Rethinking potentials of Co-management for sustainable common pool resources (CPR) and tourism: The case of a Mediterranean island

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A B S T R A C T

This research explores the potentials of co-management and the state of its implementation in, which is an economy in transition and highly dependent on tourism. The study will focus on multi-level governance structure/behavior in the public sector and quasi-governmental institutions, private sector, and the role of NGOs in relation to local-level commons. Tourism is an energy intensive industry with a high carbon footprint, which immensely affects the common pool resources (CPR) and ecosystems. With such combative relation between tourism and CPR, co-management offers a solid platform for institutions and resource users to share power and collaborate to reconcile the strife between tourism and ecosystems. This study conducted an in-depth interview to obtain qualitative data. MAXQDA12 software was utilized for the data analysis. The results showed that despite an awareness of the environmental challenges and perils of mass tourism, potentials of co-management has not been realized through a multi-level governance approach to tackle the challenges. The implications and limitations are also elaborated.

1. Introduction

Tourism and environmental issues have gained ground following the rapid growth of mass tourism starting in the 1960s (UNWTO, 2016). The main issue of contention concerns the negative impacts of mass tourism on the environment and overall ecosystems of the destinations. The nexus between tourism and environmental issues has engendered ample evidence of the conflict between mass tourism and the environment (Hsieh and Kung, 2013; Zhong et al., 2011; Michailidou et al., 2016; Cao et al., 2016; Papageorgiou, 2016).

This study intends to reexamine the efficacy of co-management in a micro-level (Berkes, 2006) context to explore whether a co-management perspective understood by and adopted in a destination where tourism and environment are experiencing a contentious relationships. In this study, we use the terms "common pool resources" (CPR) and "environment" interchangeably (Plummer and Fitzgibbon, 2006; Briassoulis, 2002; Ostrom, 1990).

(Ostrom et al., 1999:278) 'define common-pool resources as those in which (i) exclusion of beneficiaries through physical and institutional means is especially costly, and (ii) exploitation by one user reduces resource availability for others'. Berkes (2006) referred to them as the "exclusion problem" and the "subtractability problem," respectively. For example, coastal zones are considered common pool resources, which is in constant threat by tourism (Drius et al., 2019). Nevertheless,

'the conventional CPRs are comprised of air and the atmosphere, water resources, oceans, ecosystems, fisheries, forests, wildlife, grazing fields, and irrigation systems. Recently, non-conventional types include streets and transportation systems, ports, urban areas, environmental and socioeconomic costs and benefits, and the Internet' (cyberspace) (Briassoulis, 2002, p. 1066).

Despite the amended policies, laws, regulations, and approaches, most destinations are affected by environmental degradation and face a declining environmental quality caused by the impacts of tourism on the destination's CPR (Lee and Jamal, 2008; Hedlund, 2011; Gössling and Peeters, 2015). Co-management legitimizes 'the need to shift the focus from environmental problem analysis towards the exploration of specific solution options … which has been the focus of international environmental governance debates' (Kowarsch and Jabbour, 2017, p. 187).

Co-management has conceptualized to bring the resource users into a power sharing responsibility with the state. In this context, relationships between the state and community take a transformative path allowing localities to become involved in management and collaboration with the state (Plummer and Fitzgibbon, 2006; Berkes, 2004; Carlsson and Berkes, 2005).

The first objective of the study is to examine whether co-management is understood as pathway to the governance of CPR; knowing that sustainable tourism depends upon sustainable CPR (McDonald, 2009;

Holden, 2005). The second objective is to present arguments that co-management might be a practical approach to protecting the resources that are needed for sustainable tourism (Hayes et al., 2015). The third objective of the study is to suggest a research agenda calling for a new relationship among resource users, where social learning and social capital is in short supply.

The issue of social capital, as elaborated in various articles including Ostrom (1996), Putnam (2000), North (1990), and others, has also established as one of the major ingredients for achieving sustainability. Sustainable management of CPR and tourism will be an elusive goal if social capital is in short supply. Because the business dimension of tourism as well as the conflictive relation between environmental protection and free market economy cannot be tamed unless co-management approach is in place (i.e., power sharing is genuinely implemented). However, resource users, who are also civil society/community/grassroots, will need to unify their inputs to involve in power sharing towards shared goals. Ostrom (1996) articulated this as contribution by individuals who are not in the same organization. She inspired by Putnam who conceptualized social capital 'by analogy with notions of physical capital and human capital–tools and training that enhance individual productivity–"social capital" refers to features of social organization such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit' (Putnam, 2000, p. 224). We also believe that co-management as a mode of governance of CPR and sustainability of the resources is pathway to enhance social capital, which in our case study is in short supply. Nevertheless, 'social capital' and 'co-management' can reinforce each other. Plummer and Fitzgibbon (2006, p. 52) asserted that 'the synergy view of social capital … is particularly relevant to co-management, as social capital combines the network view with the institutional view to emphasize the need for the state and communities to collaborate'. And/or, Henry et al. (2010), in their study of California's regional planning indicated the role of social capital as a driver of policy network structure. Lundmark et al. (2018), in their research on conflictive wildlife management, emphasized the influence of social capital in 'the transformative capacities of co-management' (p. 233). Douglass North made a remarkable statement regarding 'institutions' and 'social capital' which has become a universally accepted definition (Keefer and Knack, 2008). For North and others, the role of informal social norms (i.e., social capital) is crucial because it prescribes cooperative/trustworthy behavior that has 'a significant impact on whether societies can overcome obstacles to contracting and collective action that would otherwise hinder their development' (as cited in Keefer and Knack, 2008, p. 701).

The article is organized around the following three broad questions, which correspond to the three aforementioned objectives:

- What is the state of co-management?
- Is there a mechanism that deliberately encourages co-management?
- Can co-management deliver a practical approach for resolving the conflict between tourism and the common pool resources?

In the meantime, the question of CPR and tourism has not been given deserved attention in either the tourism or the CPR literature (Briassoulis, 2002); therefore, this study is an effort to overcome this void.

2. Literature review

2.1. Co-management and CPR: An overview

Co-management has been reaffirmed as a practicable framework to resolve the conflict between the users and common pool resources (CPR) notwithstanding the complexity of exclusion and subtractibility (Berkes, 2006, 2009; Ostrom, 1999; Sandström, 2009; Nunan et al., 2015; Hogg et al., 2013; Tipa and Welch, 2006; Carlsson and Berkes,

2005). Different scholars have defined co-management in different terms; however, they all share a common ground that reflected in the definition by World Bank. World Bank defines co-management as 'the sharing of responsibilities, rights and duties between the primary stakeholders, in particular, local communities and the nation state; a decentralized approach to decision-making that involves the local users in the decision-making process as equals with the nation-state' (as cited in Carlsson and Berkes, 2005, p. 66). In another word, it is a collaborative management approach to CPR where the power and responsibility are shared between the government/public institutions and resource users (Berkes et al., 1991).

Co-management's manifesto is grounded in three concepts: participation, power sharing and process (Sandström, 2009; Berkes, 2006; Ostrom, 2009). This postulates also a complexity that 'arises from differences between individuals and states and from the separation between those who formulate the rules and those who are subject to them' (Berkes, 2006, p. 2–3). The power sharing should not be confused with rearranging the stakeholders; rather, it is the governance ingredients that contribute to the cohesion of the stakeholders (Lokhorst et al., 2013; Ostrom, 2003; Kooiman, 1993).

Furthermore, co-management has come about because of 'three conceptual shifts: a shift from reductionism to a systems view of the world, a shift to include humans in the ecosystem, and a shift from an expert-based approach to participatory conservation and management' (Berkes, 2004, p. 622). Nevertheless, interlink between CPR and co-management have attracted the attention of scholars due to complexity of management of commons and their sustainability (Ostrom, 2008; Berkes, 2006; Plummer and Fitzgibbon, 2006; Sandström, 2009; Bueno, 2009; Bravo, 2011).

The concept of commons first popularized by Hardin (1968) in his seminal work titled *Tragedy of Commons*. However, it was Ostrom (2008), who refuted the tragic view of Hardin by stating: 'Hardin confused open-access commons with commons that are the joint property of a community. While Hardin correctly pointed out that valuable open-access CPR would be overharvested, his conclusion of an inevitable tragedy was too sweeping' (2008, p. 11). Hardin (1968) also failed 'to discuss non-state examples of control or to recognize regulatory costs, as well as, for obscuring the social nature of institutions' (as cited in Plummer and Fitzgibbon, 2006, pp. 51–52).

In the end, it was the discourse between two schools of thoughts—*Tragedy of Commons* (Hardin, 1968) and *Governing the Commons* (Ostrom, 1990)—that culminated in the concept of co-management, which is an amalgamation of institutions and resource users' cooperation, power sharing, and implementation. Just as failures are attributed to the absence of co-management (Burby, 2003; Hanna, 2005; Alexander and Faludi, 1989); success stories of the co-management approach to resource protection also are abound (Berkes, 2006; Persoon et al., 2003).

Del Pilar Moreno-Sánchez and Maldonado (2010) investigated a Colombian Caribbean case in which co-management resulted in the successful implementation of sustainable governance of marine protected areas. Armitage et al. (2011) examined the co-management application in the Canadian Arctic where participants learned how to adapt to and overcome uncertainties and environmental change, and make long-term commitments to institution building. In their assessment of a co-management approach implemented in Cambodia and Vietnam, Fidelman et al. (2017) revealed that in a complex social, cultural, and political arena, both countries successfully integrated institutions and improved their capacity towards coastal resource protection. Ballet et al. (2009) elaborated how co-management, if implemented, can overcome the dominant rent-seeking relations between institutions and individuals in developing countries. Reggers (2013) explored the role of co-management in Papa New Guinea, where communities and institutions shared power to achieve the protection of the Kokoda trail, leading to its eventual recognition as a world heritage site.

Thus, co-management is a framework for institutions to co-create joint decision-making, accept power sharing, incorporate local input, adopt transformative planning, facilitate social learning, and strengthen social capital (Ostrom, 2008; Tipa and Velch, 2006; Carlsson and Berkes, 2005; Grybovych et al., 2011; Kennedy, 2009; Pan et al., 2018; Islam et al., 2017). Furthermore … 'co-management should be seen as a social process, through which the partners gradually and voluntarily establish close relation of long-term duration through commitment and trust' (Chuenpagdee and Jentoft, 2007, p. 665).

Baral and Heinen (2007) study of Nepal's buffer zones and lowland conservation program revealed the effectiveness of the collaboration between government and communities/grassroots levels in achieving sustainable extraction of the resources. The case of Nepal is a testimony to the credibility of co-management (i.e., decentralization, power sharing and people's participation) as the *sine qua non* for sustainable conservation. Baral and Heinen (2007) explored that devolution (sharing power) strengthened the local organizations in practicing sustainable management. A favorable outcome achieved in a community-based conservation program in Nepal (Mehta and Heinen, 2001), where a devolved legal authority [i.e., power sharing] with grassroots-level institutions to manage local resources resulted in a successful socio-ecological wellbeing. However, none of the studies calibrated tourism -as a complex system- into the CPR domain.

2.2. Co-management and tourism

Sustainable tourism has become prominent because of the negative impact of mass tourism and its intensive use of CPR (Briassoulis, 2002). For instance, mass tourists' consumption of coastal zones for the purpose of sun, sea and sand (3S) tourism, which is exacerbated by over-development of the coast, has raised concerns about sustainability of these natural resources (Lithgow et al., 2019). Co-management framework can be a catalyst for and facilitator of initiating an approach to reconcile the conflict between tourism and environment (Lee and Jamal, 2008) through a sustainable agenda. i.e., sustaining the quality of environment and ecosystems as well as shifting trajectory of mass tourism towards sustainability.

The impact of tourism on CPR should not be taken lightly as over one billion tourists (UNWTO, 2018) are the periodic and random users of CPR (Sandström, 2009). Furthermore, sustainable tourism has implications for 'a wide range of aspects, parks (biodiversity, conservation), pollution (climate change), prosperity (poverty alleviation), peace (security, safety), and population (stabilization and reduction)' (cf. Gössling and Peeters, 2015, p. 640). See also Table 1. Sustainable tourism is a dialectical outcome of conflict between mass tourism and CPR due to its negative impacts (Weaver, 2014). In the meantime, call for alternative tourism grew out of such negative impacts of mass tourism (Bianchi, 2018; Burns, 1999). Therefore, Weaver's (2014) call for "mass sustainable tourism" in a way legitimizes a new management and planning agenda for mass tourism.

However, the present situation of tourism development in relation to triple bottom line (TBL) (i.e., people, planet, and profit) accomplishment is not hopeful after almost three decades of consolidated debate on sustainability. As, Dwyer (2018, p. 30) pointed out:

> Despite widespread recognition of the importance of all tourism stakeholders adopting sustainability attitudes and practices, and emphasizing "best practice" such as corporate social responsibility (CSR) and triple bottom line (TBL) reporting, things seem to be getting worse. Critics question both the rate of take-up of such practices and the strength of stakeholder commitment to them.

Therefore, our general hypothesis is that 'co-management' is the missing link that can set the destination's trajectory on a new path towards sustainable CPR, which sustainable tourism depends upon.

Nevertheless, the practical success stories of co-management as a formidable governance approach to achieve sustainable CPR and

Table 1
Resource use intensities in global tourism.
Source: Gössling and Peeters (2015, p. 648).

Aspect	Range of estimates	Global average
Energy		
- Per guest night	3.6–3717 MJ	272 MJ
- Per trip (domestic and international average)	50-135,815 MJ	3575 MJ
Emissions		
- Per night (accommodation)	0.1–260 kg CO_2	13.8 kg CO_2
- Per trip (domestic and international average)	< 0.1–9.30 t CO_2	250 kg CO_2
Fresh water, Litre per tourist per day		
- Direct (accommodation)	84–2425	350
- Indirect (fuels, food)	4500–8000	6000
- Combined	4600- 12,000	6575
Land use, m^2		
-Direct, per bed	30–4580 m^2/bed	42 m^2
-Accommodation, traffic infrastructure and activities, per tourist		11.7 m^2
Food use, grams per day		
- Per tourist per day	2200- 3l00g	1800 g

tourism has dealt with by Plummer and Fennell (2009) on several grounds. First, they argued that sustainable tourism could not be isolated from sustainable CPR. For instance, the most dynamic and dominant tourism activity is sun, sea and sand (3S) tourism around the world and particularly in island states with immense negative environmental impacts on coastal areas (Tovar-Sánchez et al., 2019; Canteiro et al., 2018). Secondly, coupling human and natural resources (socio-ecological system) presents a complex system; adding tourism to the context further exacerbates the complexity-tourism as a complex system as well (Olya and Mehran, 2017; Sainaghi and Baggio, 2017). Thirdly, because of complex systems of tourism and CPR and their integrative nature, the conventional rational- comprehensive and regulatory models are inadequate (i.e., they are linear, mechanistic, reductionist and narrow our options) in dealing with complex systems. Therefore, co-management 'bridges governance (as opposed to government) and complex systems by bringing together cooperative and adaptive approaches to management' (Plummer and Fennell, 2009, p. 149/153) of CPR and tourism. Moreover, another example of failed rational-comprehensive model is 'carrying capacity' (Mason, 2006), which failed in practice to deal with complex systems because 'in tourism contexts, priorities and objectives typically vary amongst stakeholders, and the carrying capacity approach tends to ignore this variability' (Lindberg and McCool, 1998, p. 291).

The coastal areas as part of CPR are also under threat by tourism (Liubartseva et al., 2018; Cuttelod et al., 2009; Burak et al., 2004), which is exacerbated by the lack of ICZM. Knowing the fact, coastal areas and their 3S tourism appeal are the economic and environmental backbone of the island states, more so in the case of north Cyprus. In the meantime, 'tourism is being revealed as a major sociocultural force with a potential to destroy, protect, or otherwise dramatically reconfigure coastal and marine ecosystems and societies' (Miller and Auyong, 1991, p. 75). Coastal area as part of the CPR which not only threatened by mass tourism, they are also inhabited by majority of human population and prone to anthropogenic impact (Small and Nicollas, 2003). The coastal areas of north Cyprus have been affected by intensive second home development, lack of ICZM, pollution that generated by the Mediterranean proper and self-produced waste material as well as lack of planning and regulation. Liubartseva et al. (2018, p. 156), reported 'the vast coastal areas of Egypt, Israel, Lebanon, Syria and Turkey tend to be persistently polluted by plastic debris with approximate fluxes of 10–30 kg (km day)$^{-1}$. Fluxes of 5 kg (km day)$^{-1}$ are indicated for the Northern Cyprus coastlines, which is higher than 2.1 kg (km day)$^{-1}$ for Cyprus'. Furthermore, absence of co-management has also resulted in

lack of resource users' apathy to clean up the entire long coastline in time to prevent the formation of secondary micro plastics. In the case of north Cyprus, most of the debris generated by the country's own terrestrial inputs (national coastline populations and tourism establishments), which is defined as 'boomerang' effect (Liubartseva et al., 2018).

When the resource users and public institutions are detached from co-management (i.e., sharing power and responsibilities) approach, the commercially dominated activities can run wild. Testament to this has taken place in coastal areas of Lefke in north Cyprus during copper mining ventures. The mining activities has left the coastal and the area landscape poisoned and scared for decades, which is still a no go zone. Onuaguluchi and Eren (2016, **p. 421) reported that 'decades of mineral exploration and processing produced huge deposits of toxic waste materials disposed in ponds across the area'. At the end, coastal areas have become the victims of their own attractiveness as 'the periphery of pleasure' (cf.** Schlüter, 2001). **'As seaside tourism became widespread … the proceedings of several congresses on ecological issues set forth the guidelines for the planning of tourism in the protected coastal areas'** (Schlüter, 2001, **p. 55). In a recent study,** Fantinato (2019) **reported that 'besides the loss and fragmentation of coastal dune areas, and the local extinction of plant and animal species, mass tourism has considerably affected remnant natural areas by thinning out vegetation caused by trampling and the diffusion of invasive and alien plant species' (p. 70).**

3. Conceptual framework

In this study, we argue the credibility of co-management as a framework in the context of planning processes where institutions' role is fundamental. This is because 'the humans we study have complex motivational structures and establish diverse private-for-profit, governmental, and community institutional arrangements that operate at multiple scales to generate productive and innovative as well as destructive and perverse outcomes (as cited in Ostrom, 2010, p. 641). Based on the review of existing and emerging models of planning in general and tourism planning in particular, it is plausible that co-management approach can become means to coalesce institutions and resource users around a shared goal (e.g., sustainable CPR and tourism) by mechanisms of power sharing and empowerment (Berkes et al., 2007; Plummer and Fennell, 2009).

Furthermore, co-management becomes the embodiment of three dynamics essential for its implementation and methodologically sound outcome: participatory planning (Fuldauer et al., 2019; Boukherroub et al., 2018), deliberative democracy (Hartz-Karp, 2005; Lehtonen, 2006), and transformative planning (Song, 2015; Albrechts, 2015a; Kennedy, 2009). While participation as the crux of co-management has become the mantra of environmental governance, its realization depends upon the activation of these three dynamic pillars.

3.1. Dynamic one. Participatory planning

In retrospect, participatory planning has evolved from its reductionist, empiricist, and expert dominated nature (i.e., under the rational planning slogan), which top-down planning decisions are made *for* people not necessarily *with* people. Shortfalls of such traditional approaches abound (Grybovych et al., 2011; Burns, 1999, 2004). Nowadays, planning decisions are shifting towards community-based and inclusiveness to gain credibility and produce a holistic outcome (Hanna, 2005; Burby, 2003), where the process is structured and implemented with stakeholders and communities. This evolved form of planning and its implementation has been discussed under various concepts including: resource management and valuing commons, citizens empowerment, community-based planning, integrative planning, balanced planning, and dialogic planning … etc. (Linnenluecke et al.,

2017; Albrecht, 2015, 2015a; Grybovich et al., 2011; Wolff, 2003; Burns, 1999; Song, 2015; Friedmann, 1989). Power sharing as a pillar of co-management also resonates with Wolff's (2003) "empowered community" and Lane's (1994) "community route to development."

However, the journey from rational to participative planning has been long, and we have learned the hard way (Burns, 1999). In the meantime, participative planning stands broadens the knowledge base of planning by requiring that 'everyone with a perceived stake needs to be identified and all stakeholders must be equally informed, listened to, and respected' (cf. Brand and Gaffikin, 2007, p. 290).

3.2. Dynamic two. Deliberative democracy

For co-management to take root and implemented towards sustainable tourism and protection of the commons, power sharing must be genuine. In other words, power sharing should be based on meaningful citizen participation and manifest in a process that 'should be clear and open, inclusive and inviting, representative, with the constant information flow and elements of social learning (Grybovych et al., 2011, p. 85). According to Hartz-Karp (2005), deliberative democracy transcends the representative democracy because the latter is inadequate to achieve true power sharing. Hence, for co-management to be realized, its process requires deliberation among institutions and resource users through the following manifesto:

Participants are representative of the population; a focus on thoroughly understanding the issues and their implications; serious consideration of differing viewpoints and values; a search for consensus and common ground; and the capacity to influence policy and decision-making (as sited in Grybovich et al., 2011, p. 86).

The role of institutions in this process is two-fold. First, they have to accept that "tourism" and "environment" are interlinked and interdependent; second, they need to shift their decision-making pattern from path-dependent to path-creation (Garud et al., 2010).

3.3. Dynamic three. Transformative planning

Transformative planning, in a way, is a dialectically evolved and a paradigm shift in public policy and planning approaches that had mainly dominated by market-based economic development and political democracy until the appearance of advocacy planning (Sanyal, 2018; Albrechts, 2015; Kennedy, 2009). Transformative planning, as a synthesis, was born to overcome the shortcomings of advocacy planning (Davidoff, 1965). Notwithstanding the moral standing of advocacy planning, it 'ignored power disparities and unconnected to social movements, [which] is often reduced to a technocratic practice' (Kennedy, 2009, p. 2). In this context, transformative planning shares a common ground with co-management of CPR and sustainable tourism, which the issue of power is clarified and settled. As Sanyal (2018, p. 183) pointed out 'globalization and growing concern for environmental degradation had posed new challenges to both conventional theories and the relatively static methods of regional inquiry'.

Therefore, the core goal of co-management, as a public policy, should be facilitating the development of institutions that bring out the best in humans (Ostrom, 2010; Burns, 2004). If we assume that tourism is composed of "business" and "impact" (Ritchie, 2004; Tribe, 1997), the impact aspect is highly relevant to the topic of a public good because it affects the society. See also Fig. 1. As a framework model.

4. Case of Northern Cyprus

Northern Cyprus is one-third of the island of Cyprus. This part of the island has been functioning as a *de facto* state since the partition of the island in 1974 (Alipour and Kilic, 2005). See also Fig. 2. Despite its lack of recognition by the world community, Northern Cyprus has been thriving socioeconomically because of tourism; especially educational tourism (Edu-tourists). From having only one technical college in 1979,
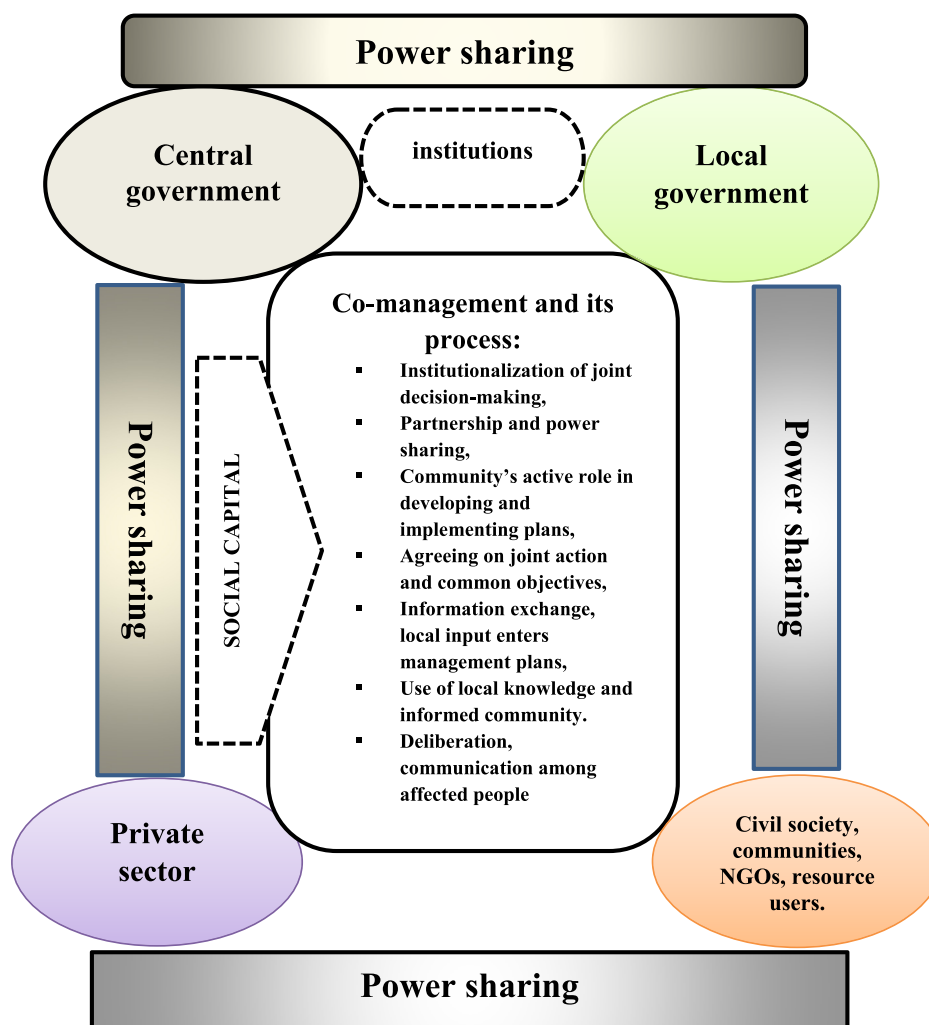
Fig. 1. Research concept model.

now it has 16 universities and 100,000.

International and national students (YÖDAK, 2018). With a population of 313,626, Northern Cyprus received 1,734,330 million tourists in 2017 (MTE, 2018). The ratio of net tourism income to the trade balance registered 43.4%, with a net tourism income for 2017 of nearly $800 million (MTE, 2018). Tourism sector employs over 12,000 people. See also Table 2.

The tourism profile of Northern Cyprus is dominated by mass tourism with spatial concentration on the coastal areas. With booming residential, educational, and 3S (sun, sea, and sand) tourism along with gambling establishments, the island faces numerous environmental challenges that exacerbated by the active construction sector.

Despite numerous attempts by EU institutions to provide guidelines and aid to improve the environmental conditions and overcome the challenges (Kara and Doratli, 2012; Sharpley, 2003), apathetic behavior towards safeguarding the environment has endured (Günsel, 2016). For instance, despite being highly conducive for harnessing solar energy (Günsel, 2016), little has been accomplished to develop renewable energy resources yet (Ouria and Sevinc, 2018). Regarding waste management, North Cyprus has been unable to come up with an implementable plan to manage solid waste. The disposal of sewer has remained problematic and archaic. Recycling and reuse projects remain inadequate. Litter and plastic waste cover the landscape. Landfills are managed inadequately and without any sign of a modern approach for their disposal. With the recent boom in construction and tourism, ample evidence exists in waste production and environmental problems

associated with these sectors (Celikag and Naimi, 2011). The urbanization process has been intensified without any credible urban planning agenda.

Urban growth and urban management are operating on a *lassie faire* approach with the absence of any sign of smart urban growth (Pasaogullari and Doratli, 2004).

5. Methods and materials

Our study method is within the qualitative domain, utilizing the three aforementioned dynamics to guide the research process: *participatory planning, deliberative democracy, and transformative planning*. To test the state of co-management in this case, an in-depth interview conducted to explore the presence or absence of those dynamics, which are foundations for co-management. This is because power sharing/empowerment cannot be realized unless those dynamics are in place and activated. Ran and Qi (2018) implied that, without power sharing, collaborative governance is an illusion, and they tied collaborative governance, co-management, and power sharing to protect resources.

6. Data collection

Data were collected through in-depth face-to-face interviews (both formal and informal) with a broad range of participants comprising public sector officials, tourism operators, NGOs, and academicians (Table 3). In all, 17 respondents participated in formal interviews.
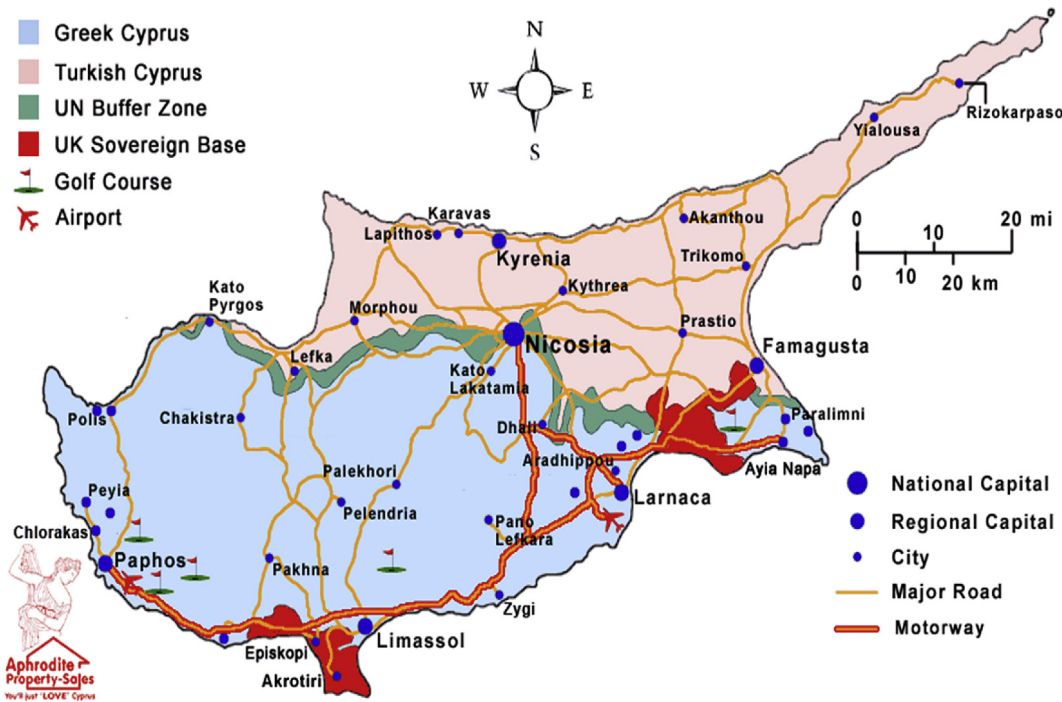
Fig. 2. Map of Northern Cyprus. Source: http://www.cyprus-property-sales-resales.com/North_Cyprus_Property_Article.htm.

About 15 semi-structured measurement instruments (interviews) were applied in a relaxed atmosphere (Table 4). The interview questions were prepared based on available literature on tourism, tourism and the environment, common pool resources (CPR), co-management, and sustainable development.

The interviewees were contacted by phone for their consent and to make an interview appointment. The interview questions were subjected to a pilot study among several colleagues, who are researchers in tourism and the environment, and the questions were.

Finalized after necessary alterations. The topics of co-management and power sharing were explained to the respondents prior to the interviews, thus allowing the respondents to provide detailed information on the topic. The data collection process began in May 2018 and lasted until August 2018. The interviews lasted one to several hours. Interviews were open ended to allow respondents to express themselves without limitation, thus promoting a flow of information (Farell, 2016). Purposive sampling, a non-probability form, was utilized: 'The goal of purposive sampling is to sample cases/participants in a strategic way, so that those sampled are relevant to the research questions that are

Table 3
Characteristics of the respondents.

Respondents position	Organization	Number
Biologist	Public sector university	1
Tourism officer	Ministry of tourism and environment.	2
Quasi-governmental official.	Member of eco-tourism association	2
Ecologist	Private sector university	1
Environmental officer	Public sector; environmental agency	1
Mayor	Local government; municipality	1
Village association member	Private sector; local consul	1
Member of NGO	Environmental NGOs	2
National planning officer	Public sector; national planning organization	2
Manager	Hotelier association	1
Manager	travel agents association	1
Developer	construction firm	1
Farmer	organic grower	1
Total		17

Table 2
Tourism movement.
Source: MTE (2018).

Arrivals from Turkey/monthly.1000.			International arrivals/monthly.1000.			Total arrivals/monthly.1000.		
2016	2017	%change	2016	2017	%change	2016	2017	%change
75,523	85,102	12,7	15,022	20,242	34.7	90,545	105.344	16.3
98,719	101.113	2.4	24,845	31.737	27.7	123.564	132.850	7.5
88.230	101.949	15,5	30.627	40.252	31,4	118.857	142.201	19,6
100.795	111.236	10,4	23.109	35.119	52,0	123.904	146.355	18,1
119.054	121.019	1,7	26.146	29.421	12,5	145.200	150.440	3,6
91.911	102.804	11,9	27.874	31.575	13,3	119.785	134.379	12,2
99.629	113.045	13,5	38.057	37.736	−0,8	137.686	150.781	9,5
98.014	105.107	7,2	40.049	37.593	−6,1	138.063	142.700	3,4
132.037	145.894	10,5	41.476	43.733	5,4	173.513	189.627	9,3
117.311	117.996	0,6	41.718	46.645	11,8	159.029	164.641	3,5
95.540	105.986	10,9	29.398	33.892	15,3	124.938	139.878	12,0
101.469	112.997	11,4	20.520	22.137	7,9	121.989	135.134	10,8
Total 1.218.232	Total 1.324.248	8,7	Total 358.841	Total 410.082	14,3	Total 1.577.073	Total 1.734.330	10,0

Table 4
Interview questions.

1.	What do you think about the relationships between environmental quality and tourism?
2.	What can be done to reconcile the conflict between environment and tourism?
3.	Whose responsibility is the environmental protection?
4.	What should be the government's role?
5.	Some believe environmental issues are exaggerated; do you believe this is the case?
6.	Do you think environmental issues require a collective approach?
7.	What specific action your institution regarding the environmental quality has taken?
8.	Do you have any idea about the concept of co-management?
9.	Do you have any idea about 'empowerment' and 'power sharing' as two instruments of co-management?
10.	Are you willing to share power with grass-root level people?
11.	How do you justify power sharing between state and resource users?
12.	In co-management, cooperation and collaboration across geographic space and institutions is essential; have you ever involved in this type of project?
13.	It is believed that institutions, like yours, can affect the ecological aspects negatively and positively; how would you make sure that your institution would play a positive role?
14.	Have you shared and exchanged information between your institution and public/resource users toward achieving some sort of environmental objective?
15.	What are the barriers to co-management?

being posed' (Bryman, 2012, p. 418).

7. Data analysis process

To achieve clear research findings, the data analysis and interpretations (see also Table 5) adhered to the canons of data analysis in qualitative research (Bryman, 2012; Flyvbjerg, 2006; Srivastava and Hopwood, 2009; Rabiee, 2004). The aim of this process is to make sense of the individual quotes by identifying and comparing the categories and making meaning that is grounded in the data (Strauss and Corbin, 1998). See also Fig. 3.

Nevertheless, we adhered to Charmaz (2000, p. 515) who stated that 'we grounded theorists code our emerging data as we collect it. . . . Unlike quantitative research that requires data to fit into *preconceived* standardized codes, the researcher's interpretations of data shape his or her emergent codes in grounded theory'. Regarding the sample size, Crouch and McKenzie (2006, p. 483) noted that 'since such a research project scrutinizes the dynamic qualities of a situation (rather than elucidating the proportionate relationships among its constituents), the issue of sample size - as well as representativeness - has little bearing on the project's basic logic'.

The compiled data were transcribed and the content analyzed multiple times, identifying 13 themes and 49 sub-themes. The themes and sub-themes were fed into MAXQDA12 software (https://www.maxqda.com/max12-tutorial/a-first-steps), which allows sub-themes to be placed into subsets of main themes. The author and co-author exchanged opinions constantly to ensure that all sub-themes were identified and implemented. (For transcribed and interpretation of responses refer to Appendix A. Table A). Open coding was applied to break down, examine, compare, conceptualize and categorize the data. 'This process of coding yields concepts, which are later to be grouped and turned into categories' (Bryman, 2012, p. 369). Focused coding complemented the process by emphasizing the most common codes and those that are considered most revealing; it also verifies the researcher's preconceptions about the topic (Charmaz, 2006).

To construct a framework for the status of co-management and power sharing, the extracted themes and sub-themes were reviewed in combination with interpretations of the interviews. To avoid any bias and prejudices on the researchers' side, reflexivity and bracketing (Tufford and Newman, 2012; Fischer, 2009) were practiced to enhance consistency of the data. To uphold the validity of the data and accuracy, the transcribed interviews were read verbatim.

8. Findings

Table five shows 13 themes and 49 sub-themes with the frequency of reiterated hits in the data set. The themes with most prevalent hits

included institutional failure, reliance on government, lack of commitment, role of NGOs, absence of power sharing, awareness of tourism and environment nexus, lack of laws and regulations, and apathy towards CPR protection.

Fig. 4 demonstrates the extracted framework or outcome model based on the themes and sub-themes; the implementation of three practical dynamics are presented as a pathway for constructing co-management. The process needs to be embedded in genuine power sharing between institutions and resource users. The framework also shows the relationships between the main elements of co-management. The dashed lines in the framework by no means undermine the significance of "power sharing" because power sharing becomes a platform for stakeholders to satisfactorily negotiate the specifics of co-management while emphasizing the equal status of resource users (Tipa and Welch, 2006).

The absence of co-management becomes clear when considering the 13 themes grounded in the data content. Except for the link between the awareness of tourism and the environment, this study revealed that co-management adoption is lacking in North Cyprus, and it has not been appreciated as a workable framework towards stewardships of the common pool resources. For instance, the dire situation in the coastal areas (Alipour et al., 2011), where the pressure is high due to sun, sea, and sand tourism, which is exacerbated by second home development, is visible. Coastal resources are the main attractions in north Cyprus and through co-management, a collective approach can be designed and implemented. According to Plummer and Fennell.

(2009, p. 150), 'co-management is a superior model to rational comprehensive models, which are usually dominated by a few stakeholders' (i.e., iron triangles. See Burby, 2003). Plummer and Fennell (2009, p. 150) claimed that 'protected areas and sustainable tourism provide a purposefully broad scope through which a myriad of associated elements is considered (e.g. local populations, common property resources)'. Study has also revealed that the role of institutions in initiating the process of co-management remained passive at best. Because public sector institutions, especially in this part of the world, are the bedrock of governance. As Plummer and Fennell (2009, p. 153) pointed out:

'Governance can be understood as… the whole of public as well as private interactions taken to solve societal problems and create societal opportunities. The cooperative management model (co-management) reflects this shift and involves the sharing of power and responsibility between government and local resource users'.

The interpretations of the data content has also revealed that, the institutions in north Cyprus can be characterized as 'path-dependent' (Saxonberg et al., 2013; Alipour and Kilic, 2005) at best as their socio-economic policies are insufficient to deal with the social and environmental complexities at the present and in the future; especially in

Table 5
Content analysis of transcribed data set.

Themes	Frequency of reiteration in the data set	Sub-themes
1. Institutional failure	15	- Institutions are locked in the past and they are responsible for every decision, - There is no an organic relationship between resource users and institutions, - There is no institutional collaboration, - Institutions lack ethical and moral capacity towards stewardship of the common pool resources.
2. Absence of empowerment	8	- We have never had the power to influence any decision, - We have never been in a position to make our voice to be heard, - There will never be a genuine power sharing in this country.
3. Reliance on government	12	- This whole issue is the responsibility of the government, - Government knows better and has the authority to do everything, - Government will never listen to grass root level people. - If the common pool resources are under stress, it is the government's fault.
4. Absence of public participation	5	- We have no idea how to participate in these processes, - In this country, no, such approach is unreal, - Even if there is a degree of participation, it is superficial and for the purpose of co-optation.
5. Lack of commitment	14	- Our commitment is not enough, unless there is an approach to translate it to real work, - Commitment lacks on all sides, - We do not have any motivation to commit ourselves.
6. Absence of power sharing	9	- This sounds utopian, - Never heard of it, - Government will never share power with ordinary people.
7. Shortage of social capital	8	- In the old time community members were more cooperative and helped each other; but now everyone is for itself, - NIMBYISM (individualism) has encroached upon the community, - People hardly involve in NGOs, - There are NGOs, but people are reluctant to join them.
8. Lack of awareness of co-management concept	3	- It is a form of cooperation, - There is no such mechanism, - We hardly collaborate on issues, - Government will not allow people to involve in any decision making process.
9. Role of NGOs	10	- There are NGOs around, but they have no power, - People do not trust NGOs, - NGOs pursue their own interest, - Environmental NGOs are powerless.
10. Awareness of tourism and environmental quality nexus	16	- Environmental quality is very important for tourism, - Tourism and environment must be harmonized, - Without environmental quality, tourism can suffer, - We are not caring for our environment, - There should be environmental education.
11. Lack of laws and regulation	12	- There should be more laws and regulations, - Government is responsible to pass more laws, - People are not following the rules, - Without law and regulation, everything can end in disarray.
12. Absence of social learning	4	- We have never involved in policy making process in true sense, - We are illiterate when it comes to issues that might affect our future, - There is no mechanism for us to involve and learn. - We think all the decisions should be taken by the government.
13. Apathy towards common pool resources	11	- Common pool resources are not protected, - Common pool resources are free; therefore, no one cares about them, - People do not appreciate the value of common pool resources. - People need to be educated about this issue.

relation to CPR and sustainable tourism. The study revealed that co-management approach in the case of north Cyprus has remained unrecognized as a practical mechanism to bring the communities into the processes of safeguarding and appreciating the common pool resources, which is fundamental for sustainable tourism.

9. Conclusion

This study has explored the challenges that the small island of North Cyprus face concerning valuing and protecting CPR, which form the foundation of sustainable tourism. The findings of the study revealed that a co-management framework is credible approach to overcome these challenges and sustain productive common resources. However, this approach is not possible without a shared agreement between resource users and the institutions (Lundmark et al., 2018). According to

Bouma (2015, p. 250),

> top-down approaches to ecosystem governance have not been very cost-effective as the costs of top-down enforcement of resource-use restrictions have been relatively high. This has been the case in water management, fisheries management, forest management, wetland management, nature conservation, etc.

This process, we argue, can result in strengthening social capital (Putnam, 2000), social learning (Berkes, 2009), and even identifying the violators (Ostrom, 1990). This study revealed that vulnerable environmental assets such as commons are not typically managed or planned through a sustainable strategy and are thus devoid of a pathway for rescue in the future. The results of the study also show that many fundamental flaws hamper the processes of realizing and implementing co-management. These flaws include institutional failures,
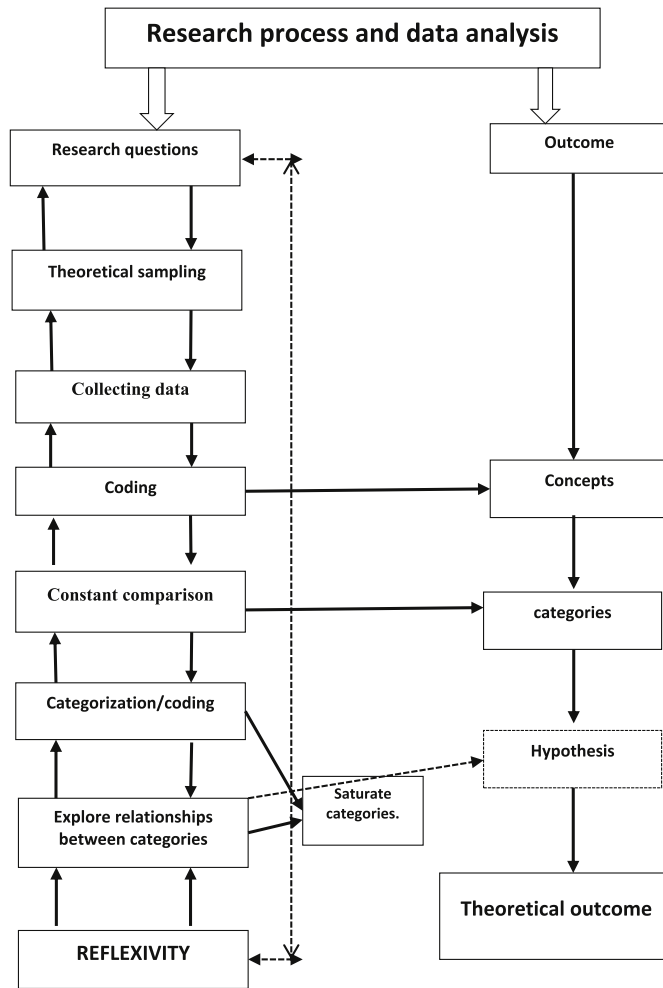
Research process and data analysis

Fig. 3. Data analysis process.

of North Cyprus, the approach to CPR management has perpetuated a path where resource users have remained the object of the development processes rather than becoming the subjects. If implemented through power sharing, the co-management approach can reverse the process. As Albrechts (2015a, p. 520) articulated, 'it [co-management] therefore combines the usual concept of coproduction in the provision of public goods and services needed and coproduction as a political strategy preparing citizens and grassroots organizations for a more substantive engagement with the political [system]'. This study also revealed that the institutions in North Cyprus remain on a locked-in (path-dependent) (Martin and Sunley, 2006) framework; however, for co-management to succeed, institutions need to embark upon "path-departing change" (Brooks, 2009) behavior by sharing the power with the resource users.

Finally, in the context of this study's theoretical framework (i.e., participatory planning, deliberative democracy, and transformative planning), the absence of co-management in the case of North Cyprus is highly plausible because none of the fundamental prerequisites have been settled as yet. Therefore, no clear path has been charted to save the CPR and implement sustainable tourism.

We consider that the environmental problems in North Cyprus, where the tourism sector is a dominant socio-economic activity, can be managed through implementing co-management. However, for co-management to be realized, fundamental prerequisites need to be put in place to implement power sharing (Nunan et al., 2015; Smith, 2012; Carlson and Berkes, 2005; Berkes, 2009), which forms the core of the process. The prerequisites are the three dynamics of stakeholder participation towards implementing co-management, which are essential for promoting effective stewardship of the environment as an essential resource for tourism. We assume there is a need to elevate co-management, as an alternative synthesize, to bring sustainable tourism and protection of CPR into a shared framework between institutions and resource users.

10. Theoretical and managerial implications

The findings of this study adds one more layer to the discussion on 'co-management' perspective as a relatively formidable strategic approach to management of CPR as well as tourism development processes where the latter is highly dependent on the quality of natural resources. Co-management processes are in line with the concepts of sustainable development (Burton, 1987), transformative planning (Linnenluecke et al., 2017; Kennedy, 2009), and collaborative planning (Berkes, 2009; Brand and Gafkkin, 2007). Knowing that tourism sector is a socio-economic force (Bianchi, 2018; Higgins-Desbiolles, 2006, 2008) that cannot be isolated from ecological systems of the destinations (Holden, 2005); therefore, a practical approach to their sustainable management is essential.

The findings of this empirical study have practical implications for the local authorities and policy makers in north Cyprus and similar socio-economic settings, as well as, for international decision-makers. In the meantime, co-management is a catalyst for boosting social capital (Hartz-Karp, 2005; Potnum, 2000) and social learning which eventually the latter reinforces the communities to welcome co-management.

11. Limitations and pathways for further research

One of the limitations of the present study is that a qualitative study was used to explore the views and perceptions of limited numbers of respondents. We suggest that future studies either apply a quantitative method to grassroots level respondents to gauge the state of co-management and model it into co-management framework with respect to the relevant constructs. A mixed method approach, we believe, might reveal further understandings of the absence of co-management and lack of appreciation and implementing of this approach.

Although this study revealed the main factors that hamper the implementation of co-management, future studies can focus on specific
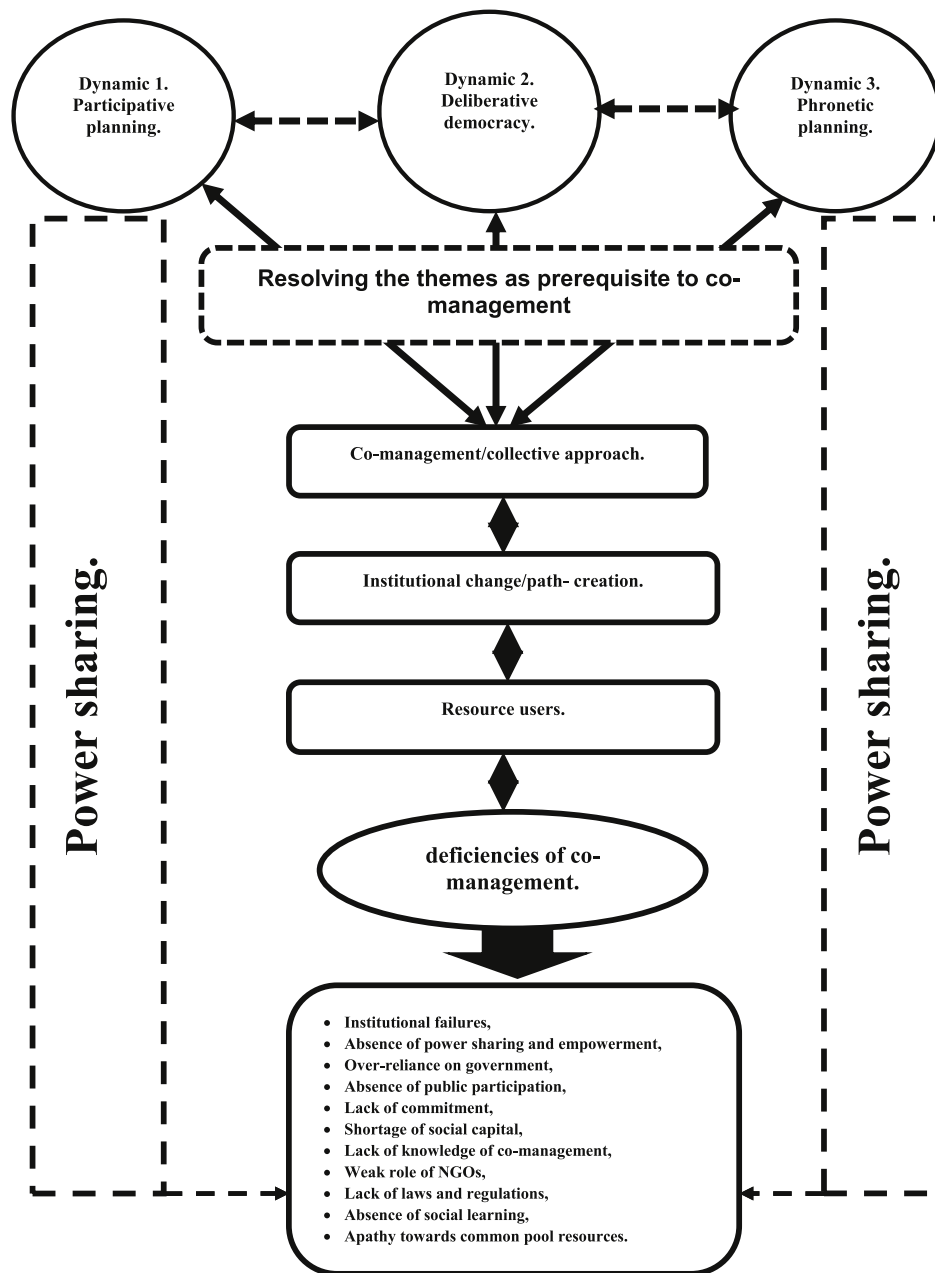
absence of empowerment, reliance and over expectation on the government, absence of public participation, lack of commitment, absence of power sharing, shortage of social capital, lack of knowledge and awareness of the concept of co-management, minimal role of NGOs, lack of updated laws and regulations, absence of social learning, and apathetic behavior towards CPR.

However, there is no magic bullet to operationalize co-management; co-management is a process with a clear purpose. Each of the aforementioned shortcomings can be overcome by implementing co-management using long and short-term strategies in proportion to each theme explored in this study (Table 5). Co-management can be considered a mode of governance that directs attention to cooperative management approaches that are participatory, interactive and oriented towards sharing power. This qualitative study also transcends the reductionist and linear approach to understanding the complex nature of tourism and CPR interdependencies in the context of sustainable tourism development and resource users' value systems (Bosselman et al., 1999; Butler, 1999). As a formidable approach towards valuing CPR (Ostrom, 1990, 2008, 2010; Berkes, 2004, 2009; Ran and Qi, 2018; Carlsson and Berkes, 2005; Lundmark et al., 2018; Hogg et al., 2013), co-management can 'understand stakeholders, their values, perceptions and visions prior to developing sustainable tourism development goals or implementing planning and management processes' (McDonald, 2009, p. 456).

The co-management approach to resource protection and sustainable tourism is a mechanism that brings the people into the process rather than retaining them as part of the product. However, in the case

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Fig. 4. Data analysis outcome model.

setting where common pool resources are fundamental fabric of daily life; and some of the main tourist resorts are also developed adjacent to common pool resources. For instance, rural and remote areas where environmental challenges and tourism activities are not necessarily integrated into a harmonious framework. At the end, sustainable tourism cannot be isolated from a sustainable ecosystem.

Ethical statement

This study was submitted to the Ethical Committee of Eastern Mediterranean University, Faculty of Tourism and approved by FTM.EMU.1979.452 code, and permission for the study was granted to the researchers.

Appendix B. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.ocecoaman.2019.104993.

Disclosure statement

No potential conflict of interest was reported by the authors.

Appendix A

Table A
Data analysis matrix.

Data set relevant to code: IF.	Theme 1. Institutional failure (IF).
'Public sector institutions have no moral responsibility toward resource protection; governmental institutions have encouraged projects, which were beneficial for some in the short term but catastrophic for the environment in the long-run. Their attitudes are very traditional and not compatible with present challenges. Without their [the institutions] commitment, we do not know how to approach these issues'. (Respondent 1)	Discussion/interpretation: Institutional failure was emphasized strongly regarding the institutions' lack of perceptivity involving people in the decision-making process (i.e., power sharing). Four sub-themes emerged from the content analysis of the data set-transcribed interviews (see Table 5). According to one respondent. This opinion is in accordance with arguments in existing literature, which claim that institutions need to break away from a path-dependent mindset and embark upon path-creation (Schienstock, 2007) to overcome the challenges of environmental issues, sustainable tourism, and CPR. As respondent 1 reflected, institutions are fixated on a linear and mechanistic mind set, which resist adapting to feedback. In this case, the attitude of institutions towards co-management is at odds with complex systems theory, which came about in response to deeper understandings of ecosystems in ecology, the environment, ecological economics, and social systems, and concerning the complex nature of tourism (Dredge, 2006).
data set relevant to code: AE	Theme 2. Absence of empowerment (AE).
'In this country, powerful people run the political structure, and there is no community participation in any type of policy. We vote for politicians and then they make all the decisions. Numerous times, we have witnessed bad projects, and we expect the government to do the best to protect everything. We have not learned how to influence the process. (Respondent 2)	Discussion/interpretation: For co-management to succeed, adopting a new governance is essential. However, institutions and informed community members need to break out of the box (Albrechts, 2015). Empowering the resource users is a radical approach to power sharing as an embodiment of co-management. Power sharing can harness a collective commitment by redistributing *power* as elaborated under the transformative planning (Kennedy, 2009). Transformative planning is an approach to situations in which the past reductionist and linear rational approach failed to involve stakeholders and communities in the process of dealing with CPR and protecting the resources for sustainable tourism. Top-down approaches to decision-making processes typically produce punitive attitudes towards communities (Kennedy, 2009); whereas, empowering people through a bottom-up approach can result in the concept of situation centered development (Barthelo et al., 2008) that reinforces the centrality of local participants and local knowledge by transforming their reality through implementing co-management.
Data set relevant to code: RG.	Theme 3. Reliance on government (RG).
The government has the authority and means to pass and enforce laws to protect the environment and monitor tourism. We are powerless and have no knowledge and means to achieve this. We can write letters and ask the government officials, but in the end, it is their decision what to do. In this country, the government has the final word. (Respondent 3)	Discussion/interpretation: Almost all of the respondents held the government responsible for protecting the CPR based on the sentiment that only the government has the power to achieve this. The respondents thus developed an attitude of powerlessness in this regard. The structural manifesto of the government is embedded in the public institutions, and the respondents' reliance on the government and public institutions is not without deed as governing CPR conferred upon public institutions through rules and power of access, use, management, exclusion, and transferability (Agrawal, 2001). However, the people or the government, which is embedded in resource-system factors, has not realized the importance of local groups. The resource users' reliance on the government is a self-inflicted powerlessness, a lack of knowledge of the value of decentralized control over divers' natural resources, and an absence of social learning (Robbins, 2000). Armitage et al. (2011) observed how a co-management framework in the Canadian Arctic paved the way for different modes of communication, deliberation, and social interaction without relying on the government.
Data set relevant to code: APP	Theme 4. Absence of public participation (APP).
Public participation in our country is almost unknown. We have not been taught or given the opportunity to participate in making decisions regarding these issues. We hear a lot about meetings, but we are never a part of those meetings. Sometimes community members may not be in favor of a project or a plan, so it only remains in the form of talking about it without any impact. (Respondent 3)	Discussion/interpretation: Existing literature has discussed extensively the significance of public participation in the management of natural resources and their sustainability (Zapata et al., 2011; Grybovych and Hafermann, 2010; Burby, 2003). However, some form of participation can be portrayed here and there, and certain groups can be co-opted into these processes in the community (Blackstock, 2005). For co-management to be successful and sustainable, it should be implemented in the context of power sharing as an ongoing process of engagement, community-led participation, and informed public judgement (Grybovych and Hafermann, 2010). The co-management process should implement and uplift the capacity of the public to influence policy and decision-making (Hartz-Karp, 2005).
Data set relevant to code: LC.	Theme 5. Lack of commitment (LC).
We are aware of the relationships between tourism and environmental resources; we know how important the quality of our natural resources for a sustainable tourism is. However, we have not seen any commitment by either the institutions or communities towards this. When all the decisions are taking place at the center, we feel alienated and isolated from the processes. Unfortunately, our people are not committed to these issues. (Respondent 4) .	Discussion/interpretation: Commitment is an activation of psychological processes that generates an effective behavior change strategy to respond to a pledge and adhere to an action towards achieving a social goal for the society. This has been the case in pledging commitment in the environmental domain and community recycling (Lakhorst et al., 2013; Katzev and Wang, 1994). Institutions can initiate persuasive communication through power sharing to commit the public to safeguard the CPR. There is ample evidence of pledges to motivate the public to commit to various social goals (e.g., recycling, be as sustainable as possible, energy conservation, environmental behavior in the household, and cooperation in social dilemmas; Bryce et al., 1997; Burn and Oskamp, 1986; Kerr and Kaufman-Gililand, 1994).
Data set relevant to code: PS.	Theme 6. Absence of power sharing (PS).
For government to share power with ordinary people like us is impossible. The government and their clients make most of the decisions. Ordinary people will never be able to have power to influence those decisions. To share power and have say about the policies sounds utopia. (Respondent 5)	Discussion/interpretation: Power sharing is at the heart of co-management and the major driving force towards the implementation of co-management approach; at the same time, it is the most challenging element (Nadasdy, 2003); however, it requires the institutions commitment, capacity building and knowledge sharing(as cited in Berkes, 2009). Tipa and Welch (2006)

Table A (*continued*)

	believed power sharing is highly linked to the process of collaboration, and collaboration 'urges a distribution of power among those whose interests are most keen. And/or, stakeholders must satisfactorily negotiate the specifics of a management power sharing agreement, thereby emphasizing the equal status of the parties to an agreement' (as cited in Tipa and Welch, 2006, p. 386).
iData set relevant to code: SSC. *In the old times, community members were caring for the community, and there was a culture of cooperation. Nowadays, everyone is for himself or herself. A degree of individualism has encroached upon community members. People hardly pay attention to the call by NGOs. The old community cohesiveness is gone. (Respondent 6)*	Theme 7. Shortage of social capital (SSC). *Discussion/interpretation:* Co-management requires cohesion and cooperation among the resource users and stakeholders. Social capital is an essential ingredient for collaboration and commitment to involve in complex undertakings such as sustainable tourism and protection of CPR. Ostrom (1996) observed that social capital could eliminate social divide and entice citizens to organize and undertake collective action. This process, Ostrom (1996) believed, can strengthen social capital in terms of how to work with each other and with public agencies. Social capital is then a potential asset for co-management. As Putnam (2001) stated in his seminal work on social capital, "the experience of success of coproduction [co-management] also encourages citizens to develop other horizontal relationships and social capital" (cf. Ostrom, 1996, p. 1083). Lehtonen (2004) emphasized the significance of synergy between social capital, institutions, and governance in the development process. Berkes (2009, p. 1694) stated that 'social capital is important, not only in indigenous co-management but also in all cases, because it is a prerequisite for collective action and social learning'.
Data set relevant to code: RNGOs: *The conflict between the present tourism system and environment, which is mass oriented, cannot be solved unless institutions are ready to involve NGOs. NGOs are aware of the situation and their involvement must be recognized. However, they are powerless when it comes to influencing policy. Unfortunately, one or two influential groups make most of the policies regarding tourism and environment; there is no genuine public participation. (Respondent 7).*	Theme 8. The role of NGOs (RNGOs). *Discussion/interpretation*: NGOs have a fundamental role in facilitating the cooperation towards sustainable tourism development on social, economic, and environmental grounds (Nepal, 2000): "They are morally obliged to take a tougher stand" (Lehtonen, 2004, p. 212) when it comes to the management of CPR. Nevertheless, the role of NGOs at the local, national, and international levels has become a driving force through the active mobilization of public support for environmental governance (Gemmill and Bamidele-Izu, 2002). NGOs can make a difference regarding issues involving resources and resource users. However, recognition of NGOs as the representatives of local grassroots people need to be established in the constitution of the institutions.
Data relevant to code: ATCPR. *CPR are neither protected nor appreciated because they are free for everyone and no one cares for them. The government does not care also. CPR are free; therefore, no one cares about them. Perhaps there should be some rules and regulations; however, people are also ill-educated to appreciate the resources we have. (Respondent 8)*	Theme 9. Apathy towards CPR (ATCPR) *Discussion/interpretation:* Hardin's (1968) seminal work (*Tragedy of the Commons*) explained resource users' apathetic behavior towards CPR. Although Hardin (1994) later agreed that commons are unmanaged, his *Tragedy of the Commons* became the indirect justification for apathetic encounters between resources and resource users. However, the darkness of the "tragedy" lifted when Ostrom (1990) showed that "repeated interactions among the users of a common resource [through a co-management framework] often allowed them to build institutions that could provide effective monitoring and discipline of free riders, thereby achieving efficient and sustainable use of the resource" (cf. Axelrod, 2010, p. 580). Ostrom's (1990) new framework of co-management allowed the realization of a management system and governance towards the effective use of resources through power sharing with the institutions.

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