et al. 2018, Mendoza, Gallego-Schmid, and Azapagic 2019), show evidence of its usefulness in a vacuum cleaner, a technology company and a higher education institution while calling researchers to apply this framework in other service companies as well. Thus, the framework is tested in this study in order to identify its usefulness and limitations.

1.5 Thesis Structure

This thesis is structured in six chapters, as illustrated in Figure 1-1 below.

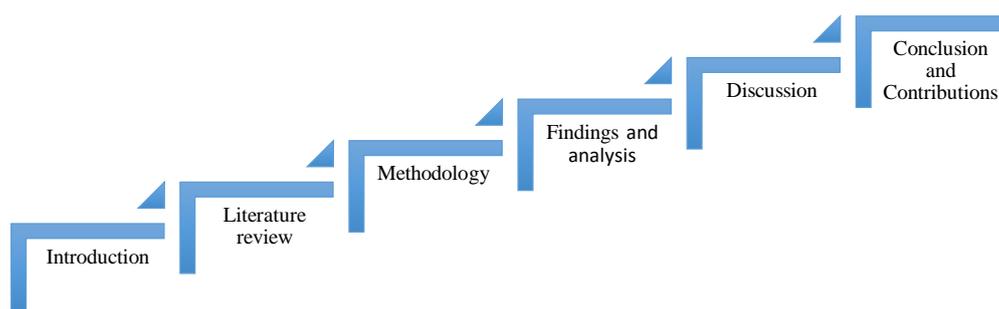


Figure 1-1 Thesis structure
Source: Own compilation

The background and motivation for this study, the research problem and research questions are introduced in Chapter One - Introduction. The theoretical background as well as review of literature to support the study are presented in Chapter Two – Literature Review. The research philosophy, methods of data collection, case overview, data collection and analysis techniques are presented in Chapter Three – Methodology. The results from this data collection are explained in Chapter Four – Findings and Analysis. The findings and answers to the research questions are further discussed in Chapter Five – Discussions. Finally, the thesis is summarized with theoretical and practical implications as well as limitations and further areas of study in Chapter Six – Conclusions and Contributions.

Chapter 2

Theoretical background

2.1 Chapter Introduction

This Chapter provides an overview of the literature and theories, which focuses on CE and the tourism sector. First, the concept of CE, its strategies and business models are introduced. Then, relevant theories on sustainability and CE in tourism are mentioned. At last, frameworks for facilitating circularity are explained.

2.2 The CE: An overview

It is common to perceive CE as sustainability but, due to differences in the origins, motivations, priorities, beneficiaries and so on between these two concepts, Geissdoerfer et al. (2017) argued that CE, is in fact, one of the solutions for achieving sustainability. In a CE, growth is decoupled from scarce resource use (Lacy and Rutqvist 2015). Thus, it focuses more on eliminating waste and bringing it back to the system whereas, sustainability has broader goals, that is, providing economic, environmental and social benefits (Geissdoerfer et al. 2017). The definition of CE itself, is fragmented among the authors since it is derived from different fields such as cradle-to-cradle (C2C), industrial ecology (IE), among others. According to Smolders and Snieder (2012), there are six major schools of thought dating back to the late 1970s, which helped in inspiring the concept of CE and these are illustrated in Table 2-1.

Table 2-1 Schools of thought

Schools of thought	Description	Principles
Regenerative design (Lyle 1996)	Processes within all systems renew or regenerate their own sources of energy and materials they consume to stay within nature's limits	<ul style="list-style-type: none"> • Letting nature do the work • Considering nature as both model and context • Aggregating, not isolating • Seeking optimum levels for multiple functions, not the maximum or minimum level for anyone • Matching technology to need • Providing multiple pathways • Seeking common solutions to disparate problems • Shaping form to manifest processes

Performance economy (Stahel 2010)	Economy in loops (product-life extension, waste prevention, selling services instead of products)	<ul style="list-style-type: none"> • Producing performance • Managing performance over time • Selling performance
Cradle-to-Cradle (McDonough et al. 2003)	Material flows as loops. Technical nutrients should not have components harmful to the environment and biological nutrients should be degradable.	<ul style="list-style-type: none"> • Waste is equals to food • Use current solar income • Celebrate diversity
Industrial ecology (Graedel and Allenby 2010)	Waste is a resource and production processes are designed to mimic the living system	<ul style="list-style-type: none"> • Waste as by-product to use in other production processes • Efficient use of resources and materials • Technology advances to close materials and energy loops
Biomimicry (Benyus 1997)	Imitating nature's designs and processes to solve problems existing in human society	<ul style="list-style-type: none"> • Nature runs on sunlight • Nature uses only the energy it needs • Nature fits form to function • Nature recycles everything • Nature rewards cooperation • Nature banks on diversity • Nature demands local expertise • Nature curbs excesses from within • Nature taps the power of limits
Blue economy (Pauli 2010)	Learning how organisms are formed and working to find solutions to our challenges should be determined by the combination of their local environment, physical and ecological characteristics	<ul style="list-style-type: none"> • Cascading nutrients and energy • Replacing something with nothing • Celebrating diversity • Generating multiple benefits

According to EMF (2017c), CE is both restorative and regenerative by design. Geissdoerfer et al. (2017, p.766) define CE as “a regenerative system in which resource input and waste, emission, and energy leakage are minimized by slowing, closing, and narrowing material and energy loops. This can be achieved through long-lasting design, maintenance, repair, reuse, remanufacturing, refurbishing, and recycling.” In addition, an analysis of 114

definitions of CE by Julian Kirchherr and others found out that the concept is mostly perceived as reduce, reuse and recycling strategies (Kirchherr, Reike, and Hekkert 2017). They have defined the CE as:

A CE describes an economic system that is based on business models which replace the 'end-of-life' concept with reducing, alternatively reusing, recycling and recovering materials in production/distribution and consumption processes, thus operating at the micro level (products, companies, consumers), meso level (eco-industrial parks) and macro level (city, region, nation and beyond), with the aim to accomplish sustainable development, which implies creating environmental quality, economic prosperity and social equity, to the benefit of current and future generations (Kirchherr, Reike, and Hekkert 2017, p. 224-225)

This definition given by Kirchherr, Reike, and Hekkert (2017) will serve as a basis for understanding CE in this study since it is more elaborated than the others and mentions the micro, meso and macro levels, which are equally important in the tourism sector. The relevance can be seen in sub-section 2.3, where I present the theories and literature on the tourism industry.

2.2.1 Essential building blocks of CE

According to the EMF, there are four essential building blocks of a CE i.e. CE design, new business models, reverse cycles and, enablers and favorable system conditions (EMF 2017b).

- (i) **CE design** - It refers to “building core competencies like advanced skills, information sets and working methods to facilitate product reuse, recycling and cascading”
- (ii) **New business models** – “The shift to a CE requires innovative business models that either replace existing ones or seize new opportunities”
- (iii) **Reverse cycles** – New and additional skills like logistics, sorting, warehousing, risk management, power generation, molecular biology and polymer chemistry are needed to return products to the soil or back into the production system
- (iv) **Enablers and favorable system conditions** – To increase the reuse of materials and resource productivity, enablers like collaboration, rethinking incentives, providing a suitable set of international environmental rules, leading by example and access to finance will play a major role (EMF 2017b).

2.2.2 Principles of CE

The EMF (2017a) has outlined three principles of CE. They are: (i) designing out waste and pollution so that waste is considered as a flaw in the design itself and ensuring that it doesn't exist in the first place, (ii) keeping products and materials in use by designing the products in such a way to facilitate repair, reuse and remanufacture and not discarded after single use, and (iii) regenerating natural systems by returning valuable materials and treating waste as a resource (EMF 2017a).

Whereas, Suárez-Eiroa et al. (2019) assert that there are seven operational principles of CE and these include:

- i. **Adjusting inputs to the system to regeneration rates** - by substituting non-renewable by renewable inputs, substituting renewable materials with low regeneration rates for other with faster regeneration rates, adjusting taxes and subsidies of technology, products and materials based on their resource regeneration rates, improving energy efficiency, resource productivity, virtualizing products, etc. and fostering renewable mobility (Suárez-Eiroa et al. 2019).
- ii. **Adjusting outputs from the system to absorption rates** - Substituting materials and processes that produce technical outputs by those which produce biological outputs, substituting processes for those with lower waste generation rates (i.e. more eco-efficiency processes), adjusting taxes and subsidies of technology, products and materials based on their waste generation rates (Suárez-Eiroa et al. 2019).
- iii. **Closing the system** - Separating biological and technical wastes properly, remanufacturing products and components, promoting and improving down cycling, recycling and upcycling of wastes (i.e. logistics, take-back systems, technology, etc.), promoting energy recovery by converting waste into heat, electricity or fuel, promoting Extended Producer Responsibility (Suárez-Eiroa et al. 2019).
- iv. **Maintaining resource value within the system**- Interconnecting stages (i.e. redistributing second-hand goods), promoting industrial symbiosis (i.e. establishing standards, cascading, by-products, etc.), increasing durability (i.e. practical guides for reparability, preventive and corrective maintenance, repurposing, etc.), reducing obsolescence (i.e. updating software) (Suárez-Eiroa et al. 2019).
- v. **Reducing the system's size** - Informing consumers properly (i.e. eco-labelling, product labelling, product declarations, etc.), expanding the Extended Consumer

- Responsibility, promoting functional service economy and sharing economy (i.e. collective mobility), promoting green procurement (i.e. local products, season products, etc.), adjusting selling doses to consumer doses (Suárez-Eiroa et al. 2019).
- vi. **Designing for circular economy** - Eco-design (i.e. optimizing packaging, improving durability, etc.), designing transparent, reproducible and scalable products to build the same products in other places based on local resources, thinking about practical utilities and consumer preferences (customization/made to order), designing new business models and strategies, designing new methodologies to guarantee a continual improvement, designing projects to promote sustainable development and circular economy (Suárez-Eiroa et al. 2019).
 - vii. **Educating for circular economy** - Adjusting educational curricula to the current challenges, promoting knowledge, skills, capabilities and values that ensure the proper performance of circular economy, promoting habits and individual actions in favor of circular economy (Suárez-Eiroa et al. 2019).

2.2.3 Material flows in a CE

Figure 2-1 is a simple diagram representing the material flows in a CE. The inner the material flow is in the circle, the less demanding it is to use resources. Products should be kept in the inner circle as much as possible by repair and refurbishment before taking them into remanufacturing and recycling whereas landfilling has to be the final option (Korhonen, Honkasalo, and Seppälä 2018).

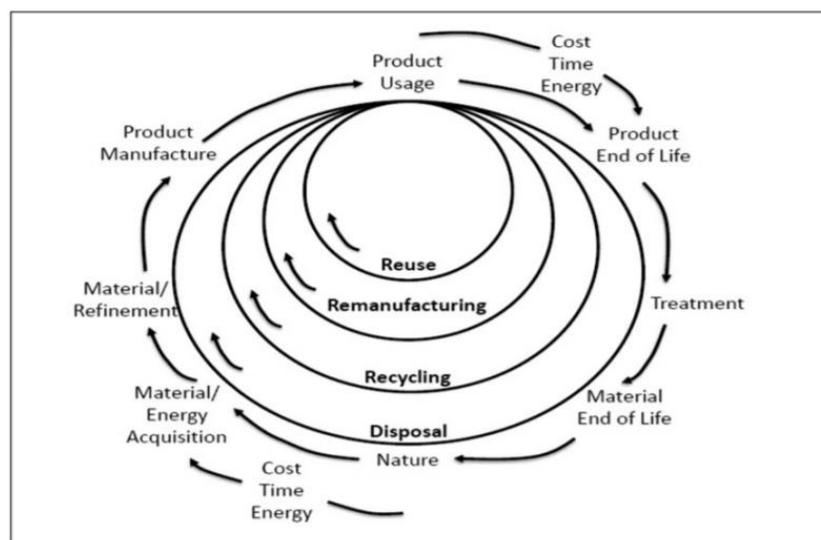


Figure 2-1 Material flows in a circular economy
 Source: (Mihelcic et al. 2003) (Korhonen, Honkasalo, and Seppälä 2018)

Another intensive material flow has been proposed by EMF, which distinguishes materials into “biological” and “technical” and tries to capture the flow of materials, nutrients, components and products, adding financial value (EMF 2017c) (see Figure 2-2).

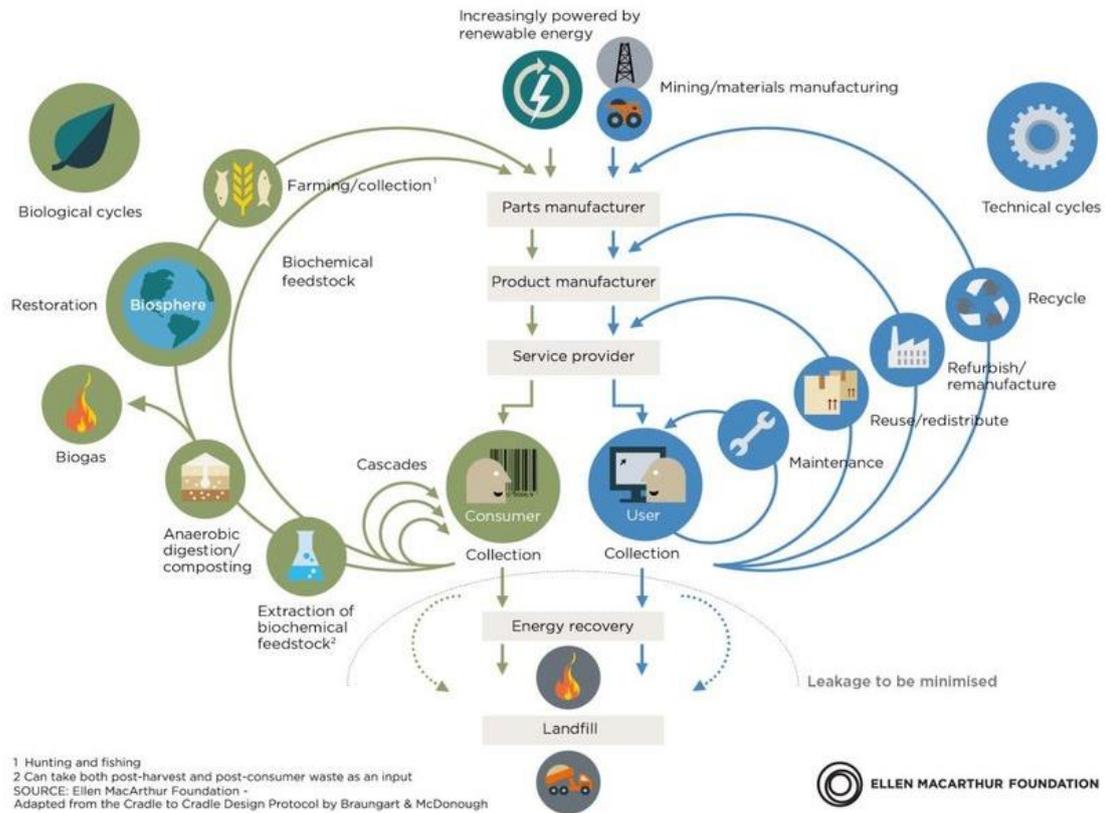


Figure 2-2 Butterfly diagram
Source: (EMF 2017d)

Biological materials are renewable and organized in an open loop through subsequent steps of extraction, production of bio-based materials, energy recovery, and returning nutrients to the biosphere to feed the next cycle of primary produce (Velenturf et al. 2019). On the other hand, technical materials refer to the limited materials that are used in a closed loop system through sharing, maintaining, reusing, remanufacturing, and recycling of products (Velenturf et al. 2019). This diagram is widely known as the butterfly diagram and is supposed to help businesses differentiate their materials and use appropriate strategies to bring them back into the economy.

2.3 CE implementation

Effective implementation of CE practices can facilitate the economic, environmental and social dimensions of sustainable development (Korhonen, Honkasalo, and Seppälä 2018). Hence, CE should adapt to the natural ecosystem cycles and utilize these in economic cycles

by respecting their reproduction rates (Korhonen, Honkasalo, and Seppälä 2018). However, it is important to note that implementation is possible only through long-term commitment from all stakeholders including the government (Scheepens, Vogtländer, and Brezet 2016).

2.3.1 Strategies

There are 9Rs of circular strategies i.e. refuse, rethink, reduce, reuse, repair, refurbish, remanufacture, repurpose, recycle and recover (Potting et al. 2017); (Kirchherr, Reike, and Hekkert 2017). Figure 2-3 below presents these strategies in supply chain to shift from linear to CE with R0 i.e. “Refuse” being the highest priority and R9 i.e. “Recover” being the least. Since the principle of CE is to design out waste, rather than focusing on recycling or recovering waste, companies should rethink strategies to eliminate waste from the very beginning. The “Refuse” and “Rethink” strategies deliver same product function with less consumption of natural resources so, they are high-circularity strategies (Potting et al. 2017). There should be more emphasis on smarter product use and manufacture rather than extending the lifespan of products and its parts (Potting et al. 2017). However, the most commonly used in around 35% - 40% definitions of CE are the 3Rs – Reduce, Reuse and Recycle (Kirchherr, Reike, and Hekkert 2017), even though recycling is one of the low-circularity strategy in this framework (Potting et al. 2017).

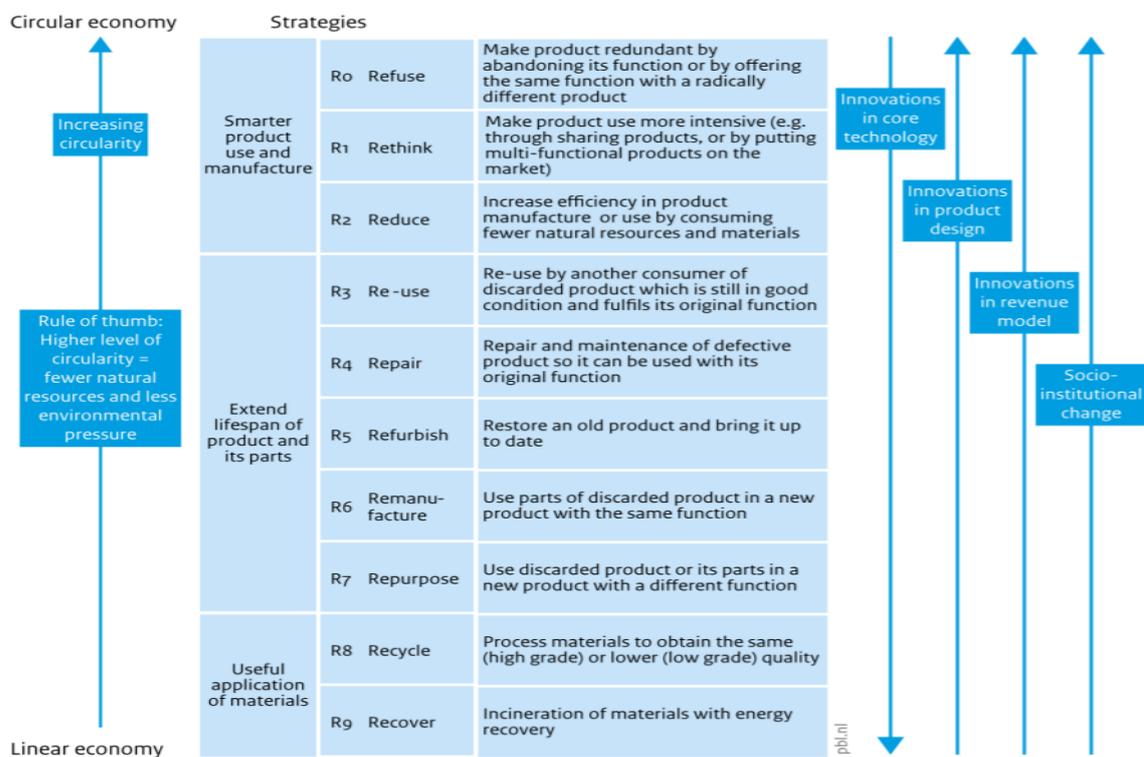


Figure 2-3 9Rs of circular strategies according to priority
 Source: (Potting et al. 2017) (Kirchherr, Reike, and Hekkert 2017).

2.3.2 Business models

A business model (BM) is the framework for an organization to create, deliver and capture value (Osterwalder and Pigneur 2010). The first and most important one is selecting the right BM or strategy for the business. Then, the companies might want to use just one BM or mix two or more. Depending on the company’s goal, capital availability, risk, policies and capabilities, they need to choose the right approach whether to run this model as a pilot project, a full project or a joint venture with another partner (Lacy and Rutqvist 2015).

Mentink (2014, p. 24) has defined circular economy business model (CEBM) as “the rationale of how an organization creates, captures and delivers value and within closed material loops.” There are various CEBMs in the literature such as slowing, closing and narrowing loops (Stahel 1994, Bocken et al. 2016) and ReSOLVE strategies model by EMF (described further in sub-section 2.5.1). Five new BMs for CE growth by Lacy and Rutqvist (2015), are explained in this section, as illustrated in Figure 2-4.

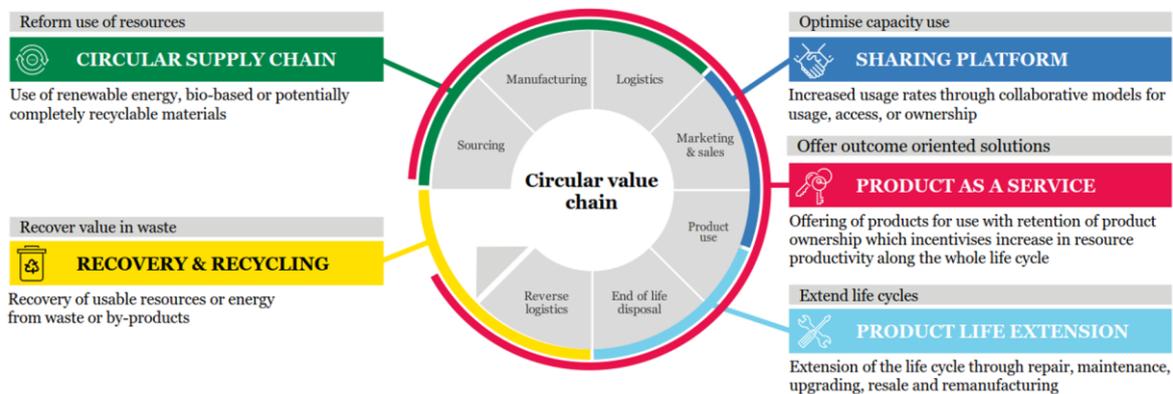


Figure 2-4 Circular economy business models
Source: (Accenture 2014, 2019).

i) Circular supply chains:

This BM suggests using bio-based materials instead of non-renewable materials (Lacy and Rutqvist 2015). Thus, it refers to recycling and reusing technical materials as long as possible. Companies can either produce circular supplies for others or for their own use. Collaborating with both suppliers and customers is crucial. Circular material and energy are less exposed to price increases and volatility which attracts manufacturers. On the other hand, it helps to attract customers and build long-term relationships by minimizing risk, complying with regulations, securing stable pricing and ensuring long-term supply. It is

important to effectively track material flows so as to develop new financial and production models that use materials more efficiently (Lacy and Rutqvist 2015).

ii) Recovery and recycling

This model suggests eliminating leakage of every material; by-product and wastage and optimizing to maximize revenue (Lacy and Rutqvist 2015). There are two variations of this model: (i) recovering end-of-life products to recapture value in own products or any company's products, and (ii) recovering waste and by-products from a company's own production process. It involves dismantling products and salvaging their value to reprocess it as the same or new product. The benefits of this model are as follows:

- Reduced costs of compliance and waste management.
- Increased revenue from selling unwanted outputs.
- Diminished environmental impact with lower demand for virgin resources and energy.
- Convenient options for customers to dispose of unwanted products.
- New interaction points between companies and customers where disposal and new purchases can be combined.
- Deeper insights into how products are disposed of, which can be used in product development and design for recyclability efforts.
- A lower material bill when switching from primary to secondary resources (not the case for all material types, depending on quality and performance levels of primary vs. secondary). (Lacy and Rutqvist 2015).

iii) Product-life extension:

This model highly values product features such as durability, quality and functionality. It focuses on increasing the product lifespan and generate revenue throughout its product life (Lacy and Rutqvist 2015). The value and utility of products can be increased by the following activities (Lacy and Rutqvist 2015):

- 1) **Build to last:** creating high-quality, extremely durable products; targeting customers who are willing to pay a premium for quality, or those who access the more durable product via alternative revenue models such as pay per service.

- 2) **Refurbish:** restoring used products to their original, “like new” state; targeting customers who are price-sensitive and don’t mind buying “good as new” products that are often sold with similar warranty and service offers as new ones; or remanufacturing, which involves remaking the product in an “industry-like” setting.
- 3) **Take-back/trade-in/buy-back to remarket:** collecting pre-owned goods to trade or resell, also called “ReCommerce”; targeting customers looking for a “good deal.” This is typically handled by specialized companies rather than primary manufacturers and retailers, although primary suppliers are increasingly interested in tapping second-, third-, and fourth-life markets and integrating reselling into the product range.
- 4) **Upgrade:** adding new features, functionality or fashion instead of replacing the core product; targeting customers more interested in consuming content, functions, and style rather than the products themselves.
- 5) **Refill:** replacing a function that’s depleted more quickly than the product itself, such as refillable packaging; targeting customer segments where the real demand is for a disposable part of the product, not the physical “carrier.”
- 6) **Repair:** fixing a product that’s broken; targeting customers who are satisfied with product performance and who have limited interest in replacing an item. (Lacy and Rutqvist 2015).

iv) **The sharing platform**

In this model, the producers and consumers have co-ownership of the products and are connected through a platform (Lacy and Rutqvist 2015). The company that owns the platform gets a commission fee for allowing these transactions. Instead of offering new products to the market, this model aids in fulfilling customer demands by utilizing the idle capacity of the resources (Lacy and Rutqvist 2015). Due to this model, multiple customers can use the same products by renting, sharing, swapping, lending, gifting, etc. The major enablers of sharing platforms are internet, mobile software, social communities, positioning services, remote diagnostics, remote unlocking, analytics and identification. For companies, it brings opportunities for revenue generation, efficient use of resources and engaged employees whereas, for customers, it facilitates convenience, price reduction, better product or quality and trust with the provider (Lacy and Rutqvist 2015).

v) **Product as a service**

In this model, companies provide the physical product and services to maintain a product's use through design, use, maintenance (Lacy and Rutqvist 2015). There are four types of product as service model.

- 1) **Pay for use:** Customers buy output rather than a product and pay based on use metrics such as miles driven, hours used, pages printed, or data transferred.
- 2) **Leasing:** Customers buy contractual rights to use a product over a longer period of time, typically with rights to exclusive and individual access.
- 3) **Rental:** Customers buy the rights to use a product for a short period of time, typically less than 30 days. A rental setup is generally more flexible than a lease agreement and customers might not have guaranteed unlimited access.
- 4) **Performance agreement:** Customers buy a pre-defined service and quality level and companies commit to guaranteeing a specific result. For example, it could be a “clean and snow-free street,” a “healthy indoor climate,” or a “well-lit city street. (Lacy and Rutqvist 2015).

2.3.3 Drivers and enablers of CE

The enablers of CE can be categorized into the following types (Hart et al. 2019);

- i) **Cultural enablers** such as leadership, sustainability/environmental drivers, stimulate demand, value chain engagement, long term relationships and partnerships, systems thinking
- ii) **Regulatory enablers** such as policy support and public procurement, regulatory reform, fiscal support, producer responsibility
- iii) **Financial enablers** such as whole life costing
- iv) **Sectoral enablers** such as clearer vision for CE in the built environment, better evidence base, collaboration and design tools and strategies, research and development (R&D), innovation, standards and assurance schemes, reverse logistic infrastructure (Hart et al. 2019).

Rising consumer demand and Environmental Policy Agency (EPA) influence companies to adopt more circular practices (Lacy, Long, and Spindler 2020). There is a common misconception that efficient resource use is the main driver of circularity. The major factor is the demand side i.e. customer engagement, their role during and after a product's use, and the way products are developed to meet resource needs (Lacy and Rutqvist 2015). It was

found that the economic drivers are the most important in transitioning to a CE (Gusmerotti et al. 2019). And, cultural and regulatory enablers were also equally important to increase awareness and support CE activities (de Jesus and Mendonça 2018).

Besides, a survey in UK construction industry by Adams et al. (2017) found out that the most important enablers for implementing CE in buildings and construction are:

- design tools and guidance
- measuring the value of material/product
- financial incentives to use secondary materials
- best practice case studies
- assurance schemes for reused/secondary materials
- awareness raising campaign
- development of enabling technologies to recover materials
- development of higher value secondary materials, viable take-back schemes and clear business case (Adams et al. 2017).

2.3.4 Barriers of CE

The barriers of CE can be categorized into four types: (i) cultural, (ii) regulatory, (iii) financial and (iv) sectoral (Hart et al. 2019).

- i) **Cultural barriers** such as lack of interest, knowledge/skills and engagement throughout the value chain, lack of collaboration between businesses, lack of collaboration between business functions
- ii) **Regulatory barriers** such as lack of consistent regulatory framework, obstructing laws and regulations, lack of incentives
- iii) **Financial barriers** such as high upfront investment costs, low virgin material prices, poor business case and unconvincing case studies, limited funding
- iv) **Sectoral barriers** such as lack of bandwidth compounded by an absence of coherent vision for the industry, complexity/confused incentives, long product lifecycles, technical challenges regarding material recovery, lacking standardization, insufficient use or development of CE-focused design and collaboration tools, information and metrics (Hart et al. 2019).

Many small and medium enterprises (SMEs) find it difficult to adopt CE business practices due to barriers like environmental culture, financial barrier, lack of government support and

effective legislation, lack of information, administrative burden, lack of technical skills, lack of support from the supply and demand network, etc. (Rizos et al. 2015); (de Jesus and Mendonça 2018). Similarly, Kirchherr et al. (2018) study shows that “lacking consumer interest and awareness” and “hesitant company culture” are the major cultural barriers in adopting CE business practices, whereas “low virgin material prices” and “high upfront investment costs” are the major market barriers to implement CE strategies and business models. In addition, “lack of demand pull for circular products and services” and “lack of transparency through the value chain” can also be major obstacles in circular business (Wolde 2016).

The barriers for implementing CE in hotel building are complexity, fragmented supply chain, low value of material/products at the end of life, lack of incentive, lack of CE knowledge, limited awareness across the supply chain and lack of interest (Adams et al. 2017). Transitioning from a linear to CE is not possible with the sole effort of an individual business but with interaction and joint collaboration among external actors, technological changes, changes in regulations, laws and infrastructures, industrial networks, consumer cultures, etc. (Florido, Jacob, and Payeras 2019).

2.4 CE in tourism

Tourism accommodations consume huge amount of non-renewable resources affecting the biodiversity and community (Girard and Nocca 2017). Thus, it is essential to change the consumption pattern in this industry and move towards a CE. As outlined in the research problem, finding relevant literature in the field of CE for tourism sector proved very challenging. Before analyzing CE in tourism, it is important to get familiar with the industry and its supply chain. This section will begin by presenting practices in tourism sector and highlighting important studies done so far.

2.4.1 Tourism – A product service supply chain (PSSC)

According to Wolak, Kalafatis, and Harris (1998), the major characteristics of services are (i) intangibility (ii) inseparability (iii) heterogeneity (iv) perishability. Furthermore, services are required to have some features in common which are as follows:

- Most services cannot be inventoried
- Intangible elements usually dominate value creation
- Services are often difficult to visualize and understand

- Customers may be involved in co-production
- People may be part of the service experience
- Operational inputs and outputs tend to vary more widely
- The time factor often assumes great importance
- Distribution may take place through non-physical channels (Lovelock and Patterson 2015).

Tourism is an economic activity, which depends on the environment, culture and communities for its existence and growth (Girard and Nocca 2017). Many tourism services are intangible, so, customers often rely on tangible cues, or physical evidence, to evaluate the service before its purchase and to assess their satisfaction with the service during and after consumption (Hudson 2008).

A typical service supply chain (SSC) consists of the service organization, suppliers, products/services and customers (see Figure 2-5)

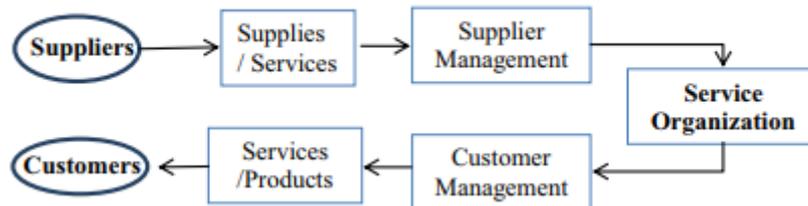


Figure 2-5 A service supply chain
Source: (Hussain, Khan, and Al-Aomar 2016)

Service supply chain management (SSCM) can be categorized into two types; (i) service only supply chain (SOSC)- where “products” are pure service only such as, psychology advice, healthcare body checking, financial consultancy, fortune telling, etc. and (ii) product service supply chain(PSSC)- where both “products” and “services” are equally important to create value such as restaurants, hotels, etc. (Wang et al. 2015). Thus, it is clear that tourism falls under PSSC. According to Chopra and Meindl (2016), every supply chain should aim to maximize the overall value generated. Different stakeholders are involved in tourism, for example, travel agencies, transport companies, restaurants, hotels, guides, local municipalities, recreation service providers and guests. The aim of the tourism supply chain should be to generate value not only for guests but for everyone involved in the supply chain.

A tourism value chain model has been developed by Center for Regional and Tourism Research (CIRT) (Manniche et al. 2017), as illustrated in Figure 2-6.



Figure 2-6 Tourism value chain
Source: (Manniche et al. 2017).

Figure 2-6 shows a typical tourism supply chain. It starts with pre-travel activities like booking flights or destination places directly or indirectly via travel agencies. Then, the traveler i.e. tourist arrives at the destination by using various means of transportation, such as, car, taxi, ferry, airplane, biking, walking, etc. The accommodation place i.e. host, provides a place for them to stay, for instance, hotels, apartments, camps and Airbnb. Most accommodation providers also provide food to their guests, otherwise, there are restaurants and food shops nearby. Then, the tourists can explore the host community and enjoy the attractions or specialties available.

In addition, Figure 2-6 also highlights the importance of infrastructure support throughout the value chain. For example, hotels need energy like electricity or fuels for heating, cooking. Each of these infrastructures – information technology, waste handling, construction and building, energy, water, education, communication and networks, as well as public sector and health are important for the operation of the business. The value chain itself, should be flexible to allow circular resource flow creating “circular infrastructure” i.e. access to renewable energy sources, circular systems for the treatment of water, access to suppliers and users who base their commercial models on leasing, circular designs, exchange platforms, etc. (Florido, Jacob, and Payeras 2019).

2.4.2 Sustainability in tourism

As already discussed, CE can help in achieving sustainable development (Geissdoerfer et al. 2017) and it is therefore deemed vital to discuss briefly sustainable development here. Precisely, this section aims to highlight significant practices regarding sustainability in tourism sector.



Figure 2-7 Sustainable Development Goals

Source: (UNDP 2020)

Figure 2-7 shows the 17 Sustainable Development Goals (SDGs) adopted by all member states of the UN in 2015, to gain peace and prosperity by 2030 via ending poverty and protecting the planet (UNDP 2020). Tourism can help in achieving this vision. According to (UNEP and WTO 2005), a sustainable tourism should address the needs of visitors, the industry, the environment and host communities with full consideration to its current and future economic, social and environmental impacts.

According to UNEP and WTO (2005), a sustainable tourism should have the following objectives:

- 1) **Economic viability** - ensuring economic viability and competitiveness of tourism destinations and enterprises for long term by understanding the market, delivering visitor satisfaction, maintaining good trading conditions, projecting an attractive destination and delivering business support.
- 2) **Local prosperity**- maximizing the contribution of tourism to the economic prosperity of the host destination by supporting local business, encouraging local employment and supplies, encouraging clusters and networking of businesses,

increasing levels of visitor spending (increasing length of stay, promoting local products) etc.

- 3) **Employment quality**- increasing the number of local jobs created by tourism and improving the quality (wage, service, availability without discrimination), ensuring and enforcing labor regulations, encouraging training programs, etc.
- 4) **Social equity** - ensuring widespread and fair distribution of economic and social benefits from tourism throughout the recipient community by developing opportunities for disadvantaged people, supporting social programs, etc.
- 5) **Visitor fulfillment** - providing safe, satisfactory and fulfilling experience to all visitors without discrimination, monitoring and addressing their satisfaction and quality of experience
- 6) **Local control** - engaging and empowering local communities in planning and decision making about the management and future development of tourism in their area by strengthening the capabilities of local governing bodies, raising public awareness, respecting the beliefs and traditions of indigenous tribes, etc.
- 7) **Community wellbeing** - maintaining and strengthening the quality of life in communities by reducing congestion, managing demand, careful planning of tourism infrastructures, promoting mutual use of facilities and services by residents and tourists, influencing the behavior of tourists towards local communities, etc.
- 8) **Cultural richness** - respecting and enhancing the historic heritage, authentic culture, traditions and distinctiveness of host communities by developing interpretative programs, capacity building, informing tourists about local culture, etc.
- 9) **Physical integrity** - maintaining and enhancing the quality of landscapes, avoiding or minimizing the physical and visual degradation of the environment by visitor management, development of codes and conduct, etc.
- 10) **Biological diversity** - supporting the conservation of natural areas, habitats and wildlife and minimizing damage, promoting ecotourism, raising visitor awareness, etc.
- 11) **Resource efficiency** - minimizing use of scarce and non-renewable resources in the development and operation of tourism facilities and services, minimizing water consumption, promoting reduce, reuse and recycle mentality, etc.
- 12) **Environmental purity**- minimizing the pollution of air, water and land, and generation of waste by tourism enterprises and visitors by promoting use of

sustainable transport, reducing use of harmful chemicals, influencing development of new tourism facilities, etc. (UNEP and WTO 2005).

2.4.3 Transitioning from linear to circular tourism

Tourism industry can gain economic benefits as well as address the socio-cultural and environmental issues by applying the principles of circular tourism (Girard and Nocca 2017). There is no popular definition of circular tourism since it is just beginning to get attention by researchers. Oreve (2015) and Girard and Nocca (2017, p. 68) have defined circular tourism as “a model able to create a virtuous circle producing goods and services without wasting the limited resources of the planet that are the raw materials, water and energy.” This is illustrated in Figure 2-8.



Figure 2-8 Circular tourism
Source: (Oreve 2015)

Figure 2-8 serves as a model to start thinking about circularity in tourism. If we align it with Figure 2-6, thus the Tourism value chain, it is clear that there is potential to make the value chain circular from the pre-travel phase till the end of the stay and even afterwards. Since tourism as service sector provides food, accommodation and other services to the guests, the CEBMs like sharing products between users, replacing ownerships by leasing, renting, etc. are already prevalent (Manniche et al. 2017).

Further, a three- axis model for a circular destination was developed and implemented in Balearic Islands (Florido, Jacob, and Payeras 2019). The model is presented in Figure 2-9 and it focuses on three main axis; (i) the public administration and/or the destination management organizations (DMOs), (ii) the tourism sector and (iii) the resident population. CE transition in the tourism sector is not possible with just one actor.

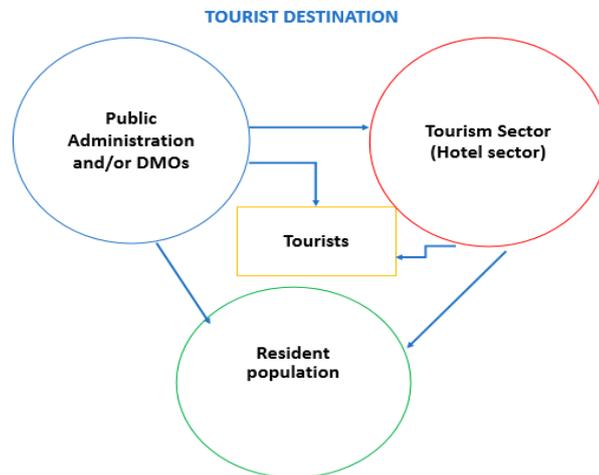


Figure 2-9 Three-axis model
Source: (Florido, Jacob, and Payeras 2019)

As mentioned by Chopra and Meindl (2016), the aim of these main axis should be to maximize the value in tourism. Thus, each axis/sector has a role to play which is outlined in Figure 2-10 below.

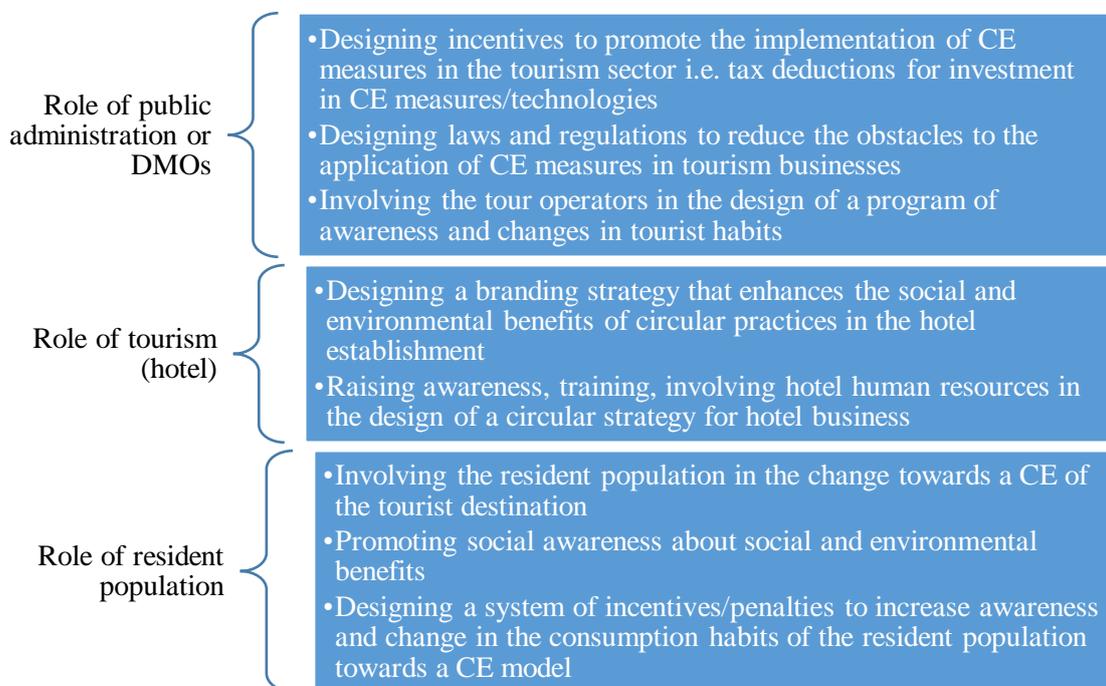


Figure 2-10 Roles of the three axis
Source: Adapted from (Florido, Jacob, and Payeras 2019)

CE brings many opportunities for the tourism industry to achieve a sustainable development and increase profitability (Florido, Jacob, and Payeras 2019). Hotel materials like furniture, carpets, wallpapers, electronic appliances, sanitary facilities, etc. should be used in a circular way. Thus, CEBMs such as leasing or remanufacturing and reusing of used products should be considered. Hotels consume large amount of energy to provide services like heating and operate other electronic appliances (Manniche et al. 2017). If they are located in remote places where public authorities cannot provide renewable source of energy then, the hotels should reduce and optimize their energy use (Manniche et al. 2017).

Similarly, innovative methods should be adopted to circulate the water consumption. It is also important to ensure that the design of accommodation helps to manage resources more effectively and avoid waste (Manniche et al. 2017). Thus, circular practices are not only about establishing sustainable growth strategies for companies but also, respecting environmental limitations, supporting the local economy, carrying out environmentally sustainable activities, conservation of nature and culture, etc. (Florido, Jacob, and Payeras 2019).

Tourism acts as a living laboratory for all actors i.e. government, destination place, hotels, tourists and local community to practice circular strategies (Florido, Jacob, and Payeras 2019). Thus, an International Conference on Green and accessible tourism (Wolde 2016), suggested the following strategies for circular tourism:

- Design for circularity (for example, constructing infrastructures or business processes in such a way to facilitate circular flow of resources)
- Use sharing platforms (for example, online networking sites or software, rental platforms)
- Regulate the CE (for example, sharing platforms)
- Circular procurement: use and buy products, materials and services that are sustainable and/or cradle-to-cradle, recycled, renewable, recyclable, biodegradable
- Circular construction including building passport for new hotels and parks
- Use performance-based contracting (for example, pay-per-wash in laundry services)
- Maximize digital services, maintenance, repair, refurbishment, and waste reduction, separation and management
- Circular sourcing (for example, using organic cleaning products)

- Take into account what happens after use (accountable to bring it back to the supplier or dispose in responsible way)
- Work together with your suppliers and clients
- Produce on demand (for example, making food only after getting orders will reduce food waste in comparison to making lot of food at once in anticipation)
- Renewable energy and energy conservation means boundary condition for circularity (example, solar panels)
- Mainly aimed at reducing carbon emissions
- Lower impact of traveling: public transportation, carbon compensation, bicycle tours, alternative routes
- Lower impacts during stay: buy local, organic, use small groups
- Aim for quality (for example, using low-quality materials will result in frequent repair and maintenance causing more disturbance, loss of time and money)
- Increase awareness of tourists i.e. to respect the local heritages and to adopt circular practices during their stay
- Promote eco-friendly tourism i.e. reducing the environmental impacts due to tourism activities (Wolde 2016).

Similarly, there are some strategies suggested by Florido, Jacob, and Payeras (2019), which are as follows:

- Improving the development of tourism infrastructures and quality of services as a tourist destination
- Reducing the seasonality of tourist services
- Diversifying tourism activity (cultural tourism, business tourism, health tourism, ecological tourism) with a circularity approach
- Strengthening cooperation in the hotel industry through local organizations and networks seeking to promote CE solutions
- Stable institutional and governance framework for innovation in relation to sustainability issues and environmental aspects (Florido, Jacob, and Payeras 2019)

2.5 Frameworks and tools for assessing circularity

Although there has been huge interest on transitioning toward a CE, very few frameworks have been developed to assess the circularity of businesses. The most commonly used framework is the Material Flow Accounting (MFA), where physical flows can be

differentiated into three major categories i.e. materials, water, and air (Fischer-Kowalski et al. 2011). This framework is mostly used to measure the circularity of a country or region since it measures imports, domestic extraction, unused extraction, immigrants, emigrants, exports, domestic material consumption, etc. Thus, it requires meta-compilations of data from various official statistics, most of which are regularly provided and updated by national statistical offices (Krausmann et al. 2015).

The EMF, in collaboration with 13 Global Partners and CE100 member companies has developed a Circulytics, a digital tool that businesses can use to measure their full circularity (EMF 2017e). This tool supports a company's transition towards the CE, regardless of industry, complexity, and size. It also reveals the extent to which a company has achieved circularity across its entire operations, going beyond assessing products and material flows. For example, 1) it measures a company's entire circularity, not just products and material flows, 2) supports decision making and strategic development for CE adoption and 3) demonstrates strengths and highlights the areas of improvement. Another circularity check was co-created by WeSustain and Circular Future (Ecopreneur 2020b). The Circularity Check is a free, online scan tool with a questionnaire of about 60 questions that determines a circularity score for a specific product and/or service, primarily intended as a product-based tool for self-evaluation by companies, from SMEs to multinationals (Ecopreneur 2020a).

A four-levels framework has also been proposed by Elia, Gnoni, and Tornese (2017) to support the adoption of CE paradigm, for instance, (1) processes to monitor, (2) actions involved, (3) requirements to be measured, and (4) implementation level. An extensive literature review was carried out to identify the frameworks of CE classified into four categories: (i) sustainable business model innovation (SBMI), (ii) sustainable product design (SPD), (iii) closed loop supply chains (CLSCs), and (iv) product-service systems (PSS) (Mendoza et al. 2017). Using ReSOLVE checklist, it was found out that although most of the frameworks satisfy some of the actions and requirements, none satisfies all of the criteria and this is discussed next (Mendoza et al. 2017).

2.5.1 ReSOLVE checklist

The EMF and McKinsey Center for Business and Environment (2015) identified six actions that the companies can take to become more circular. A brief description and examples of each action is presented in Table 2-3.

Table 2-2 ReSOLVE checklist

Actions	Description	Examples
Regenerate	Maintaining and enhancing the earth's biocapacity	<ul style="list-style-type: none"> - Shift to renewable energy and materials - Reclaim, retain and restore health of ecosystems - Return recovered biological resources to the biosphere
Share	Full use of goods, eliminating waste and duplication	<ul style="list-style-type: none"> - Share assets (e.g. cars, rooms, appliances) - Reuse/secondhand - Prolong life through maintenance, design for durability, upgradability, etc.
Optimise	Removing waste energy and materials in the production and consumption of goods, using technology to maximise resource use	<ul style="list-style-type: none"> - Increase performance/efficiency of product - Remove waste in production and supply chain - Leverage big data, automation, remote sensing and steering
Loop	Composting organic materials and recycling, reusing or remanufacturing technical materials	<ul style="list-style-type: none"> - Remanufacture products or components - Recycle materials - Digest anaerobically - Extract biochemical from organic waste
Virtualise	Displacing physical products by digital products or services	<ul style="list-style-type: none"> - Books, music, travel, online shopping, autonomous vehicles, etc.
Exchange	Upgrading technologies or replacing old methods	<ul style="list-style-type: none"> - Replace old with advanced non-renewable materials - Apply new technologies (e.g. 3D printing) - Choose new product/service (e.g. multimodal transport)

Source: (McKinsey Center for Business and Environment 2015) (Williams 2016)

2.5.2 Business Canvas Model

A good business model will provide considerable value to the customer and collect a viable portion of this in revenues in return (Teece 2010). It consists of four elements: (i) customer value proposition (CVP), (ii) profit formula, (iii) key resources, and (iv) key processes (Johnson, Christensen, and Kagermann 2008).

- i) **Customer Value Proposition (CVP)** – finding the best solution to current problems and creating value for the customers.
- ii) **Profit formula** – creating value for the company itself while providing value to customers.
- iii) **Key resources** – delivering value to the customers by the use of assets like people, technology, products, equipment, etc.
- iv) **Key processes** – operational and managerial processes like training, planning, sales, service, rules, norms, etc. which help in continuous delivery of value to the customers (Johnson, Christensen, and Kagermann 2008).

However, according to Osterwalder and Pigneur (2010), there are nine building blocks of a business model (see Figure 2-11).

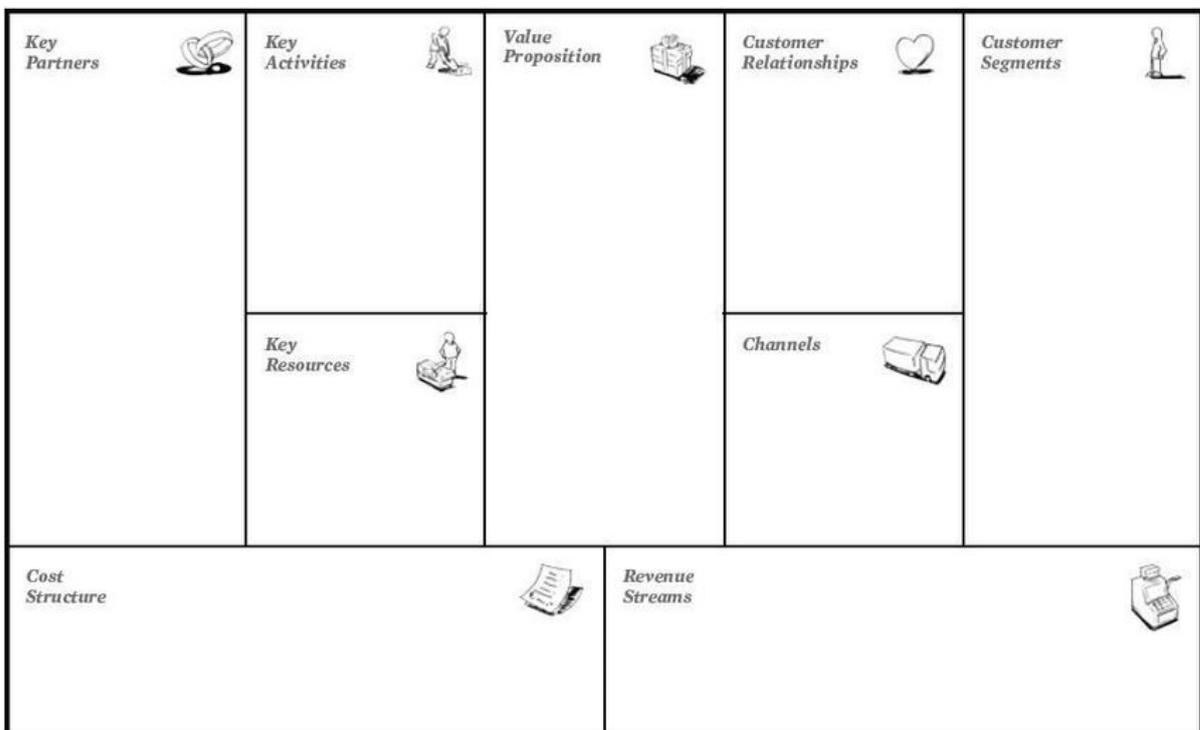


Figure 2-11 Business Canvas Model

Source: (Osterwalder and Pigneur 2010, Umihanic Cosickic 2014)

- i) **Customer segments** – different customer segments, thus, mass market, niche market, segmented, diversified, or multi-sided platforms and choosing which ones to serve.
- ii) **Value propositions** – bundles of products and services beneficial for a specific customer segment, such as price, speed of service, design, customer experience, newness, performance, customization, brand, cost reduction, risk reduction, accessibility and convenience, etc.
- iii) **Channels** – ways through a company communicates and delivers value to its customers, for example, owned channels like in-house sales force, website or partner channels like wholesale distribution, retail and partner-owned websites.
- iv) **Customer relationships** – a company can have different types of relationships with its customers like personal assistance, dedicated personal assistance, self-service, automated services, communities and co-creation
- v) **Revenue streams** – different pricing mechanisms for generating cash from each customer segment like asset sale, usage fee, subscription fee, leasing fee, licensing, brokerage fee, advertising, among others.
- vi) **Key resources** – important assets to create value i.e. physical (buildings, vehicles, machines), intellectual (brands, patents, partnerships, customer databases), human and financial resources
- vii) **Key activities** - important business actions, such as, production, problem solving, networking and platform management.
- viii) **Key partnerships** – network of suppliers and partners, joint ventures which helps in risk reduction and secure supply of resources
- ix) **Cost structure** – costs incurred under the business model, i.e. fixed (salaries, rents, manufacturing facilities) and variable (campaign advertisements, festival decorations) (Osterwalder and Pigneur 2010).

2.5.3 The Backcasting and Eco-design for CE (BECE) framework

Backcasting is an approach to future studies involving the development of normative scenarios aimed at exploring the feasibility and implications of achieving certain desired outcomes (Robinson 2003). It is generally applicable when: (i) the nature of problem is complex, (ii) need for major societal or technological change, (iii) dominant trends are part of the problem, (iv) the problem is a matter of externalities and (v) long time horizon (Dreborg 1996).

While, eco design is an approach to improving product design to reduce their environmental impacts throughout the product life (Schischke, Hagelüken, and Steffenhagen 2005). There are environmental, economic and social benefits and opportunities of eco-design.

- i. **Environmental benefits** – It helps to reduce material and energy consumption, minimize manufacturing wastages, optimize production and increase efficiency (Schischke, Hagelüken, and Steffenhagen 2005) (Sanyé-Mengual et al. 2014).
- ii. **Economic benefits** – It helps to reduce fixed and variable costs by improving the production efficiency, giving competitive advantage to the companies and improving their product and brand image (Sanyé-Mengual et al. 2014).
- iii. **Social benefits** – Communicating and marketing about environmental sustainability can help to increase awareness of consumers and motivate employees (Sanyé-Mengual et al. 2014, Schischke, Hagelüken, and Steffenhagen 2005).

A holistic framework has been developed by combining elements like guidance, information, inspiration, education, visual, non-scientific language and dynamic access (Lofthouse 2006). Whereas, three tools of eco-design have been identified by Knight and Jenkins (2009); (i) checklists, (ii) guidelines and (iii) material, energy and toxicity (MET) matrix. However, there are challenges of eco-design identified by Karlsson and Luttrupp (2006):

- Design has to work in concert with market priorities,
- Life-style preferences and immaterial aspects are fundamental,
- Eco -efficiency is not sufficient; we have to aim for Eco -effective products,
- The present scope mainly focuses on reduction of environmental loads,
- **WHY** we do this is more basic than **HOW** (this implies that we should have clear vision and set priorities as to why we want to adopt eco-design. Only then can we think of how to design eco-friendly products/services).

Figure 2-12 outlines the methodologies of both Backcasting and eco-design approaches.

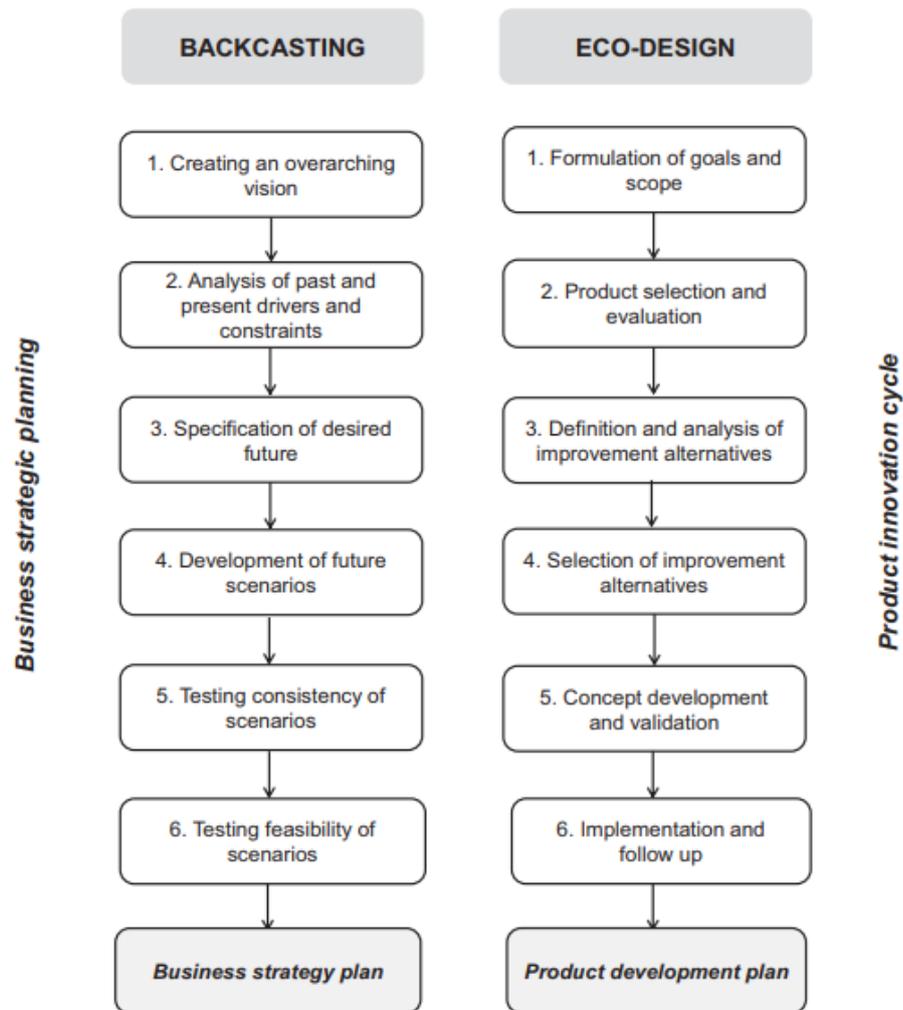


Figure 2-12 Outline of Backcasting and Eco-design methodologies
Source: (Mendoza et al. 2017)

Backcasting is used for strategic planning with six steps (Mendoza et al. 2017).

- Step 1 - Defining an overarching vision to determine future strategic objectives
- Step 2- Identification of the past and present drivers and barriers to implementing the defined vision
- Step 3- Adding detail to the vision by characterizing other relevant aspects
- Step 4- Building and discussing future scenarios to help achieve the vision
- Step 5 - Testing the consistency of the scenarios
- Step 6 - Testing the feasibility of the scenarios

Equally, eco-design methodology also includes six steps (Mendoza et al. 2017).

- Step 1 - Defining a set of goals, considering drivers and constraints
- Step 2- Selecting a product category to fulfill the defined goals

Step 3- Building an eco-brief to guide eco-design strategies and analyze their technical and socioeconomic feasibility for potential implementation

Step 4- Selecting the most promising solutions

Step 5 - Developing the concept and environmental validation of the eco-product

Step 6- Developing the production and marketing plans

Both these methodologies have a range of complementary features that lend themselves for a symbiotic relationship and can help businesses in implementing CE solutions (Mendoza et al. 2017). Figure 2-13 shows a framework for CE by combining these methodologies.

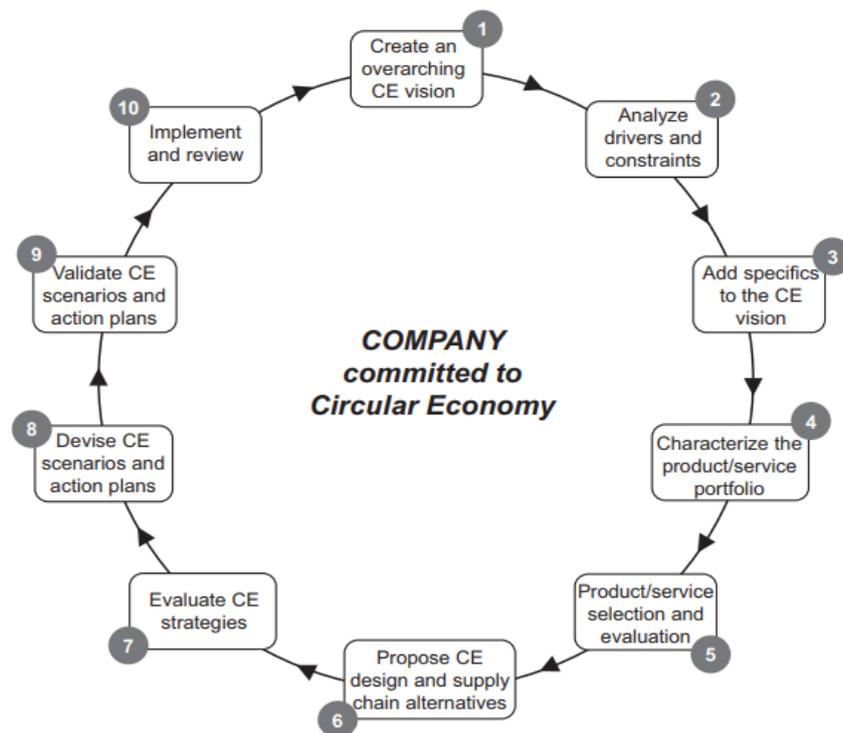


Figure 2-13 The BECE framework
Source: (Mendoza et al. 2017)

This framework consists of ten steps, as a result of combination between backcasting and eco-design steps. First of all, a CE vision is formulated in steps 1 to 3 by applying backcasting. The vision is analyzed and strategies are generated by applying eco-design in steps 4 to 7. Finally, in steps 8 to 10, the scenarios and action plans are defined, validated and implemented. (Mendoza et al. 2017).

In the subsequent Chapter, the methodology employed by the present study is presented.

Chapter 3

Methodology

3.1 Chapter Introduction

This Chapter presents the methodology employed by the present study. The philosophical position this study subscribes to is discussed. Further, the theoretical considerations underlying the selection of each case, as well as how the data was collected and analyzed will be explained. The quality criteria for qualitative research will be described as well as how these criteria are adhered to throughout the research process. Figure 3-1 below based on Saunders' Research Onion, summarizes the choices made for this study.

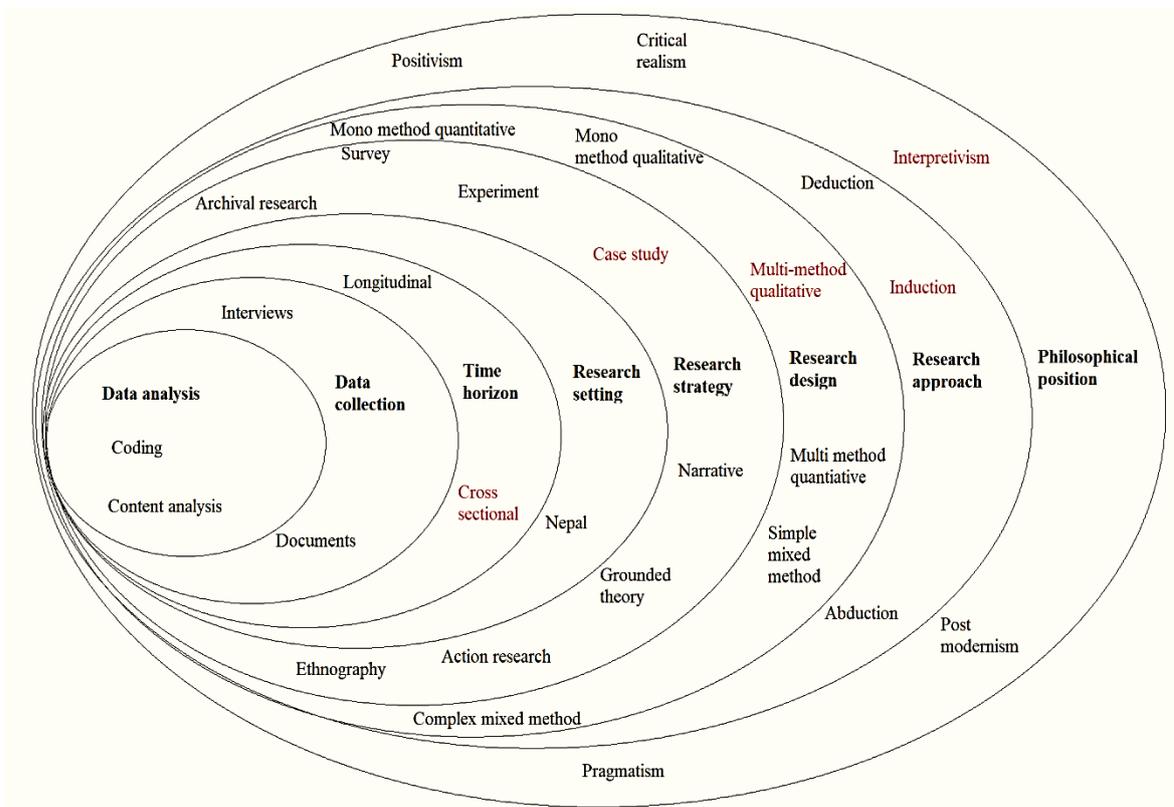


Figure 3-1 Research onion

Source: Adapted from (Saunders, Lewis, and Thornhill 2016, 2019)

3.2 Philosophical position

The researcher's beliefs and assumptions regarding the world and the nature of things done play a vital role in determining the strategies and methods for collecting and analyzing data (Saunders, Lewis, and Thornhill 2016, 2019). It is thus, important to spend time reflecting on one's own beliefs and assumptions to distinguish whether they lean towards the three

types of assumptions, that is, ontology, epistemology or axiology (Saunders, Lewis, and Thornhill 2016, 2019). According to Saunders, Lewis, and Thornhill (2019), ontology means the assumptions regarding the nature of reality which determines how we see the world of business and management and what do we need to find out. On the other hand, epistemology refers to the assumptions regarding knowledge, i.e. what is acceptable, valid and legitimate (Saunders, Lewis, and Thornhill 2019). Lastly, axiology refers to the roles of our values and ethics and that of our participants, especially where we need to give explanation to for choosing one topic over the other (Saunders, Lewis, and Thornhill 2016).

Following Saunders, Lewis, and Thornhill (2016), there are five management philosophies and these include:

- i. **Positivism** focuses strictly on scientific empiricist method designed to yield pure data and facts. This involves using existing theory to develop hypotheses and remaining neutral from the research and data so that the findings of the research are not influenced by the researcher's biasness (Saunders, Lewis, and Thornhill 2016).
- ii. **Critical realism** emphasizes on explaining what we see and experience, in terms of the underlying structures of reality that shape the observable events. Critical realists see reality as external and independent, but not directly accessible through our observation and knowledge of it (Saunders, Lewis, and Thornhill 2016).
- iii. **Interpretivism** argues that humans are different from physical phenomena. It is difficult to apply same laws to and expect the same result because different people of different cultural backgrounds, under different circumstances and at different times make different meanings, and so create and experience different social realities. (Saunders, Lewis, and Thornhill 2016).
- iv. **Postmodernism** focuses on the role of language and of power relations, seeking to question accepted ways of thinking and give voice to alternative marginalized views. Since there is no order to the social world beyond that which we give to it through language, there is no abstract way of determining the 'right' or the 'true' way to describe the world. It refers to challenging the organizational concepts and theories to demonstrate what perspectives and realities they exclude, whose interests they serve and being open to the deconstruction of any forms of data – texts, images, conversations, voices and numbers (Saunders, Lewis, and Thornhill 2016).
- v. **Pragmatism** aims to reconcile both objectivism and subjectivism, facts, values, accurate and rigorous knowledge, and different contextualized experiences. It starts

with identifying a problem and aiming to find solutions to it. Thus, the research problem and the research questions will determine the research design and strategies. The research question would be likely to incorporate the pragmatist emphasis of practical outcomes. There can be multiple realities and no single point of view can give the entire picture since there are different ways of interpreting the world and carrying out the research (Saunders, Lewis, and Thornhill 2016).

This research has taken the position of interpretivist, where the companies' perspectives are studied in order to find out the similarities or differences in their opinions or meanings. Interpretivists believe that same methods can yield different results depending on the circumstances and backgrounds. In this study, an interpretivist stance is taken because this research intends to find out whether the application of the BECE framework will provide similar results as the literature (Mendoza et al. 2017, Heyes et al. 2018, Mendoza, Gallego-Schmid, and Azapagic 2019).

3.3 Approach to theory development

There are three approaches to theory development: (i) deduction (ii) induction and (iii) abduction (Saunders, Lewis, and Thornhill 2016).

- i. **Deduction** refers to an approach where theories predict an outcome and are tested by experiments (Miessler 2020). It searches to explain causal relationships between concepts and variables by developing a number of hypotheses (Saunders, Lewis, and Thornhill 2016).
- ii. **Induction** refers to using available data to come up with a theory, rather than testing already existing theory. The observations lead to generalizations for how things work (Miessler 2020). Due to its connection to humanities and its emphasis on the importance of subjective interpretations, the inductive approach is most likely to be informed by the interpretivist philosophy (Saunders, Lewis, and Thornhill 2016).
- iii. **Abduction** refers to an approach which moves back and forth, in effect combining deduction and induction (Saunders, Lewis, and Thornhill 2016).

This research's approach is induction because it fits well with the philosophical position of interpretivism. At the same time, it allows generalization based on conducted interviews and document analysis. As mentioned by Saunders, Lewis, and Thornhill (2016), the inductive

approach helps to formulate a theory or a conceptual framework based on the result of the analysis.

3.4 Methodological choice / Research design

Formulating a research design is about how we plan to answer the research questions (Saunders, Lewis, and Thornhill 2016). There are three methodological choices: (i) quantitative – using numeric data, (ii) qualitative – using non-numeric data, and (iii) mixed-using both (Saunders, Lewis, and Thornhill 2016). Although the initial methodological choice for this thesis was mixed method, there were difficulties in collecting quantitative data, for instance using a questionnaire, due to restrictions imposed by the state on social distance - as a result of preventive measures to the pandemic COVID 19.

As per Saunders, Lewis, and Thornhill (2016), a qualitative study is usually interpretive and starts with inductive approach. It helps to study the participants' meanings and relationships between them. It focuses on understanding, explaining, exploring, discovering and clarifying "situations, feelings, perceptions, attitudes, values, beliefs and experiences of a group of people" (Kumar 2010, p.104). Since this study has taken an interpretivist stance and has chosen an inductive approach, I agree with the authors and have chosen a qualitative method for this study.

3.4.1 Research strategy

There are different strategies of conducting qualitative research, such as archival research, case study, ethnography research, action research, grounded theory and narrative inquiry (Saunders, Lewis, and Thornhill 2016). Among them, the case study strategy is chosen for this thesis because it conducts in-depth and within the real-world context investigation of a contemporary phenomenon (the case) (Yin 2018). The case may refer to a person, a group, an organization, a change process, an event or any other subjects (Saunders, Lewis, and Thornhill 2016). It is appropriate when "how" and "why" questions are asked about a contemporary set of events over which a researcher has little or no control (Yin 2018).

Case study research can be designed as single or multiple depending on the issue. For this thesis, the multiple-case study is selected because it is appropriate for real life events. According to Yin (2018), a multiple-case study should be considered as replication of the

findings by carrying out multiple experiments, which may produce same or different results. It means that the researcher carries out multiple experiments based on a pre-developed notion to see if the findings can be duplicated. Whether the study results in similar findings or different, it will help in strengthening the original finding. Thus, the evidence from multiple-case study is deemed as more compelling than a single case study (Yin 2018). Thus, a multiple-case study is chosen to see if the study can produce similar findings or new ones.

Figure 3-2 describes a typical multiple case study process. The process is based on the description from (Yin 2018) and it depicts the procedure underlying this research process.

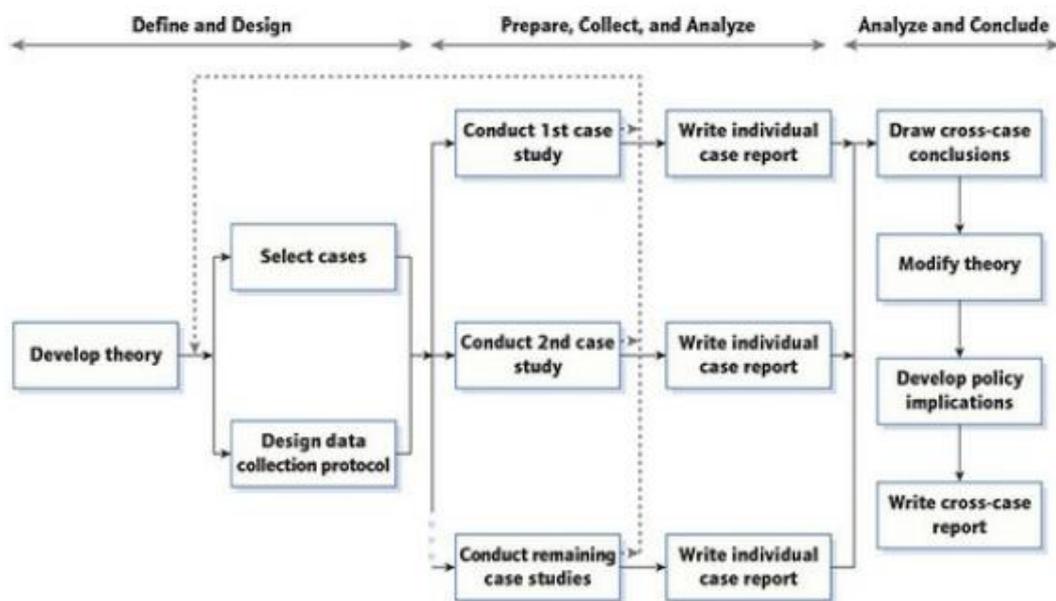


Figure 3-2 A multiple case study procedure
Source: COSMOS Corporation (Yin 2018).

As shown in Figure 3-2, theories regarding the CE and potential in tourism are presented at first. Then, the companies were selected to participate in this study and appropriate data collection methods were chosen which are presented in sub-section 3.5. Both cases were conducted simultaneously, and individual reports were maintained. The findings are explained in Chapter 4 – Findings and analysis.

3.4.2 Case selection

A critical aspect of case study research is the case selection. In general, case selection happens based on theoretical considerations rather than selecting cases randomly. According

to Flick (2013), qualitative studies are restricted to 2-4 cases, allowing the researcher to examine the context of each case comprehensively. This study aims to examine the similarities or differences, if any, in the circular practices, drivers and barriers among the case companies and identify which CEBM would be suitable for implementation. Hence, the unit of analysis for this study is the tourism companies.

The unit of analysis is chosen through sampling. It is important to select a sample when collecting data from the whole population is difficult or impossible. Sampling is very useful when we have time and money constraints. The population in this study is companies providing services and target population is those in tourism sector. There are two types of sampling (see Figure 3-3): (i) probability sampling and (ii) non-probability sampling (Saunders, Lewis, and Thornhill 2016).

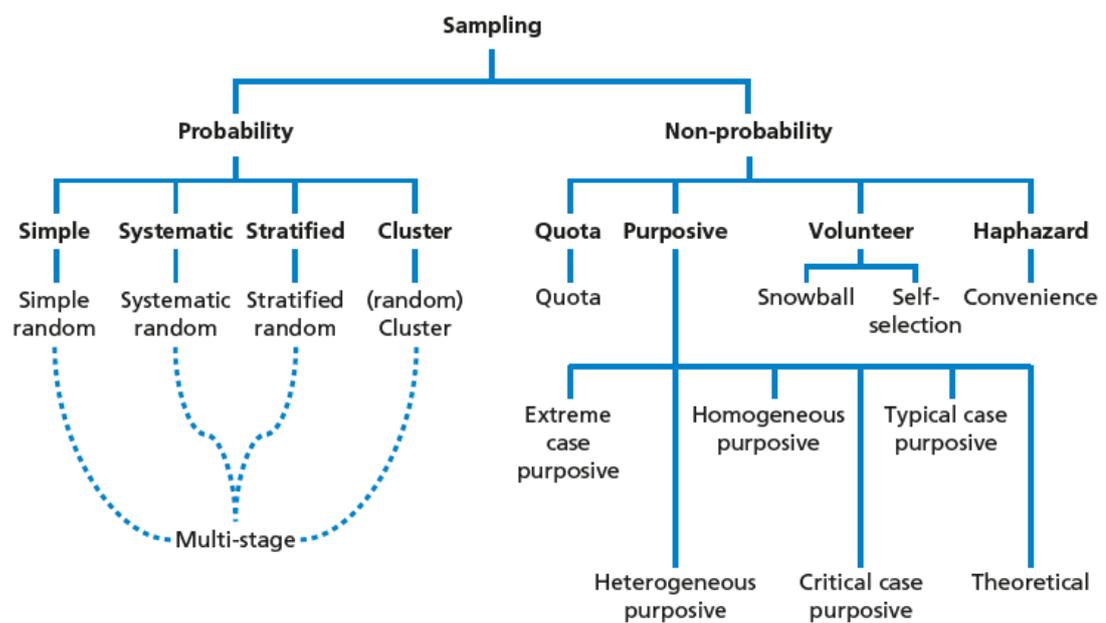


Figure 3-3 Sampling techniques
Source: (Saunders, Lewis, and Thornhill 2016)

Probability sampling techniques can be used especially for carrying out survey strategies whereas non- probability sampling techniques are useful for conducting case studies (Saunders, Lewis, and Thornhill 2016). The sampling technique used in this thesis is convenience sampling. It is a common method of sampling chosen on the basis of convenience of the researcher (Acharya et al. 2013). Both companies are chosen due to ease of access to information.

3.4.3 Case description

Two companies have been chosen for this study i.e. a DMO and a lodge. In this section, a brief introduction of both companies are presented below.

A. International Trekkers

International Trekkers (InTrek) is a DMO situated in Dhumbarahi, Nepal. It was founded around three decades ago when adventure tourism was just starting to flourish in Nepal. It is one of the pioneer companies which started to provide trekking services in the Himalayan regions with own fleet of luxurious transport, skilled guides, crews, porters and back-office personnel. The company provides trekking facilities within Nepal, Tibet and Bhutan. (Trekking Agencies' Association of Nepal 2020).

B. Everest Lodges

Everest Summit Lodges is the subsidiary company of InTrek, established in 2002. It has five unique sites i.e. Lukla, Pangboche, Monjo, Mende and Tashinga, which are located along the Everest Base Camp trail to provide food and accommodation services to tourists in Nepal. The lodges exist to preserve Sherpa architecture, protect environment and provide comforting stay to the guests (Everest Lodges 2020a). Table 3-1 lists some of the eco-social initiatives by Everest Lodges.

Table 3-1 Eco-social initiatives of Everest Lodges

Environmental	<ul style="list-style-type: none">▪ Local sourcing of organic vegetables▪ Offering guests optional daily towels and linens reuse service▪ Non-biodegradable waste brought back to Kathmandu▪ Water Conservation: Gas or Solar powered hot water for showers (no firewood)▪ Euro guard water filter for drinking▪ No packaged drinking water sold at any of the Everest Lodges▪ Photo voltaic panels for lighting using energy efficient light bulbs▪ Green horticultural servicing with green house▪ Offering guestrooms with windows that open or are part of a fresh-air exchange system
Social	<ul style="list-style-type: none">▪ High Altitude Pressure bags in all lodges for Emergency▪ Hiring local people, training guides and service staff▪ Providing funds and other support to Monjo school, Manmohan Memorial Community Hospital and Seti Devi Drinking Water Supply Authority

Source: (Everest Lodges 2020b)

Figure 3-4 shows the locations of the lodges en route to Mt. Everest. It can be seen that they are located in high altitude and in rugged lands. It is difficult to construct and maintain roads in mountain regions. So, air transport is the viable solution to transport goods and people but, it is costly.



Figure 3-4 Route to Mt. Everest and locations of the lodges
Source: (Everest Lodges 2020c)

3.4.4 Research setting

The research adopted natural setting as mentioned by Saunders, Lewis, and Thornhill (2016), to establish trust and participation. The geographical setting for this research was Nepal. Nepal is a landlocked country in Asia, located between India and China. Its total area is 147,181 square kilometer (Rose et al. 2020) with existing population of 29,954,369 (Central Bureau of Statistics 2018). Nepal is a country filled with rich cultures, dramatic scenery and famous hospitality – making it the backbone of the Nepalese economy (Ministry of Foreign Affairs 2020). Major tourism activities in Nepal are mountain climbing, trekking, bird watching, rafting/kayaking, hot air ballooning, bungee jumping, paragliding, ultralight aircraft, mountain biking, jungle safari, mountain flight, rock climbing, etc. Due to its diverse population, it is also an ideal destination for cultural and religious enthusiasts with various religious sites and cultural heritages (Ministry of Foreign Affairs 2020).

Table 3-2 presents annual growth rate of Gross Domestic Product (GDP) in Nepal by economic activities. From the table, it is evident that the service sector is vital to the GDP growth in Nepal. Especially, when we consider the contribution of tourism in 2019, hotel and restaurants contributed to 7.33 percentage of growth in GDP.

Table 3-2 Annual growth rate of GDP in Nepal by Economic Activities (at constant prices)

Industrial Classification		2072/73	2073/74	2074/75	2075/76R
		2015/16	2016/17	2017/18	2018/19
A	Agriculture and forestry	0.01	5.14	2.72	5.05
B	Fishing	11.76	8.02	7.42	5.60
C	Mining and quarrying	-2.79	13.74	8.88	8.91
D	Manufacturing	-8.00	9.70	9.17	6.82
E	Electricity gas and water	-7.59	20.47	9.64	9.15
F	Construction	-4.36	12.43	10.02	8.05
G	Wholesale and retail trade	-2.16	11.89	12.54	11.06
H	Hotels and restaurants	-9.68	7.33	9.77	7.33
I	Transport, storage and communications	2.02	6.47	4.65	5.90
J	Financial intermediation	8.55	9.09	6.38	6.18
K	Real estate, renting and business activities	3.72	5.67	5.24	6.12
L	Public administration and defence	2.52	9.06	5.07	5.54
M	Education	7.33	7.39	5.02	5.11
N	Health and social work	3.25	7.34	6.33	6.75
O	Other community, social and personal service activities	5.55	5.58	5.54	5.73
	Agriculture, Forestry and Fishing	0.23	5.20	2.82	5.06
	Non-Agriculture	0.38	9.00	7.74	7.37
	<i>Total GVA including FISIM</i>	0.33	7.74	6.15	6.65
	Financial Intermediation Services Indirectly Measured (FISIM)	3.27	7.67	1.57	4.25
	<i>Gross Domestic Product (GDP) at basic prices</i>	0.20	7.74	6.35	6.75
	Taxes less subsidies on products	4.40	12.80	9.89	9.14
	Gross Domestic Product (GDP)	0.59	8.22	6.70	6.99

*R= Revised, P = Preliminary

Source: (Central Bureau of Statistics 2020)

3.4.5 Time horizon

Depending on the time horizon of the studies, researches can either be cross-sectional or longitudinal. A longitudinal study needs a lot of time - even months or years to collect data whereas, a cross-sectional study is the snapshot of a particular phenomenon at a particular time (Saunders, Lewis, and Thornhill 2016). Due to the time constraints for this master thesis, a longitudinal study is not possible. So, a cross-sectional study was chosen. In this

type of study, the outcomes and exposures in the study participants are measured at the same time by the researcher (Setia 2016). Thus, the information collected about the case companies under this study represents what is going on at only one point in time (Olsen and St George 2004) i.e. during the research conduct. Thus, it is most suitable for finding out prevalence of a phenomenon, situation, problem, attitude or issue (Kumar 2010, p.107). Additionally, a cross-sectional study is both time and cost efficient (Levin 2006, Setia 2016).

3.5 Data collection

According to Flick (2018), qualitative data collection is the process of selecting and producing linguistic material for understanding and analyzing phenomena to make meaning. There are two approaches to collect information i.e. the researcher collects the information himself or extract already available information. Thus, there are two types of data: (i) primary and (ii) secondary (Kumar 2010) (see Figure 3-5).

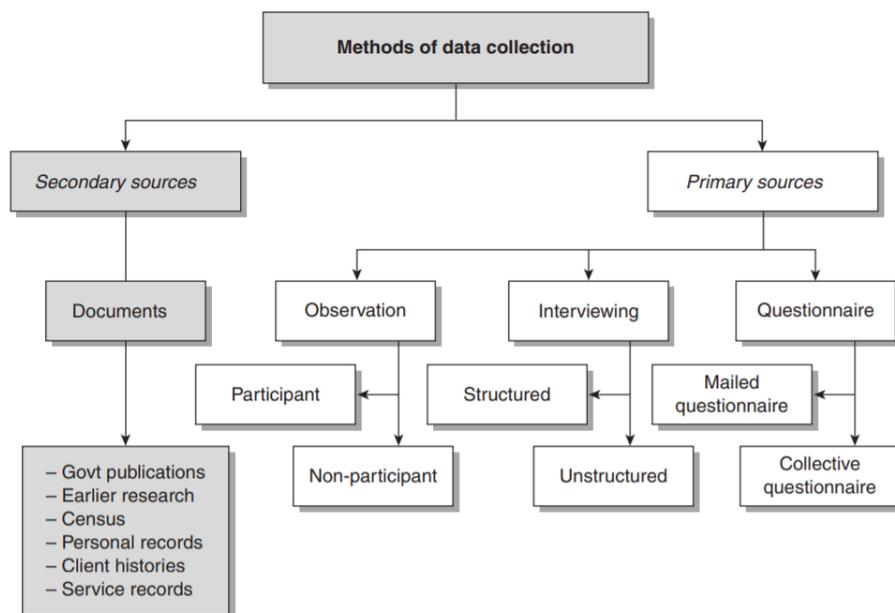


Figure 3-5 Methods of data collection

Source: (Kumar 2010)

Figure 3-5 shows different methods of collecting primary and secondary data. Primary data are new information collected by the researcher himself using observation, interviews or questionnaire. On the other hand, secondary data are already available information in the form of documents, such as government publications, earlier research, census, etc. (Kumar 2010). While primary data are more reliable and vital to the research, secondary data are less expensive and time consuming than primary data (Saunders, Lewis, and Thornhill 2016).

Primary data for this study were the interviews conducted using the BECE framework. Whereas, journal articles, books, reports, official websites, government websites and so on, were the secondary data. The data were collected through interviews and documents, which are explained further in sub-sections 3.5.1 and 3.5.2.

3.5.1 Interviews

Kumar (2010) defines an interview as any direct or indirect interaction between a person to another with known purpose. Interviews are targeted to focus directly on case study topics and provide explanations as well as personal views (Yin 2018, p. 179). As per Gill et al. (2008), it is most appropriate when there is little knowledge about the research topic and detailed information is required from the study participants. There are three types of interviews: structured, semi-structured and unstructured (Gill et al. 2008). For this study, companies were informed at first (see Appendix A) and structured interviews were used to ask predetermined questions with no variation as mentioned by Gill et al. (2008). Since the study applies the BECE framework in the case companies, questions related to only this method are asked, which are enough to address the research questions (see Appendix B).

Although the initial plan was to record interviews in a voice recording device, recording interviews is advised against when an interviewee refuses or there is no specific plan for transcribing since it is time consuming (Yin 2018). Thus, the interviews were not recorded in any audio format. Instead, they were recorded in written format, verified by the participants.

3.5.2 Documents

According to Yin (2018), documents are easily available and can be reviewed repeatedly. Since one of the purposes of this thesis is to examine the usability of the BECE framework, the application of this framework provided useful documents with primary data i.e. the ReSOLVE checklist and Business Canvas Model of each case companies (see Appendix C). Secondary documents like journal articles and reports were used in building up the literature and analyzing the findings. Search terms used to find relevant literature are “circular economy in tourism”, “circular tourism”, “sustainability in tourism and hospitality” etc. The following were the online databases used; Google scholar and ProQuest.

3.6 Data Analysis

According to Flick (2013, p. 5), a qualitative data analysis is defined as

“the classification and interpretation of linguistic (or visual) material to make statements about implicit and explicit dimensions and structures of meaning-making in the material and what is represented in it. Meaning -making can refer to subjective or social meanings. Qualitative data analysis also is applied to discover and describe issues in the field or structures and processes in routines and practices. Often, qualitative data analysis combines approaches of a rough analysis of the material (overviews, condensation, summaries) with approaches of a detailed analysis (elaboration of categories, hermeneutic interpretations or identified structures). The final aim is often to arrive at generalizable statements by comparing various materials or various texts or several cases.” Flick (2013, p. 5)

Qualitative data analysis is done through three activities (Miles, Huberman, and Saldanna 2014):

- i. **Data condensation** – It refers to selecting, focusing, simplifying, abstracting and/or transforming the data that appear in the full body of written-up field notes, interview transcripts, documents and other empirical materials. For example, writing summaries, coding, developing themes, generating categories and writing analytic memos (Miles, Huberman, and Saldanna 2014).
- ii. **Data display** – It refers to the organized and compressed assembly of information that allows to draw conclusion for example, different types of matrices, graphs, charts and networks (Miles, Huberman, and Saldanna 2014).
- iii. **Drawing and verifying conclusions** – It refers to interpreting what things mean by noting patterns, explanations, causal flows and propositions (Miles, Huberman, and Saldanna 2014).

This study follows this procedure of analysis. Relevant information was condensed, displayed and concluded. It is also possible to analyze by comparison. According to Flick (2013), all scientific research is in some way comparative and qualitative comparison aims to understand certain aspects of society in its socio-cultural specific context, based on purposefully selected cases. The methods of comparative analysis depend on the research problem. Among them, qualitative content analysis is used in this thesis. This method helps

to focus on selected aspects of meaning and reduce the amount of material (Flick 2013). The materials from the implementation of the BECE framework were analyzed to answer the research questions.

3.7 Application of BECE framework

BECE framework was applied to the lodge and the travel agency. The nature of this research was participatory thus, the application of BECE framework was carried out through the interaction between the researcher and the managing directors of the two companies. The process is carried out in same order as it was done in an ICT firm by (Heyes et al. 2018) as shown in Figures 3-6 and 3-7 below.

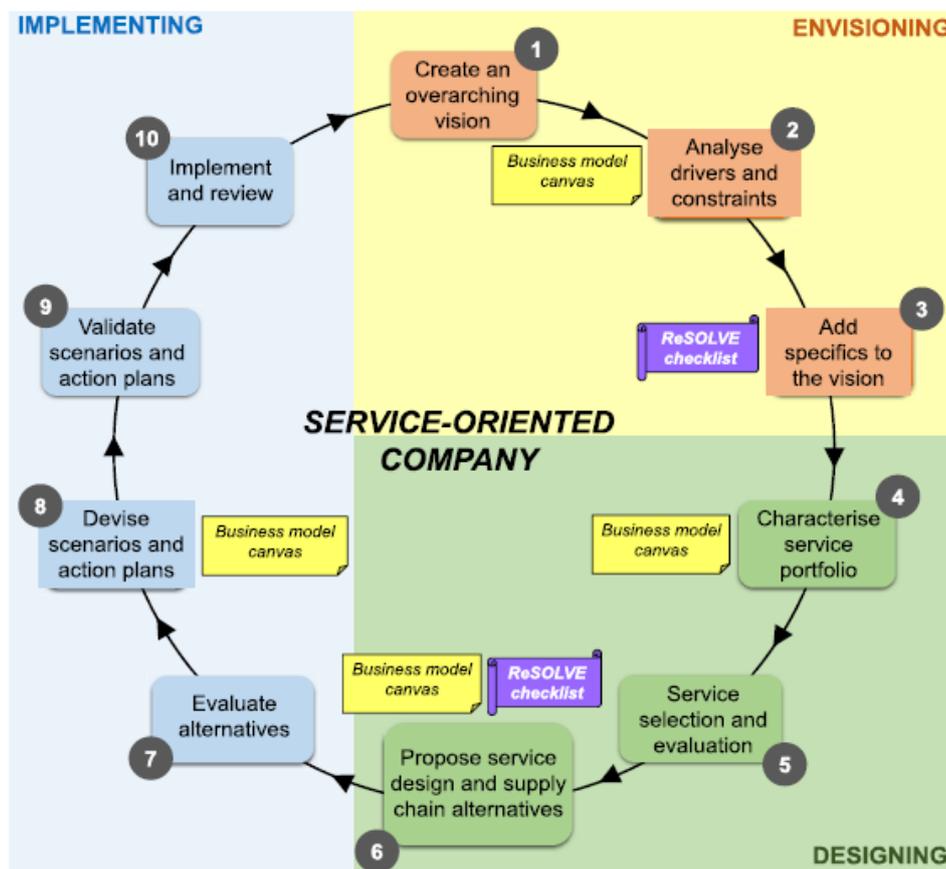


Figure 3-6 BECE framework for service-oriented company, including Business Canvas Model and ReSOLVE checklist

Source: (Heyes et al. 2018).

Through initial conversation with the companies' contact persons, it became clear that the companies were concerned about their environmental impacts and they expressed their interest in collaborating with this study to find out new sustainable solutions for their business. Although they did not know about the term "circular economy", they have been practicing some strategies like organic sourcing. Before carrying out this framework, it was

important to inform them about CE. Thus, I prepared some materials to make them aware about CE, its principles, strategies and business models so that they are acquainted with this knowledge. CE is a vast concept and it is certainly not possible to teach everything within a short time. So, this should be understood as an attempt to briefly introduce the topic. Simultaneously, information about the company was collected through the company website to get to know the business and its activities.

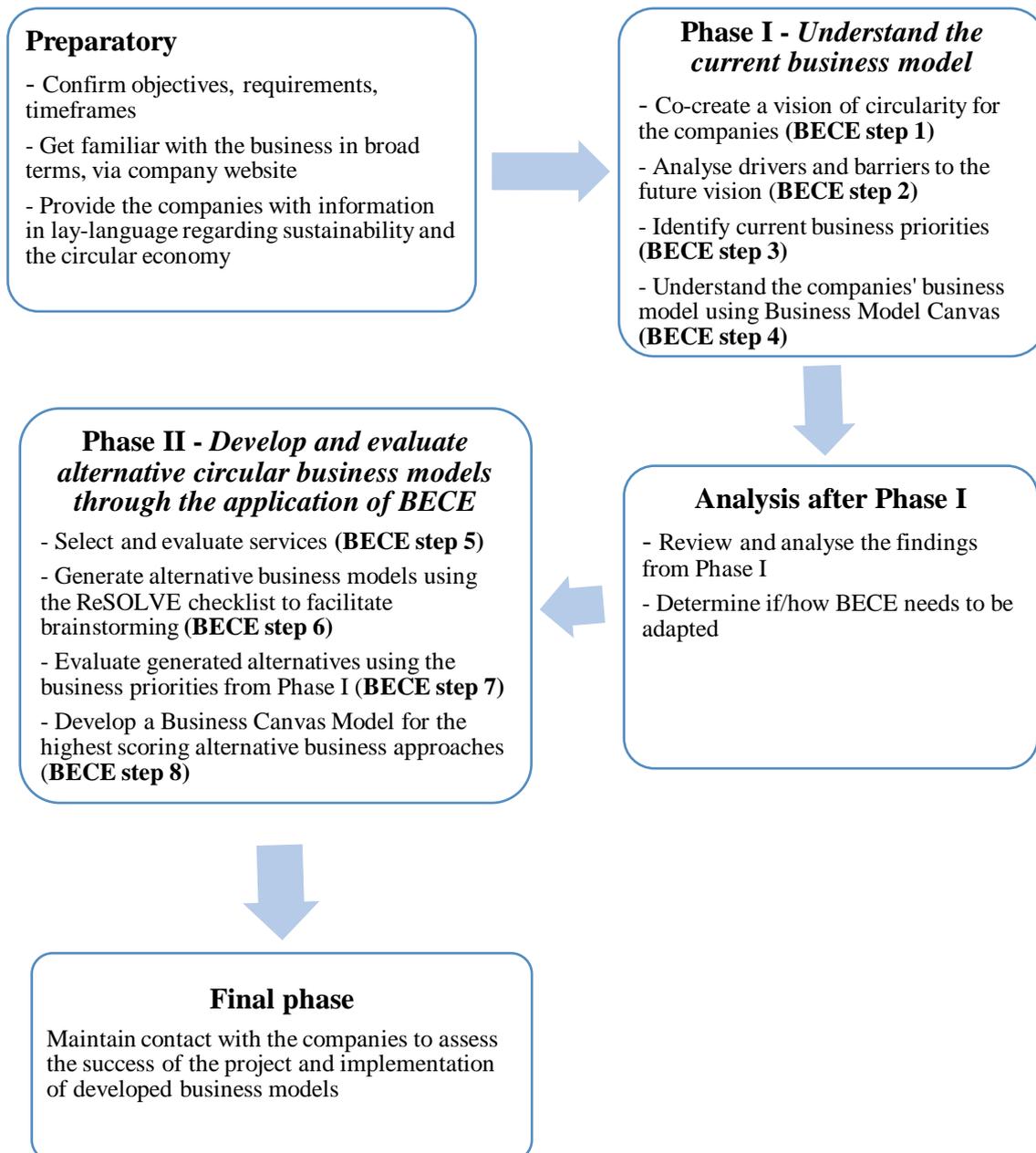


Figure 3-7 The application of BECE with the case companies in two phases
Source: (Heyes et al. 2018)

This framework was applied in two phases, as illustrated in Figure 3-7. In the first phase of the study, steps 1-4 were applied. The first step was to co-create a circular vision for the business. So, companies were asked “What do you think your company might look like in a sustainable low-carbon and zero-waste society?” (Heyes et al. 2018). This was to help them create a broad vision and start thinking about CE. Further, they were asked to identify the drivers and constraints to this vision in step 2. This was followed up by identifying the key business priorities in step 3 and ranking three of them as per their importance. This was done so as to help later in the evaluation of the circular strategies. Finally, a business canvas model sample template was provided for their completion, which will help us to understand how value is created, captured and delivered in the business as done by Heyes et al. (2018).

In the second phase, steps 5-8 were applied. After analyzing the current business model, the selected services were evaluated in step 5. Then, in step 6, the ReSOLVE checklist was used to identify possible CE actions. Each of the ReSOLVE strategies were introduced with examples to help with the brainstorming. The strategies generated this way were evaluated in step 7, according to the business priorities identified in step 3.

For the evaluation matrix, business priorities identified in Phase I were ranked on a scale of 1(not very important) to 5(extremely important) and the ReSOLVE strategies were rated low (scoring 1), medium (scoring 2) or high (scoring 3). “The ratings were multiplied by the weight of that criterion to derive a total score per criterion” (Heyes et al. 2018). The final evaluation score was the summation of total scores across all criteria. It resulted in three top strategies for the DMO and two top strategies for the lodge. However, one strategy was applicable for both companies. So, keeping in mind, the time restriction of this thesis and the consent of both companies, the common strategy was turned into a business canvas model in step 8. The results of this process can be found in Chapter 4 – Findings and Analysis.

Next, findings and analysis of this study are presented.

Chapter 4

Findings and analysis

4.1 Chapter Introduction

This Chapter presents the results of the BECE framework with further explanations. The aim of this Chapter is to answer the research questions developed in Chapter 1. Section 4.2 includes steps 1 and 3 of the BECE framework, that is, creating a CE vision and identifying the current business priorities. Similarly, section 4.3 includes step 2 of the BECE framework, thus, analyzing the drivers and barriers. Step 4 – understanding the existing business models is presented in section 4.4. Whereas, steps 5, 6 and 7, selecting and evaluating the strategies are included in section 4.5. Finally, the Chapter ends with summarizing the findings in section 4.6.

4.2 CE vision

In step 1 of the BECE framework, the companies tried to create a new circular vision.

Question 1: What do you want to look like in a sustainable, low-carbon and zero-waste society?

“We see ourselves focusing on local cultures, preservation of heritage sites, wilderness adventures, volunteering, personal growth and learning new ways to live and enhance our vulnerable planet.” – **International Trekkers.**

“We want to offset all carbon footprints of our guests by planting trees, not using single-use plastics, learning waste management, improving our solar panel water heating capacities, and getting proper certification from international companies recognizing us as an eco-conscious lodge (for marketing purposes)” – **Everest Lodges.**

From the above responses, it can be understood that both companies are aware of the negative impacts on the environment due to tourism activities and want to take actions against this. Further, they were asked to identify their key business priorities and rank them in order according to their importance (see Table 4-1).

Table 4-1 Key business priorities

	Int'l Trekkers	Everest Lodges
Key business priorities	<ul style="list-style-type: none"> ▪ Quality service ▪ Customer satisfaction ▪ Revenue growth 	<ul style="list-style-type: none"> ▪ Customer satisfaction ▪ Quality service ▪ Revenue growth

Source: Own compilation

Table 4-1 shows that both companies have similar priorities in their top 3 list. It is to be understood that the new business model should not compromise these priorities.

4.3 Drivers and barriers

Both companies were asked to identify drivers and constraints towards implementation of CEBMs (see Tables 4-2 and 4-3 for the results). This was the second step in the BECE framework (see Figure 3-7).

Question 2: What factors can help in achieving the CE vision?

“Awareness about the sustainable resource management are minimum in the mountain villages. Both the local people and the tourists traveling to the area have to participate in understanding the profitability of sustaining solid waste and leaving zero carbon footprints.” - *Cultural*

“Increased access to rural areas will increase tourist numbers and a high chance of damaging natural assets. A need to develop a coordinated strategy with all stakeholders, national and international organizations, and establishing an appropriate regulatory framework should be a priority.” - *Regulatory*

“We need to create incentives for the local businesses and communities to invest in energy efficiency and alternative energy sources, and a design for a zero-waste society. By promoting sustainable economy, the local communities must understand they gain higher rewards with creation of alternative livelihoods, heightened tourism activities, higher green growth outcomes, in which they play a major role toward the eco-tourism services.” - *Sectoral*

“Waste management reduces or eliminates the use of plastics and keep trekking trails rubbish free. Improved waste management can bring forth opportunities to new enterprises such as recycle products or manage waste, that support tourism services and help in reducing the cost for tourism business.” - *Financial*

– **International Trekkers**

“Local municipality co-operation” - **Cultural**

“Sponsorships from abroad in teaching us better waste management practices, providing equipment that is not readily available in Nepal” - **Sectoral**

“Government support and regular training provided by experts”- **Regulatory**

– **Everest Lodges**

Table 4-2 summarizes the drivers present in both companies.

Table 4-2 Categorization of drivers

Drivers	Int'l Trekkers	Everest Lodges
<i>Cultural</i>	- Local and tourists' involvements in sustainable resource management	- Local municipality co-operation
<i>Regulatory</i>	- Establishing a regulatory framework	- Government support
<i>Financial</i>	- Recycling products or managing waste can help in reducing cost	
<i>Sectoral</i>	- Collaboration with all stakeholders, national and international organizations - Creating incentives for the local businesses and communities to invest in energy efficiency and alternative energy sources	- Training regarding better waste management practices

Source: Own compilation

Thus, it can be seen that consumer awareness and local cooperation are the most important cultural drivers in both companies. Establishing regulatory framework and coordinating all stakeholders is equally important. Unlike the DMO, the lodge has to provide food and accommodation to the guests. So, it is clear that it requires training regarding better waste management practices. Whereas, for the DMO, it is more important to collaborate with national and international organizations and create incentives for local businesses.

Question 2: What factors can be obstacle in achieving this vision?

“At the moment, number of operators are promoting eco-(tourism) tours only as a marketing gimmick and do not have an idea of the underlying responsibilities and mechanisms. Used only as a convenient marketing tool, the stunt can have an adverse

effect with mass tourism and environmental degradation, and simply be an increased threat.” - **Cultural**

“With the lack of proper roads and infrastructures, villages still rely on the forest for their daily source of firewood and construction materials.” - **Cultural**

In the context of an increasing industry, the key questions are how to control, monitor and assess the conducts and ethics of the operators and facilities. An appropriate balance or a regulatory framework must be developed, to support livelihoods and at the same time preserve the value of the natural, cultural and heritage assets for the future.” - **Regulatory**

– **International Trekkers**

“Waste management” - **Sectoral**

“Importing water tanks (so guests don’t use mineral water bottles), solar panels are all expensive and transport up to the mountains double the cost” - **Financial**

“Tree plantations require a lot of manpower and tourism industry in Nepal is lagging so some years other issues have more priority.” - **Cultural**

– **Everest Lodges**

Table 4-3 below summarizes the barriers present in both companies.

Table 4-3 Categorization of barriers

Barriers	Int’l Trekkers	Everest Lodges
<i>Cultural</i>	<ul style="list-style-type: none"> - Promoting eco-tourism is only used as a convenient marketing tool - Lack of awareness in the mountain villages 	<ul style="list-style-type: none"> - Lack of participation in tree plantation programs
<i>Regulatory</i>	<ul style="list-style-type: none"> - Lack of ways to control, monitor and assess the conducts and ethics of the operators and facilities 	
<i>Financial</i>		<ul style="list-style-type: none"> - Expensive solar panels - Expensive transportation charge to the mountains
<i>Sectoral</i>		<ul style="list-style-type: none"> - Improper waste management system

Source: Own compilation

Hence, it can be said that cultural barriers are present in both companies. Since eco-initiative programs like tree plantations require huge manpower, lack of participation from locals can discourage future initiatives. As mentioned by Kirchherr et al. (2018), lack of awareness and participation are the major cultural barriers in adopting CE practices in these companies. However, more financial challenges are identified in the lodge than the DMO. Since the lodge has to provide premium accommodation and facilities to its guests in high altitude locations with lack of access to basic amenities and facilities, its operational costs are higher than that of the DMO situated in the well-facilitated capital city.

4.4 Understanding the existing business models

Sub-sections 4.4.1 and 4.4.2 show the results of the Business Canvas Model mapping of the companies in BECE step 4, which is understanding the business portfolio.

4.4.1 Current business canvas model of International Trekkers

Key Partners	Key Activities	Value Propositions	Customer Relationships	Customer segments
Foreign agents, local service providers, hotels and accommodation owners, national tourism organizations, government offices, rental transport companies, technology partners. Bloggers and travel planners	Well planned and organized trips	Professional and safe adventure experiences, encounter with different cultures and lifestyles, different levels of experience and luxury, useful travel contents, ease of transaction, reduction of risk, cheap prices and customer services	Long- term relationships	Adventurers, explorers, outdoor activists and open-air enthusiasts, beginners to experts, different spending and travelling behaviors
	Key Resources		Channels	
	Safe tourist destinations and sites, standard accommodation and lodges, knowledgeable staff, travel packages and itineraries, web development and customer database		Foreign based Online Travel Agencies, word-of-mouth, social media	
Cost structure		Revenue streams		
Business development and expansion, advertising and marketing, payment to hotels and service providers, customer capture		Direct sales, commissions, fixed contracts with service providers		

Figure 4-1 Current business model of International Trekkers

Source: Own compilation

Figure 4-1 shows the business canvas model of International Trekkers. The customers' segment of International Trekkers has diverse characteristics. They are adventurers, cultural

enthusiasts, outdoor activists, etc., who want to experience the nature and local lifestyle. Key activities of International Trekkers are to recognize and address the changes in the external factors staying competitive in an ever growing industry, both locally and globally. Customers want to experience authentic local lifestyle. The company provides various travel packages depending on the features and profiles of their customers. Wide selection of itineraries, accurate content creations and detailed informations are provided to create long-term relationships with the customers. So, this is a service-oriented business where creating invaluable experience for the customer is vital for their satisfaction. Providing best comfort and enhanced experience by value added services is the value proposition. Thus, customer satisfaction is a key priority.

Additionally, the customers are reached mainly through partner online travel agencies in foreign countries. The revenue is generated through direct sales of travel packages, commissions from partners and fixed contracts with service providers. Major portion of the cost is incurred for marketing and promotional activities.

4.4.2 Current business canvas model of Everest Lodges

Key Partners	Key Activities	Value Propositions	Customer Relationships	Customer segments
Local agents, travel agency, customers	Food and accommodation services, guide service, lodge maintenance, etc.	Best comfort and excellent service, luxury, enhanced experience, value added services (helicopter flights, higher quality food spreads)	Long- term relationships, premium service	Mostly Americans, Germans and British tourists, VVIP
	Key Resources Employees, lodges, capital, knowledge and expertise		Channels Local and international agents	
Cost structure		Revenue streams		
Airplane freight, marketing		Premium food and accommodation fee		

Figure 4-2 Current business model of Everest Lodges
Source: Own compilation

Figure 4-2 shows the business canvas model of Everest Lodges. Key activities of the lodge are providing comfort and luxury services to their guests. These key activities in Customer Relationships are done through guides and lodge staff. The lodge requires excellent

manpower and access to building materials for renovations and improvements. Bundles of products and services depend on the net worth of the client as advised by the agents. Customer expectation is that premium prices are met by premium accommodation and service. Guides do the majority of the customer relationship and the city office handles all the logistics.

Around 1-2 tons of food supplies are transported from the capital to the lodges by airplane on a yearly basis, which is a huge cost factor. In addition, any renovation supplies need to be brought over from Kathmandu to each of the lodges (see Figure 3-4). Due to the rugged geography in the mountains, transportation is usually very expensive. Manpower training is not too expensive because they do not hire managers from abroad. Marketing is the most expensive function since they attend international fairs twice a year, which is important to maintain relationship with their agents. It serves as a platform for promoting the lodges and building network with new clients and agents for future partnerships. There is potential for more revenue streams at the lodge, but they have not been able to identify them yet since they only operate six months in a year. Customers pay through agents but they can get cheaper rates if they contact the lodges directly. Revenue is earned by selling all-in-one package that includes room, food and beverages.

4.5 Strategy formulation and evaluation

After analysing the findings from Phase I, it was determined that new strategies and business models are to be designed for the companies to be circular and tap into the future opportunities bestowed by CE. First, the two companies were asked to brainstorm about materials used in their business. Assets and materials used in travel agency are office building, furniture, computers, telephones and other electronic devices, office vehicles, trekking equipment (tents, sleeping bags and mattresses, trekking shoes and jackets for porters, ropes, ice axes, climbing safety harnesses), stationaries, USP and Backup batteries, cleaning and maintenance tools and products, kitchen utensils and equipment, etc. Whereas, assets in the lodges are buildings, land, garden, food supplies brought from Kathmandu, beverages, carpentry materials for the maintenance of furniture (beds, mattresses, chairs), linens (curtains, bedsheets, towels), crockery, woodfire to heat dining room, among others.

The potential strategies for both companies were identified using the ReSOLVE checklist, which are shown in Tables 4-4 and 4-5 below. Among those, only the bold highlighted ones

deemed feasible, were taken into the evaluation stage and evaluated using the criteria developed (see Tables 4-6 and 4-7).

Table 4-4 ReSOLVE strategies for International Trekkers

<i>Strategies</i>	
<i>Regenerate</i>	<ul style="list-style-type: none"> - Keeping trails clean - Planting trees
<i>Share</i>	<ul style="list-style-type: none"> - Repair and maintenance of old materials
<i>Optimise</i>	<ul style="list-style-type: none"> - Involving local inhabitants - Monitoring and assessing the eco-tourism practices and behaviors of both locals and tourists
<i>Loop</i>	<ul style="list-style-type: none"> - Recycling old materials
<i>Virtualise</i>	<ul style="list-style-type: none"> - Online purchase of tour package, flight and lodge reservation - Developing an app for virtualizing trekking permits and routes
<i>Exchange</i>	<ul style="list-style-type: none"> - Using apps instead of traditional ways

Source: Own compilation

Table 4-4 shows strategies generated for International Trekkers which fits with the ReSOLVE actions. For example, keeping trails clean will enhance the natural beauty of the destination places. Involving local inhabitants i.e. outsourcing surplus technology or equipment to the community (lending the repair and maintenance tools, etc.) will help in maximizing the resource use instead of letting them go to waste without full utilization.

Table 4-5 ReSOLVE strategies for Everest Lodges

<i>Strategies</i>	
<i>Regenerate</i>	<ul style="list-style-type: none"> - Greenhouse/hydroponic farming - More efficient solar panels
<i>Share</i>	<ul style="list-style-type: none"> - Reuse of materials
<i>Optimise</i>	<ul style="list-style-type: none"> - Use of data and technology to distribute supplies with forecasted demand
<i>Loop</i>	<ul style="list-style-type: none"> - Building compost to turn bio waste into fertilizer
<i>Virtualise</i>	<ul style="list-style-type: none"> - Online reservations and promotions
<i>Exchange</i>	<ul style="list-style-type: none"> - Possibility for wind power

Source: Own compilation

Table 4-5 shows strategies generated for Everest Lodges, which fit with the ReSOLVE actions. For example, greenhouse farming and more efficient solar panels will help maintain and enhance the natural ecosystem. Reuse of materials means sharing the assets with other consumers which will extend the product lifespan. Using data and technology to distribute supplies with forecasted demand will help in optimizing the production of food and other services in the lodges.

Table 4-6 Evaluation matrix for International Trekkers

Criteria	Weight (a)	Keeping trails clean	Recycling used materials	Involving local inhabitants	Online purchase of tour package and lodge reservation	Virtualizing trekking permits and routes
Quality service	5	High (b)	Low	Medium	High	High
Customer satisfaction	4	High	Low (b)	High	High	High
Revenue growth	3	High	Medium	Medium (b)	High	High
Evaluation score		36	15	28	36	36

(a) 1 = least important, 5 = most important

(b) High = 3, medium = 2, low = 1

Source: Adapted from Heyes et al. (2018)

Each of these ReSOLVE models shown in Table 4-6 above present new opportunities for the business as mentioned by Heyes et al. (2018). Recycling used materials helps to obtain the same or lower quality materials and it was found to be one of the common strategies in most of the definitions of CE by Kirchherr, Reike, and Hekkert (2017). Recycling is considered as one of the least circular strategies in the 9R framework, as discussed in subsection 2.3.1 (Potting et al. 2017). Big hotel groups have been emphasizing on reduction, reuse and recycling strategies as found in the multi-case approach by Rodríguez-Antón and Alonso-Almeida (2019). However, since the one of the principles of a CE is to design out

waste (EMF 2017c), priority should be given to preventing waste from generating in the first place. Moreover, involving local inhabitants is also an important strategy since long-term commitment from all stakeholders is essential for the successful implementation of any business model (Scheepens, Vogtländer, and Brezet 2016) and the companies should aim to maximize the value for the whole supply chain (Chopra and Meindl 2016).

According to the evaluation matrix in Table 4-6, three highest scoring alternatives for International Trekkers are “Keeping trails clean”, “Online purchase of tour package and lodge reservation” and “Virtualizing trekking permits and routes”. “Keeping trails clean” requires proper waste management system in the local municipalities and creating awareness among local inhabitants as well as travellers. It helps to maintain the quality of life in the local community and enhance the value of natural or cultural heritage. In addition, when people go for trekking to enjoy the natural environment, cleanliness of the trails will give a positive impression and create an enjoyable experience. As Hudson (2008) puts it, in service sectors like tourism and hospitality, customers depend on tangible cues to evaluate their satisfaction with the service during and after consumption.

The other two strategies “Online purchase of tour package and lodge reservation” and “Virtualizing trekking permits and routes” require technological expertise and upfront investment in advanced software. These strategies lie in the highest section of the 9R framework, thus, ‘rethinking’ new ways of conducting business and ‘refusing’ the use of old methods, providing same services with new approach (Potting et al. 2017). These strategies will remove the paper consumption in this industry by going digital. Partnerships with software provider with customer database, lodges and other service providers as well as integration of national and governmental bodies is essential to make this successful, since collaboration is an enabler of CE (EMF 2017b). Certainly, these actions improve the service quality and have huge impact on customer satisfaction, ultimately adding to the revenue generation.

Similarly, the strategies for Everest lodges were also evaluated on the basis of their business priorities (see Table 4-7).

Table 4-7 Evaluation matrix for Everest Lodges

Criteria	Weight (a)	Greenhouse/hydroponic farming	More efficient solar panels	Use of data and technology	Building compost to turn bio waste into fertilizer	Online reservations and promotions
Customer satisfaction	5	Medium (b)	Low (b)	High (b)	Medium	Medium
Quality service	4	Medium	Medium	High	Medium	Medium
Revenue growth	3	Medium	Medium	High	Medium	High
Evaluation score		24	19	36	24	27

(a) 1 = least important, 5 = most important

(b) High = 3, medium = 2, low = 1

Source: Adapted from Heyes et al. (2018)

The strategies generated for the lodge in Table 4-7 above also bear huge potential. “Greenhouse/hydroponic farming” will provide the lodge with high-quality ingredients in the site itself instead of paying for expensive food transportation from the capital city. In addition, “Building compost to turn bio-waste into fertilizer” means no harmful pesticides in the land. As shown in the butterfly diagram (Figure 2-3, sub-section 2.2.3) by EMF (2017d), wastes like leftover food and other biowastes can be turned into fertilizer, which will be used to grow organic crops, thus, making waste a valuable resource – one of the principles of CE (EMF 2017a).

Besides, “More efficient solar panels” belongs to SDG 7 – Affordable and clean energy and it serves as an alternative for non-renewable energy sources (Suárez-Eiroa et al. 2019). Since there is large consumption of energy in this sector, solar lighting and heating should be used instead of non-renewable and if it is not available, they should reduce their energy use (Manniche et al. 2017).

According to the matrix, the top scoring alternatives for Everest Lodges are “Use of data and technology to distribute supplies with forecasted demand” and “Online reservations and promotions”. These strategies also belong to the higher levels in the 9R framework of

circular strategies i.e. rethinking (Potting et al. 2017). Building core competencies with new technologies is one of the building blocks of CE (EMF 2017b) and maximizing the use of digital services is one of the strategies for circular tourism (Wolde 2016).

4.6 Summary of the findings

The findings and analysis of the research were presented in this Chapter. Overall, it was found that the case companies have potential to become circular. Knowledge about CE practices should be shared among all stakeholders. Another major insight is that cultural and sectoral factors have a major role in CE implementation in the case companies, acting both as drivers and barriers. Next, we discuss the findings of this study.

Chapter 5

Discussion

5.1 Chapter Introduction

The objective of this study was to identify the potential for tourism industry to transition from linear to CE and to verify the usability of the BECE framework. This was done by carrying out a multiple-case study by replicating the framework and reviewing the literature. This Chapter discusses the findings and analysis and evaluates their fit with existing literature.

5.2 Transition of the tourism sector towards CE

Tourism sector has generated pressure on the natural resources (Florido, Jacob, and Payeras 2019). Thus, it is necessary for this sector to shift from the linear mode of production and consumption towards a circular tourism. In this study, we found out various ReSOLVE actions for both companies, which shows that there is potential for CE transition in tourism sector. The drivers and barriers to the transition are highlighted in sub-sections 5.2.1 and 5.2.2, respectively. The appropriate strategy or business model for this sector is explained in sub-section 5.2.3.

5.2.1 Factors driving circularity in the tourism sector

Consumer influence seems to be the major factor behind companies adopting the CE and green practices (Julião et al. 2018). The interpersonal relationship between the hosts and the guests in this sector can facilitate in influencing the consumption behavior of the guests during and after the stay (Florido, Jacob, and Payeras 2019). This helps in facilitating the implementation of the CEBMs in the tourism industry.

Cultural enablers like local and tourists' involvements and local municipality cooperation were the main drivers to facilitate CE transition. These drivers are in consistence with the literature (Hart et al. 2019, de Jesus and Mendonça 2018). Similarly, sectoral enablers like collaboration with all stakeholders, national and international organizations, incentives for the local businesses and communities to invest in energy efficiency and alternative energy sources align with the enablers mentioned by EMF (2017c). Neupane and Upadhyaya (2019), (Cayzer and Tuladhar 2018) have also mentioned creating a favorable environment

for the promotion of innovation in business and providing incentives like tax exemption for businesses to promote CE. Thus, the findings of this study agree with that part of literature.

It can be seen that cultural, regulatory and sectoral drivers are deemed to be the most important for transitioning to CE. It is surprising to see that financial drivers were almost not mentioned even though it was found to be the most important in transitioning to a CE (Gusmerotti et al. 2019). This could only mean that they are still not aware of the vast economic potential of circular practices.

The EMF (2017c) has mentioned that building core competencies and reverse logistics are the building blocks of CE. The findings of this study also highlighted the need for proper solid waste management system and providing tax incentives to companies. Possessing a reverse logistic facility is one of the core competencies for the tourism companies to become circular. Training regarding better waste management practices, align with the ones identified by Cayzer and Tuladhar (2018), (Neupane and Upadhyaya 2019), that is, improving the current solid waste management via sorting at source and turning waste into bio-gas. Bringing back the materials into the economy and turning waste into resources is not possible without proper infrastructures and facilities to aid that flow. Such kind of measure require government investment and commitment, which is one of the enablers of CE as mentioned by Hart et al. (2019). After all, government plays an important role in facilitating CE in tourism (Florido, Jacob, and Payeras 2019).

However, the role of the DMOs and the lodges cannot be ignored. As highlighted in the three-axis model by Florido, Jacob, and Payeras (2019), (see Figure2-10), they have a major role in the transition to CE. They should also take accountability for their actions and implement changes to reduce their environmental impact and gain new market opportunities. They should also increase awareness, train and involve their employees regarding the CE practices (Florido, Jacob, and Payeras 2019). Thus, as asserted by Scheepens, Vogtländer, and Brezet (2016), this study's findings also support long-term commitment from all micro, meso and macro level actors for successful CE transition in the tourism sector.

5.2.2 Major obstacles in achieving circularity in the tourism sector

Tourism, as a service industry, faces many challenges such as managing multiple customers in real time, managing experience, understanding the customer perspective, coordinating different parties, managing short-term and long-term issues simultaneously (Johnston and Clark 2008). Whereas, managing dynamic growth, climate change, poverty alleviation, support for conservation, health, safety and security are the challenges of sustainable tourism (UNEP and WTO 2005).

Firstly, the cultural barriers identified in this thesis are lack of commitment (only using eco-tourism as a marketing tool), lack of awareness in the mountain villages and lack of participation in tree plantation programs. There is also lack of ways to control, monitor and assess the conducts and ethics of the operators and facilities and expensive solar panels. These barriers are also consistent with the barriers identified in the literature (Kirchherr et al. 2018); (Hart et al. 2019); (Rizos et al. 2015); (Julião et al. 2018); (Florido, Jacob, and Payeras 2019). Although Kirchherr et al. (2018) found that hesitant company culture is the major cultural barrier in adopting CE practices, this study finds no such barrier in the tourism sector. Their willingness to recreate their vision and learn about the CE strategies shows that they want to explore new possibilities.

Additionally, there were some financial barriers identified in the lodge, for example, expensive solar panels and expensive transportation charge to the mountains. Shifting the energy source or the transportation modes require huge investment and funding as asserted by Hart et al. (2019) and, makes it difficult to adopt CE practices as mentioned by Rizos et al. (2015), (de Jesus and Mendonça 2018).

In the journey of transition to CE, every small effort count. The findings of this study support the definition of CE given by Kirchherr, Reike, and Hekkert (2017) that highlights the importance of all micro, meso and macro levels for CE to prosper. Additionally, as illustrated in the three-axis model by Florido, Jacob, and Payeras (2019), the government/DMOs, the hotel and the resident population have equal roles in the successful implementation of the CE practices. As mentioned by Heyes et al. (2018), support at the macro-economic level from government, universities and network organizations is necessary to mitigate these barriers.

Knowledge regarding CE in developing economies is yet to be developed. Considering the case in this study, it proves that the concept of CE is still in its embryonic stage in Nepal (Neupane and Upadhyaya 2019). Transitioning towards a CE is not possible without suitable infrastructures and policies to support it (Parajuly 2019). For example, there is a huge consumption of plastic bags in Nepal because retailers provide them for free to their customers (Bharadwaj 2016). Although the Government of Nepal enforced a regulation i.e. Plastic Bag Regulation and Control Directive 2011, which restricts the use and production of plastic bags less than 20 microns thick (Bharadwaj 2016). When Kathmandu Metropolitan City declared its plastic bag ban in 2013, this resulted in a stay order by the Supreme Court due to application filed by Plastic Material Production Association, which was later enforced but unimplemented (Bharadwaj 2016). The fact that plastic bottles are banned in Everest lodges is appreciable. In the 9R framework by Potting et al. (2017) (see Figure 2-3), refusing to use plastic can be considered as one of the high-circularity strategies. This is an example of mitigating sectoral barriers via cultural drivers, that is, through commitment.

5.2.3 Appropriate CE strategies or business model in the tourism sector

Among the top strategies, both companies have one in common, that is, “online tour package and lodge reservations”. So, we decided to generate a new business model for this (see Figure 5-1). Among the CEBMs, it can be considered as the sharing platform where the DMO, lodge and the tourists (consumers) are connected through an online platform or website (Lacy and Rutqvist 2015). This model will help in managing both suppliers and customers through the same platform (see Figure 2-5).

As per Oreve (2015), selection, planning and booking through a sustainable process is an important factor in the circular tourism (see Figure 2-8). Additionally, Lacy and Rutqvist (2015) assert that this kind of sharing platform reduces the burden of undergoing expensive promotional and marketing campaigns by giving a digital presence to the companies and providing them with an opportunity to reach larger market and more convenience to the customers.

Figure 5-1 shows a new business canvas model, used to identify how the chosen strategy can be implemented into practice.

Key Partners	Key Activities	Value Propositions	Customer Relationships	Customer segments
Software company, Airlines, Individual travelers-	Promotion and reservation of tour packages and services	Increase convenience and better market reach	Personal assistance and Co-creation	Mass market - adventurers cultural enthusiasts, beginners, nationals and internationals
	Key Resources		Channels	
	Website/software, funds, a mobile application (potentially)		Company website, Partner website (vehicle rental services, etc.) Third-party website (makemytrip, yatra etc.)	
Cost structure		Revenue streams		
Software development and maintenance cost, skilled employee cost		Direct sales, promotion of other brands		

Figure 5-1 New business model
Source: Own compilation

Considering the categorization of circular strategies by Potting et al. (2017), this new business model can be a “rethinking” strategy which enables smarter use of products as services (see Figure 2-3). It is one of the high-circularity strategies. Since this model facilitates multiple transactions (Lacy and Rutqvist 2015), it will be targeted to all customers despite of the differences in their background and characteristics. The aim of this model is to provide personal assistance to customers in booking their trips and co-creating value by allowing them to leave a review on the platform/website (Osterwalder and Pigneur 2010). Feedback between tourists is one of the important factors in the circular tourism model (Oreve 2015).

Key partners in this model are the two companies; International Trekkers as a DMO and Everest lodge. The software provider is also another important partner who will be responsible for the development and maintenance of the website. Although investing in such systems is costly, this is necessary for the business to survive and succeed in the long-run (Jones and Wynn 2019). All the inquiries and transactions will be done through the website. This means that it will save travel time for both customers and the companies to meet in person before they purchase the services. It will also generate new revenue stream, for

instance, by using Google Ads, they can get earnings from advertisements placed in their website with enough traffic.

Among the ReSOLVE models, the new business model highlights the importance of the “virtualize” action, which is in contrast to the findings of Heyes et al. (2018), that is, the “optimize” action. Thus, every sector has its own drivers, barriers and appropriate strategies to mitigate those barriers. Nevertheless, both actions depend on the use of technology. Since consumers today are well-equipped with modern technology, being able to book their trips online can act as a tangible cue of satisfaction for the customers as mentioned by Hudson (2008).

However, there are other factors necessary to complete the circular tourism framework as per Oreve (2015). The business model presented in this section is only a step towards circularity in the tourism sector. Thus, it should be supported by other CEBMs to achieve full circularity. For example, ensuring sustainable stay at the moment is not possible due to various obstacles, as explained in sub-section 5.2.2. Additionally, sustainable transport is required to facilitate the movement of people and goods. Only then, can the tourism sector become fully circular.

5.3 Usability of the BECE framework in the tourism sector

Applying the BECE framework in the case companies helped in answering the research questions, which are already explained in section 5.2. Furthermore, the advantages and disadvantages of this framework are shown in Table 5-1 below.

Table 5-1 Advantages and Disadvantages of BECE framework

Advantages	Disadvantages/Challenges
<ul style="list-style-type: none"> - Encourage CE thinking - Clear understanding of current business model - Cost-efficient - Fits ReSOLVE criteria - Generation of new business model 	<ul style="list-style-type: none"> - Requires sufficient knowledge about CE concepts and business models - Requires facilitator - Requires strong commitment - Solutions might be limited

Source: Adapted from (Mendoza et al. 2017, Heyes et al. 2018)

As shown in Table 5-1, there are many advantages of using this framework. Firstly, it encouraged CE thinking in the companies by compelling them to integrate CE in their vision.

Secondly, it portrayed a clear picture of the current business by using the Business Canvas Model. It also fulfilled the ReSOLVE criteria and helped generate new business model. All these benefits align with the one mentioned by Mendoza et al. (2017), (Heyes et al. 2018). However, in contrast to the previous studies, the framework was carried via online communication in this study, which in turn, proved as a cost-efficient and effective procedure, especially in terms of crisis.

Nevertheless, there are some disadvantages or challenges of using this framework. Firstly, it requires adequate knowledge about CE concepts and strategies, so as to design the workshop procedure properly. Secondly, as mentioned by Mendoza et al. (2017), it is not possible to conduct workshop without the guidance of the researcher/facilitator. However, the role of the researcher in this study (as a facilitator), was limited as much as possible to avoid this intervention and companies were encouraged to come up with their own solutions. Whereas, if managers possess enough knowledge and skills regarding CE then, it is super easy to carry out this framework without any third-party involvement. Thirdly, it requires strong commitment from both the researcher and the companies for the successful completion of this framework. Finally, the solutions might have been limited by only using the ReSOLVE checklist (Heyes et al. 2018). Further studies might consider aligning other methodologies or model in addition to this framework to identify more opportunities.

Next, the conclusions and limitations of this study are presented in Chapter Six.

Chapter 6

Conclusions and Contributions

6.1 Chapter Introduction

This Chapter gives a brief summary of the study with theoretical and practical contributions. It also mentions the limitations of the study and presents areas for further research.

6.2 Summary

The main objective of the study was to explore the potential of the tourism industry in transitioning into CE. Tourism companies operate as a Product-Service Supply Chain and there are not enough frameworks and applications of CE in services (Heyes et al. 2018). Applying the BECE framework in the case companies proved beneficial, as it provided a new perspective to the companies. The companies had limited knowledge regarding CE prior to this study. However, nine CE actions were identified for International Trekkers and seven CE actions were identified for Everest lodges. These were later evaluated as per the business priorities and one common strategy was recommended for both companies to work as a joint venture. The new business canvas model enabled the companies to create, capture and deliver same value to the customers but in a different and more efficient way. It reduces promotional and operational costs as well as improves the flow of information between customers and the companies. It also emphasizes on the need for collaboration and cooperation among the supply chain partners.

Tourism sector should take accountability for their actions regarding the way they manage their resources and aim to maximize economic, social and environmental benefits for present generation as well as future generation (UNEP and WTO 2005, Sloan, Legrand, and Chen 2013). With the study's findings, it can be concluded that it is possible for the tourism sector to become circular. The case companies were able to understand the need for adapting CEBM as a result of this study and BECE framework proved as a useful tool in identifying CE actions for the case companies. It is, however, a lengthy process and needs active engagement from both the researcher and the companies to carry it out effectively.

It was not possible to wait for the implementation of the strategies and review them due to various factors. Firstly, there is time restriction for the thesis work. Secondly, all business activities have been shut down or delayed due to the outbreak of COVID-19, an unforeseen circumstance. In addition, barriers like high upfront investment costs and lack of engagement and commitment identified by (Hart et al. 2019), can delay or stop the implementation of the model.

6.3 Theoretical contributions

This thesis extends the literature on CE in three important ways. Firstly, it adds to the literature on circular tourism. It has confirmed the drivers and barriers of CE identified in the literature with those identified in this study. Additionally, since the case companies in this study are from developing countries, this adds to the CE literature especially on developing economies by identifying the drivers, barriers and appropriate strategies.

Secondly, it tends to fill the literature gap in the application of CE principles in the tourism sector. It adds to the literature on the BECE framework in service companies. It provides guidance to the design of circular tourism business models by using the ReSOLVE checklist and the business canvas model.

Thirdly, “regenerate”, “optimize” and “virtualize” were the most important actions in both companies. However, a new business model was generated (Sharing platform) for “online tour and lodge reservation” which outlines how the companies can create, capture and deliver value to their customers. Thus, it adds to the literature on transitioning PSSC from linear to CE. It highlights the importance of virtualization and sharing platform in the tourism sector and needs further exploration. Further research on the role of technology and common platforms for CE transition in the tourism sector is required.

6.4 Practical contributions

Besides the more theoretical contributions for research described in the previous section and extension of existing literature, several practical findings for managers can be derived from this study. The close relationship between the DMO and lodge in the tourism value chain highlights the need for collaborative value creation. In addition, collaboration with local and governmental bodies is equally important to make the value chain circular. Hence, this study

heightens the importance of the community and the government in working together, as a way of facilitating the implementation of CE practices.

As mentioned by Heyes et al. (2018), it is also important for companies to be able to implement the BECE framework without the involvement of the researcher. This highlights the need to increase CE awareness and commitment in the managerial level. For example, companies can organize training sessions to make their employees aware of the CE practices. Knowledge and skills regarding CE concepts could be one of the qualifications for managerial positions. A further exploration into the academic background of the managers is required.

By identifying the drivers of CE in tourism sector, companies can try to gain the competencies they require for the transition and use it to their competitive advantage. At the same time, they should be conscious of the identified barriers and try to find ways to mitigate them.

6.5 Limitations and areas for further research

Due to the outbreak of COVID-19, which was declared a Public Health Emergency of International Concern in January 2020 by WHO (2020b), countries around the world started implementing lockdown measures. Since direct personal visits were strongly advised against, the study had to be conducted from home without field visit. So, visit to Nepal was cancelled and the study was carried out via online communication between the researcher and the case companies. Further studies can try to implement this framework in real-world setting to see if there are any differences in the findings.

Additionally, the lockdown had serious effects on the business operations of the companies and thus, diverted their attention to more important issues. This was the reason for delay in communication sometimes. Eventually, this became the reason why the study has not covered the post-workshop activities as illustrated in the BECE framework (see Figure 3-6). However, the framework provided useful insights on developing strategies based on their business priorities. Further research regarding the application of this framework in other service sectors as well as role of virtualization in tourism sector is required. In addition, since this study only presented the companies' perspectives, the roles of government bodies and consumers should be explored further.

As mentioned in section 3.4, this study was initially supposed to be mixed method combining both quantitative and qualitative strategies. Since it was not possible to do so this time, future studies based on solely quantitative or mixed method can provide more insight on this topic. Likewise, it is also possible to carry out a nation-wise/region-wise study to compare the situation in both developed and developing economies to see if there will be any variations.

References

- Accenture. 2014. Circular Advantage : Innovative Business Models and Technologies to Create Value without Limits to Growth.
- Accenture. 2019. Circular economy business models for the manufacturing industry.
- Acharya, Anita S, Anupam Prakash, Pikee Saxena, and Aruna Nigam. 2013. "Sampling: Why and how of it." *Indian Journal of Medical Specialties* 4 (2):330-333.
- Adams, Katherine Tebbatt, Mohamed Osmani, Tony Thorpe, and Jane Thornback. 2017. "Circular economy in construction: current awareness, challenges and enablers." Proceedings of the Institution of Civil Engineers-Waste and Resource Management.
- Benyus, Janine M. 1997. Biomimicry: Innovation inspired by nature. Morrow New York.
- Bharadwaj, Bishal. 2016. "Plastic Bag Ban in Nepal: Enforcement and Effectiveness " *South Asian Network for Development and Environmental Economics (SANDEE)*.
- Bocken, Nancy M. P., Ingrid de Pauw, Conny Bakker, and Bram van der Grinten. 2016. "Product design and business model strategies for a circular economy." *Journal of Industrial and Production Engineering* 33 (5):308-320. doi: 10.1080/21681015.2016.1172124.
- Cayzer, Steve, and Alisha Tuladhar. 2018. "Drivers and Enablers Behind a Transition Towards a Circular Economy: A Case Study of Nepal." Proceedings of the International Association for Business and Society.
- Central Bureau of Statistics. 2018. "Home." Government of Nepal - National Planning Commission. <https://cbs.gov.np/>.
- Central Bureau of Statistics. 2020. National Accounts of Nepal. edited by GDP 2020 CBS: Government of Nepal - National Planning Commission.
- Chopra, Sunil, and Peter Meindl. 2016. *Supply Chain Management - Strategy, Planning and Operation*. 6 ed: Pearson Education Limited.
- de Jesus, Ana, and Sandro Mendonça. 2018. "Lost in Transition? Drivers and Barriers in the Eco-innovation Road to the Circular Economy." *Ecological Economics* 145:75-89. doi: <https://doi.org/10.1016/j.ecolecon.2017.08.001>.
- Dreborg, Karl H. 1996. "Essence of backcasting." *Futures* 28 (9):813-828. doi: [https://doi.org/10.1016/S0016-3287\(96\)00044-4](https://doi.org/10.1016/S0016-3287(96)00044-4).
- Ecopreneur. 2020a. "Circularity check." <https://ecopreneur.eu/circularity-check-landing-page/>.
- Ecopreneur. 2020b. "Circularity Check: Role of WeSustain and Circular Future." <https://ecopreneur.eu/circularity-check-landing-page/role-of-wesustain/>.
- Elia, Valerio, Maria Grazia Gnoni, and Fabiana Tornese. 2017. "Measuring circular economy strategies through index methods: A critical analysis." *Journal of Cleaner Production* 142:2741-2751. doi: <https://doi.org/10.1016/j.jclepro.2016.10.196>.
- EMF. 2017a. "Circular economy concept." Ellen MacArthur Foundation, accessed March 03, 2020. <https://www.ellenmacarthurfoundation.org/circular-economy/concept>.
- EMF. 2017b. "Circular economy concept - Building blocks." <https://www.ellenmacarthurfoundation.org/circular-economy/concept/building-blocks>.
- EMF. 2017c. "The Circular Economy in Detail." Ellen MacArthur Foundation, accessed March 3, 2020. <https://www.ellenmacarthurfoundation.org/explore/the-circular-economy-in-detail>.

- EMF. 2017d. "Circular Economy System Diagram." Ellen MacArthur Foundation, accessed March 3, 2020. <https://www.ellenmacarthurfoundation.org/circular-economy/concept/infographic>.
- EMF. 2017e. "Circulytics - measuring circularity." <https://www.ellenmacarthurfoundation.org/resources/apply/circulytics-measuring-circularity>.
- EMF. 2017f. "What is the circular economy?". <https://www.ellenmacarthurfoundation.org/circular-economy/what-is-the-circular-economy>.
- Everest Lodges. 2020a. "About us." <https://www.everestlodges.com/about-us>.
- Everest Lodges. 2020b. "Eco-Social." <https://www.everestlodges.com/eco-social>.
- Everest Lodges. 2020c. "Everest Summit Lodges." <https://www.everestlodges.com/>.
- Fischer-Kowalski, Marina, Fridolin Krausmann, Stefan Giljum, Stephan Lutter, Andreas Mayer, Stefan Bringezu, Yuichi Moriguchi, Helmut Schütz, Heinz Schandl, and Helga Weisz. 2011. "Methodology and indicators of economy-wide material flow accounting: State of the art and reliability across sources." *Journal of Industrial Ecology* 15 (6):855-876.
- Flick, Uwe. 2013. *The SAGE Handbook of Qualitative Data Analysis*. 1st ed: SAGE Publications.
- Flick, Uwe. 2018. *The SAGE Handbook of Qualitative Data Collection*: SAGE Publications.
- Florida, Carmen, Marta Jacob, and Margarita Payeras. 2019. "How to Carry out the Transition towards a More Circular Tourist Activity in the Hotel Sector. The Role of Innovation." *Administrative Sciences* 9 (2):47.
- Gao, Li-min, Xing-peng Chen, and Xue-sen Tuo. 2006. "Fresh Thinking of Recycling Tourism Economy Development [J]." *Areal Research and Development* 4.
- Geissdoerfer, Martin, Paulo Savaget, Nancy M. P. Bocken, and Erik Jan Hultink. 2017. "The Circular Economy – A new sustainability paradigm?" *Journal of Cleaner Production* 143:757-768. doi: <https://doi.org/10.1016/j.jclepro.2016.12.048>.
- Gill, Paul, Kate Stewart, Elizabeth Treasure, and Barbara Chadwick. 2008. "Methods of data collection in qualitative research: interviews and focus groups." *British dental journal* 204 (6):291-295.
- Girard, Luigi Fusco, and Francesca Nocca. 2017. "From linear to circular tourism." *Aestimum* 70.
- Graedel, TE, and Braden R Allenby. 2010. *Industrial Ecology and Sustainable Engineering: International Edition*: Pearson Education Inc., Upper Saddle River, Prentice Hall.
- Gusmerotti, Natalia Marzia, Francesco Testa, Filippo Corsini, Gaia Pretner, and Fabio Iraldo. 2019. "Drivers and approaches to the circular economy in manufacturing firms." *Journal of Cleaner Production* 230:314-327. doi: <https://doi.org/10.1016/j.jclepro.2019.05.044>.
- Hart, Jim, Katherine Adams, Jannik Giesekam, Danielle Densley Tingley, and Francesco Pomponi. 2019. "Barriers and drivers in a circular economy: the case of the built environment." *Procedia CIRP* 80:619-624. doi: <https://doi.org/10.1016/j.procir.2018.12.015>.
- Heyes, Graeme, Maria Sharmina, Joan Manuel F. Mendoza, Alejandro Gallego-Schmid, and Adisa Azapagic. 2018. "Developing and implementing circular economy business models in service-oriented technology companies." *Journal of Cleaner Production* 177:621-632. doi: <https://doi.org/10.1016/j.jclepro.2017.12.168>.

- Hudson, Simon. 2008. *Tourism and Hospitality Marketing - A Global Perspective*. London: SAGE Publications Ltd.
- Hussain, Matloub, Mehmood Khan, and Raid Al-Aomar. 2016. "A framework for supply chain sustainability in service industry with Confirmatory Factor Analysis." *Renewable and Sustainable Energy Reviews* 55:1301-1312. doi: <https://doi.org/10.1016/j.rser.2015.07.097>.
- Johnson, Mark W, Clayton M Christensen, and Henning Kagermann. 2008. "Reinventing your business model." *Harvard business review*, 57-68.
- Johnston, Robert, and Graham Clark. 2008. *Service operations management: improving service delivery*: Pearson Education.
- Jones, Peter, and Martin George Wynn. 2019. "The circular economy, natural capital and resilience in tourism and hospitality." *International Journal of Contemporary Hospitality Management*.
- Julião, Jorge, Marcelo Gaspar, Benny Tjahjono, and Sara Rocha. 2018. "Exploring circular economy in the hospitality industry." International Conference on Innovation, Engineering and Entrepreneurship.
- Karlsson, Reine, and Conrad Luttrupp. 2006. "EcoDesign: what's happening? An overview of the subject area of EcoDesign and of the papers in this special issue." *Journal of Cleaner Production* 14 (15):1291-1298. doi: <https://doi.org/10.1016/j.jclepro.2005.11.010>.
- Kirchherr, Julian, Laura Piscicelli, Ruben Bour, Erica Kostense-Smit, Jennifer Muller, Anne Huibrechtse-Truijens, and Marko Hekkert. 2018. "Barriers to the circular economy: evidence from the European Union (EU)." *Ecological Economics* 150:264-272.
- Kirchherr, Julian, Denise Reike, and Marko Hekkert. 2017. "Conceptualizing the circular economy: An analysis of 114 definitions." *Resources, conservation and recycling* 127:221-232.
- Knight, Paul, and James O. Jenkins. 2009. "Adopting and applying eco-design techniques: a practitioners perspective." *Journal of Cleaner Production* 17 (5):549-558. doi: <https://doi.org/10.1016/j.jclepro.2008.10.002>.
- Korhonen, Jouni, Antero Honkasalo, and Jyri Seppälä. 2018. "Circular economy: the concept and its limitations." *Ecological economics* 143:37-46.
- Krausmann, Fridolin, Helga Weisz, Nina Eisenmenger, Helmut Schütz, Willi Haas, and Anke Schaffartzik. 2015. "Economy-wide material flow accounting introduction and guide." *Institute of Social Ecology: Vienna, Austria*.
- Kumar, Ranjit. 2010. *Research Methodology: A Step-by-Step Guide for Beginners*. 3 ed: SAGE Publications Ltd.
- Lacy, Peter , and Jakob Rutqvist. 2015. *Waste to Wealth - The Circular Economy Advantage*. New York: Palgrave Macmillan.
- Lacy, Peter, Jessica Long, and Wesley Spindler. 2020. *The Circular Economy Handbook - Realizing the Circular Advantage*. London: Springer Nature Limited.
- Levin, Kate Ann. 2006. "Study design III: Cross-sectional studies." *Evidence-based dentistry* 7 (1):24-25.
- Li, Wei, and Yuan-shui Huang. 2003. "On the Tourism Resource Development and Conservation Based on Circular Economy [J]." *Journal of Guilin Institute of Tourism* 6.
- Li, Wei, and Yuan-shui Huang. 2004. "Development and protection of tourism resources based on circular economy theories [J]." *Volcanology & Mineral Resources* 2.

- Lieder, Michael, and Amir Rashid. 2016. "Towards circular economy implementation: a comprehensive review in context of manufacturing industry." *Journal of Cleaner Production* 115:36-51. doi: <https://doi.org/10.1016/j.jclepro.2015.12.042>.
- Lofthouse, Vicky. 2006. "Ecodesign tools for designers: defining the requirements." *Journal of Cleaner Production* 14 (15):1386-1395. doi: <https://doi.org/10.1016/j.jclepro.2005.11.013>.
- Lovelock, Christopher, and Paul Patterson. 2015. *Services marketing*: Pearson Australia.
- Luo, Sheng-feng, Yan-ling Huang, and Li-peng Wang. 2009. "Discussion on Circular Economy-oriented Rural Tourism Development Mode [J]." *Tourism Forum*.
- Lyle, John Tillman. 1996. *Regenerative design for sustainable development*: John Wiley & Sons.
- Manniche, Jesper, Karin Topsø Larsen, Rikke Brandt Broegaard, and Emil Holland. 2017. *Destination: A circular tourism economy: A handbook for transitioning toward a circular economy within the tourism and hospitality sectors in the South Baltic Region*. Centre for Regional and Tourism Research.
- McDonough, William, Michael Braungart, Paul T Anastas, and Julie B Zimmerman. 2003. *Peer reviewed: Applying the principles of green engineering to cradle-to-cradle design*. ACS Publications.
- McDowall, Will, Yong Geng, Beijia Huang, Eva Barteková, Raimund Bleischwitz, Serdar Türkeli, René Kemp, and Teresa Doménech. 2017. "Circular economy policies in China and Europe." *Journal of Industrial Ecology* 21 (3):651-661.
- McKinsey Center for Business and Environment. 2015. *Growth within : A circular economy vision for a competitive Europe*.
- McKinsey Center for Business and Environment. 2017. "Mapping the benefits of a circular economy." <https://www.mckinsey.com/business-functions/sustainability/our-insights/mapping-the-benefits-of-a-circular-economy>.
- Mendoza, Joan Manuel F, Maria Sharmina, Alejandro Gallego-Schmid, Graeme Heyes, and Adisa Azapagic. 2017. "Integrating backcasting and eco-design for the circular economy: The BECE framework." *Journal of Industrial Ecology* 21 (3):526-544.
- Mendoza, Joan Manuel F., Alejandro Gallego-Schmid, and Adisa Azapagic. 2019. "Building a business case for implementation of a circular economy in higher education institutions." *Journal of Cleaner Production* 220:553-567. doi: <https://doi.org/10.1016/j.jclepro.2019.02.045>.
- Mentink, BAS. 2014. "Circular business model innovation: a process framework and a tool for business model innovation in a circular economy."
- Miessler, Daniel. 2020. "The Difference Between Deductive and Inductive Reasoning." <https://danielmiessler.com/blog/the-difference-between-deductive-and-inductive-reasoning/>.
- Mihelcic, James R, John C Crittenden, Mitchell J Small, David R Shonnard, David R Hokanson, Qiong Zhang, Hui Chen, Sheryl A Sorby, Valentine U James, and John W Sutherland. 2003. "Sustainability science and engineering: the emergence of a new metadiscipline." *Environmental science & technology* 37 (23):5314-5324.
- Miles, Matthew B., Michael Huberman, and Johnny Saldanna. 2014. *Qualitative Data Analysis: A Methods Sourcebook*. 3rd ed: SAGE Publications.
- Ming, Qing-zhong, Ying Chen, and Qing-lei Li. 2010. "Low-carbon Tourism: The Strategic Choice of The Tourism Industrial Ecology [J]." *Human Geography* 5:22-26.
- Ministry of Foreign Affairs. 2020. "Tourism in Nepal." Ministry of Foreign Affairs. <https://mofa.gov.np/about-nepal/tourism-in-nepal/>.
- NASA. 2020. "The causes of climate change." <https://climate.nasa.gov/causes/>.

- Neupane, Kaustuv Raj, and Rachana Upadhyaya. 2019. "Benefits of Circular Economy." *My Republica*. <https://myrepublica.nagariknetwork.com/news/benefits-of-circular-economy/>.
- Nunez, Christina. 2019. What is global warming explained.
- Olsen, Chris, and DMM St George. 2004. "Cross-sectional study design and data analysis." *College entrance examination board* 26 (03):2006.
- Oreve, Luk. 2015. "Circular Tourism : A new concept." *Circular Tourism*. <http://www.circular-tourism.com/news/circular-tourism-a-new-concept/>.
- Osterwalder, Alexander, and Yves Pigneur. 2010. *Business Model Generation - A Handbook for Visionaries, Game Changers and Challengers*. Hoboken, New Jersey: John Wiley & Sons Inc.
- Parajuly, Keshav. 2019. "Circular Economy and Waste Management in Nepal."
- Pauli, Gunter A. 2010. *The blue economy: 10 years, 100 innovations, 100 million jobs*: Paradigm publications.
- Potting, José, MP Hekkert, Ernst Worrell, and Aldert Hanemaaijer. 2017. *Circular economy: measuring innovation in the product chain*: PBL Publishers.
- PWC. 2020. "Climate change and resource scarcity." <https://www.pwc.co.uk/issues/megatrends/climate-change-and-resource-scarcity.html>.
- Qing-zhong, MING. 2006. "The New Development Conception of Tourism Circular Economy and its Systematic Operation Mode [J]." *Journal of Yunnan Normal University (Humanities and Social Sciences)* 5.
- Qing-zhong, MING, and SHU Xiao-lin. 2007. "THE RESEARCH ON THE DEVELOPMENT IDEA AND THE RUNNING SYSTEM OF CIRCULAR ECONOMY OF TOURISM [J]." *Human Geography* 3.
- Rizos, Vasileios, Arno Behrens, Terri Kafyeke, Martin Hirschnitz-Garbers, and Anastasia Ioannou. 2015. "The circular economy: Barriers and opportunities for SMEs." *CEPS Working Documents*.
- Robinson, John. 2003. "Future subjunctive: backcasting as social learning." *Futures* 35 (8):839-856.
- Rodríguez-Antón, José Miguel, and María del Mar Alonso-Almeida. 2019. "The Circular Economy Strategy in Hospitality: A Multicase Approach." *Sustainability* 11 (20):5665.
- Rose, Leo E., Pradyumna P. Karan, Richard Riseley Proud, and Matinuzzaman Zuberi. 2020. Nepal.
- Rosenblum, Jeffrey, Arpad Horvath, and Chris Hendrickson. 2000. "Environmental Implications of Service Industries." *Environmental Science & Technology* 34 (22):4669-4676. doi: 10.1021/es9914083.
- Sanyé-Mengual, Esther, Raúl Lozano, Ramon Farreny, Jordi Oliver-Solà, Carles Gasol, and Joan Rieradevall. 2014. "Introduction to the Eco-Design Methodology and the Role of Product Carbon Footprint." In, 1-24.
- Saunders, Mark, Philip Lewis, and Adrian Thornhill. 2016. *Research Methods for Business Students*. Seventh ed: Pearson Education.
- Saunders, Mark, PHILIP Lewis, and ADRIAN Thornhill. 2019. "Understanding research philosophy and approaches to theory development." In *Research Methods for Business Students*, 128-158. Harlow, United Kingdom: Pearson Education Limited.
- Scheepens, A. E., J. G. Vogtländer, and J. C. Brezet. 2016. "Two life cycle assessment (LCA) based methods to analyse and design complex (regional) circular economy systems. Case: making water tourism more sustainable." *Journal of Cleaner Production* 114:257-268. doi: <https://doi.org/10.1016/j.jclepro.2015.05.075>.

- Schischke, Karsten, Marcel Hagelüken, and Gregor Steffenhagen. 2005. "An introduction to ecodesign strategies—why, what and how?" *Fraunhofer IZM, Berlin*, <http://www.ecodesignarc.info>.
- Setia, Maninder Singh. 2016. "Methodology series module 3: Cross-sectional studies." *Indian journal of dermatology* 61 (3):261.
- Shu, Xiao-lin, Qing-zhong Ming, Jian-mei Mao, and Xin-hua Ma. 2007. "The Ecotourism, Circular Economy of Tourism and Sustainable Development of Tourism [J]." *Journal of Kunming University* 2.
- Sloan, Philip, Willy Legrand, and Joseph S. Chen. 2013. *Sustainability in the Hospitality Industry : Principles of Sustainable Operations*. London, UNITED KINGDOM: Taylor & Francis Group.
- Smolders, Pablo, and Sanne Snieder. 2012. Transforming the professional service industry towards circular service. August.
- Stahel, Walter. 1994. "The utilization-focused service economy: Resource efficiency and product-life extension." *The greening of industrial ecosystems*:178-190.
- Stahel, Walter. 2010. *The performance economy*: Springer.
- Suárez-Eiroa, Brais, Emilio Fernández, Gonzalo Méndez-Martínez, and David Soto-Oñate. 2019. "Operational principles of circular economy for sustainable development: Linking theory and practice." *Journal of Cleaner Production* 214:952-961. doi: <https://doi.org/10.1016/j.jclepro.2018.12.271>.
- Teece, David J. 2010. "Business models, business strategy and innovation." *Long range planning* 43 (2-3):172-194.
- Trekking Agencies' Association of Nepal. 2020. "International Trekkers (P) Ltd." <https://www.taan.org.np/members/international-trekkers-p-ltd-676>.
- Umihanic Cosickic, Umihana. 2014. "Business Model Innovation as a New Source of Competitive Advantage - A Case Study based on the Energy Sector."
- UNDP. 2020. "Sustainable Development Goals." <https://www.undp.org/content/undp/en/home/sustainable-development-goals.html>.
- UNEP, and WTO. 2005. "Making Tourism More Sustainable - A Guide for Policy Makers (English version)."
- Velenturf, Anne P. M., Sophie A. Archer, Helena I. Gomes, Beate Christgen, Alfonso J. Lag-Brotons, and Phil Purnell. 2019. "Circular economy and the matter of integrated resources." *Science of The Total Environment* 689:963-969. doi: <https://doi.org/10.1016/j.scitotenv.2019.06.449>.
- Wang, Yulan, Stein W. Wallace, Bin Shen, and Tsan-Ming Choi. 2015. "Service supply chain management: A review of operational models." *European Journal of Operational Research* 247 (3):685-698. doi: <https://doi.org/10.1016/j.ejor.2015.05.053>.
- WHO. 2020a. "Air pollution." https://www.who.int/health-topics/air-pollution#tab=tab_1.
- WHO. 2020b. "Rolling updates on coronavirus disease (COVID-19)." <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/events-as-they-happen>.
- Williams, Jeremy. 2016. The ReSOLVE framework for a circular economy. The Earthbound Report.
- Wolak, Russell, Stavros Kalafatis, and Patricia Harris. 1998. "An Investigation into Four Characteristics of Services." *Empirical Generalisations in Marketing Science* 3 (2):22-43.
- Wolde, Arthur ten. 2016. "Circular Tourism." International Conference Green and Accessible Tourism, Croatia.
- WTO. 2020. "Glossary of tourism terms." <https://www.unwto.org/glossary-tourism-terms>.

- WTTC. 2020. "Economic Impact Report." WTTC. <https://wttc.org/en-gb/Research/Economic-Impact>.
- Yin, Robert K. 2018. *Case Study Research and Applications - Design and Methods*. Sixth ed: SAGE Publications.
- Zhang, Ying, and Lin Tian. 2014. "The sustainable development of circular economy under the perspective of ecological tourism." *Advanced Materials Research*.

Appendices

Appendix A – Information letter



Information letter

This experiment is a part of a master thesis project regarding circular economy in tourism sector. The objectives of the thesis are:

- To identify the potential of tourism companies to become circular
- To identify the drivers and barriers
- To find appropriate strategies and business models for tourism companies to become circular

Companies with service only supply chain or product-service supply chain have been selected randomly.

Participation in the project is voluntary. If you chose to participate, you can withdraw your consent at any time without giving a reason. All information about you will then be made anonymous. There will be no negative consequences for you if you chose not to participate or later decide to withdraw.

We will only use your personal data for the purpose(s) specified in this information letter. We will process your personal data confidentially and in accordance with data protection legislation (the General Data Protection Regulation and Personal Data Act).

- Only the student and the supervisor, in connection with the institution responsible for the project, will have access to the personal data
- **The project is scheduled to end at May 2020.** All personal data will be deleted after the end of the project.
- We will process your personal data based on your consent.
- The data will be stored in pseudonymised way until processing and be destroyed after completion of analysis.
- The interview will be recorded using a mobile voice recording app certified for data collection as per regulations (UiO app – Nettskjema diktafon). A copy of transcription will be sent back to the interviewee to confirm their statements so as no misinterpretations has been done

Based on an agreement with *Molde University College*, NSD – The Norwegian Centre for Research Data AS has assessed that the processing of personal data in this project is in accordance with data protection legislation.

Your rights

So long as you can be identified in the collected data, you have the right to:

- access the personal data that is being processed about you
- request that your personal data is deleted
- request that incorrect personal data about you is corrected/rectified
- receive a copy of your personal data (data portability), and
- send a complaint to the Data Protection Officer or The Norwegian Data Protection Authority regarding the processing of your personal data

If you have questions about the project, or want to exercise your rights, contact:

- Supervisor – Nina Pereira Kvasdheim by email (nina.p.kvasdheim@himolde.no) or by phone +47 48310566
- NSD – The Norwegian Centre for Research Data AS, by email: (personverntjenester@nsd.no) or by telephone: +47 55 58 21 17.

I have received and understood information about the project *Assessing potential of service industry to become circular* and have been given the opportunity to ask questions. I give consent:

- to participate in (a case study/experiment)

I give consent for my personal data to be processed until the end date of the project, approx. [May 2020]

Appendix B – Interview guide



Interview guide



Information to the interviewees:

This interview is a part of a master thesis project regarding circular economy in tourism sector. According to Ellen MacArthur Foundation, “a circular economy is restorative and regenerative by design, based on the principles of designing out waste and pollution, keeping products and materials in use, and regenerating natural system.”

The objectives of the thesis are:

- To assess whether and to what extent are the tourism companies circular
- To identify the drivers and barriers faced by tourism companies in going circular
- To find appropriate strategies and business models for tourism companies to become circular

Companies with service only supply chain or product-service supply chain have been selected randomly.

Participation in the project is voluntary. If you chose to participate, you can withdraw your consent at any time without giving a reason. All information about you will then be made anonymous. There will be no negative consequences for you if you chose not to participate or later decide to withdraw.

We will only use your personal data for the purpose(s) specified in this information letter. We will process your personal data confidentially and in accordance with data protection legislation (the General Data Protection Regulation and Personal Data Act).

- Only the student and the supervisor, in connection with the institution responsible for the project, will have access to the personal data
- **The project is scheduled to end at May 2020.** All personal data will be deleted after the end of the project.
- We will process your personal data based on your consent.
- The data will be stored in pseudonymised way until processing and be destroyed after completion of analysis.
- The interview will be recorded using a mobile voice recording app certified for data collection as per regulations (UiO app – Nettskjema diktafon). A copy of transcription will be sent back to the interviewee to confirm their statements so as no misinterpretations has been done

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- request that incorrect personal data about you is corrected/rectified
- receive a copy of your personal data (data portability), and
- send a complaint to the Data Protection Officer or The Norwegian Data Protection Authority regarding the processing of your personal data

If you have questions about the project, or want to exercise your rights, contact:

- Supervisor – Nina Pereira Kvalsheim by email (nina.p.kvalsheim@himolde.no) or by phone +47 48310566
- NSD – The Norwegian Centre for Research Data AS, by email: (personverntjenester@nsd.no) or by telephone: +47 55 58 21 17.

I have received and understood information about the project *Assessing potential of service industry to become circular* and have been given the opportunity to ask questions. I give consent:

to participate in (an interview)

I give consent for my personal data to be processed until the end date of the project, approx. [May 2020]

Questions:

1. What do you think your company would look like in a sustainable, low-carbon emission, zero waste society?
2. What are the key priorities you have as a business?
3. What factors can help in achieving this vision?
4. What factors can be the obstacles in achieving this vision?

Thank you for your cooperation!

End of interview

Appendix C – Business Model Canvas

Business Model Canvas

Designorate.com

Company Name:
Everest Summit Lodges

Date:
14.2.20

Key Partners	Key Activities	Value Proposition	Customer Relationships	Customer Segments
Local Agents, our Travel agency, miscellaneous walk in customers	Maintenance of our Lodge and constant improvements in all facets of the lodge. Excellent manpower from Guides to servers so guests always have a superior experience with us. Key activity in Customer Relationship is done through our Guides and lodge staff.	We provide the most comfortable lodging in the Everest Region with the best level of service and attention to detail. We're helping to solve the customer's problem of wanting to have a lifetime adventure, but, within the comfort and comparative luxury. This way guests have an enhanced and elevated experience in the Everest Region.	Expectation is that premium prices are met by premium accommodation and service. Guides do the majority of customer relationship as our city office handles all the logistics. It's not costly at all because it's already inbuilt in our pricing system.	We separate by geographical regions: we have Americans, Germans and UK citizens. Each profile of client is quite different. In terms of agents there is a difference because some bring VVIP customers who want helicopters, champagne etc., others bring retired couples (and we offer a few concessions here and there).
	Key Resources	Bundles of products and services depend on the net worth of the client as advised by the agents. We add helicopter flights, higher quality food spreads (i.e. products flown in from KTM specifically)	Channels	
	We need excellent manpower, access to building materials etc. for renovations and improvements... Key resource for distributino channels are technical knowledge and communications with agents. Key resource for revenue streams: lower cost food		At the moment, customers are reached primarily through our local and international agents. But more and more we see a need to be on platforms like booking.com, and even having a website of our own, so we can be responsible for telling people our journey in the	
Cost Structure		Revenues Streams		
Costs: 1-2 tonnes of food supplies are transported by airplane on a yearly basis. That is a huge cost factor. Any renovations need supplies to be brought over from Kathmandu. Manpower training is not too expensive because we do not bring in International Level Managers. They key activities that are most expensive is the marketing of the lodges; 2 times a year we attend international fairs that are quite costly but necessary for maintaining relationships with agents.		There is potential for more revenue streams at the lodge, but we cannot identify what exactly because we only operate 6months of the year. For now they pay for premium accommodation and service in the region with the best available foods and staff. They currently pay through agents, but they can get a cheaper rate if they work directly with us. The revenue streams we have is quite basic as we're a mountain lodge and we sell it all in one package: the room rate includes rooms, food, beverages.		

Business Model Canvas

Designorate.com

Company Name:
International Trekkers Pvt. Ltd.

Date:
21 Feb 2020

Key Partners	Key Activities	Value Proposition	Customer Relationships	Customer Segments
<ul style="list-style-type: none"> - Foreign Agents - Local Service Providers - Hotels and Accommodation Owners - National Tourism Organizations - Government Offices and Regulators - Airlines - Rental Transport Companies - Activities Providers - Technology Partners - Bloggers & Travel Planners 	<ul style="list-style-type: none"> - Well prepared and organized trips. Value added experiences for the clientele. - Recognize and address the changes in the external factors. - Staying competitive in an ever growing industry, both locally and globally. - Social Network 	<ul style="list-style-type: none"> - Customers expect us to provide a professional and a safe adventure experiences in some of the most rugged locales. They would like to experience an authentic local lifestyle - Customers travel to encounter different cultures and lifestyles, and have the opportunity to learn firsthand on the various social and economy model of the local places. - Numerous travel packages that identifies different levels (moderate to hard) of experiences and luxury are offered. - Useful travel contents, ease of transaction, reduction of risk, cheap prices and customer services 	<ul style="list-style-type: none"> - Create social media contents and advertisements that targets specific markets. - Wide selection of itineraries, accurate content creations, and detailed informations have to be offered. - Adapt to the changes in technologies and customers' demands and perspectives 	<ul style="list-style-type: none"> - Our customers are adventurers, explorers, outdoor activists and open air enthusiasts. - Our customers can either be new beginners to the adventure world or seasoned and well knowledgeable travelers to someone in between. - Some travel to challenge themselves in the rugged conditions, some are to learn and experience new cultures, some are to enjoy ones presences with nature and solitude. - Our customers are literate to non travel savvy to free & easy going travelers with different spending and traveling behaviors
	Key Resources		Channels	
	<ul style="list-style-type: none"> - Safe tourist destinations and sites. - Tourist standard accommodations and lodges - Knowledgeable Staff - Travel packages and itineraries - Web development and customer database, experiences and feedbacks - Global network and brand recognition 		Our main channels are the foreign based OTAs. Repeated clients and clients from online enquires and websites, make for most of our clientele. Referrals from clients have also allowed to build an effective channels	
Cost Structure		Revenues Streams		
<ul style="list-style-type: none"> - Business Development and expansion - Advertising & Marketing - Global Promotion - Pay services to hotels and activities providers - Customer Capture 		<ul style="list-style-type: none"> - Direct Sales - Commissions - Fixed contracts with service providers 		