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Assessing the State of ICZM in an Island Tourist Destination—Applying SESs and Ostrom's Collective Action Principles: A View from Coastal Communities

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Abstract: This paper aims to investigate the state of integrated coastal zone management (ICZM), which is justified as a strategy for managing coastal resources with respect to increasing pressures from tourism, farming, climate change, urbanization, population growth, etc. In the case of island states, the impact of tourism and second-home development is paramount. The use of coastal areas as commons and ICZM as a governance strategy have been established for a long time; however, the implementation of ICZM has remained a challenge due to the forces of global mass tourism and unsustainable resource use in island states. This study focused on views of the coastal communities in North Cyprus, who are in constant interaction with coastal ecosystems for their livelihood. For the analytical purpose of the study, 251 survey questionnaires were administered to eight communities along the coastal areas. Data analysis was conducted using descriptive statistical analysis with a post hoc test. Socio-ecological systems (SES) and Ostrom's collective action principles guided the study as the main theoretical frameworks. The study revealed that the ICZM strategy has been neglected and coastal communities are not invited to be involved in any form of ICZM. Furthermore, the study revealed the tourism development has been the major activity of the Anthropocene in coastal areas without a proactive coastal development strategy that is supposed to consider the vulnerability of coastal ecosystems. Practical and theoretical implications are also discussed.

Keywords: ICZM; coastal ecosystems; tourism; community; small island states; North Cyprus

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1. Introduction

Coastal ecosystems are one of the most productive yet highly threatened ecosystems in the world [1–3]. The world's coastal zones represent some of the most diverse and productive ecological and social systems. About two-thirds of the world's population live within 60 km of the coast [4]. Gerhartz-Abraham et al. [5] (p. 69), highlighted that 'as a result of a burgeoning population, human activities such as fishing, aqua-culture, oil and gas exploitation, tourism, agriculture, coastal development and shipping continue to put considerable pressure on the world's ocean and coastal environment'.

Communities in different coastal regions are at the forefront of coastal environments, which are affected by coastal vulnerability to tourism, climate change, erosion, population growth, and overall development. However, in the case of island states, mass tourism as their economic backbone applies further pressure to limited coastal zones and surrounding communities. 'In addition to having limited resources, in the island states, the economic and social activities tend to be concentrated in coastal areas and interconnectivity between the economic, environmental, social, cultural and political spheres is highly pervasive' [6] (p. 1).

Since such communities are the first ones impacted by changes in coastal ecosystems because of tourism, it is imperative to explore their views and understand the challenges

they face in order to facilitate a possible integration and harmonious interaction between anthropogenic activities and the sustenance of communities. Therefore, plans to support coastal change governance in the context of ICZM and collective action are critical before it is too late [7,8].

However, because of the immediate return of benefits from mass tourism, especially 3S (sun, sea, and sand) tourism [9], which is dependent on coastal areas, the long-term management and protection of coastal areas have been compromised in various destinations and more so in island states [10–13]. While mass tourism has been the focus, notwithstanding its measurable negative impacts, alternative tourism, which 'improves local conditions-be it environmental, cultural or socio-economic' [14] (p. 331), has been neglected. Furthermore, coastal urbanization has also exacerbated the pressure on coastal ecosystems. 'Worldwide there are 23 megacities with populations of over 10 million people. Of these, 16 are in the coastal zone' [13] (p. 86). Coastal tourism, as a dominant form of global mass tourism [15], applies various pressures on coastal zones through accommodation, beach front strip cities, hotels, condominiums, transportation, cruise ships, and various forms of pollutions that are reminiscent of Davenport and Davenport's [16] previous assertion that 'tourism is now the largest single economic sector in the World. Impacts of leisure transport and tourism on the coastal environment have considerably increased (and are currently scheduled to continue increasing) in a non-linear fashion and are extremely difficult to manage or limit' [13] (pp. 94–95).

It is well established that coastal regions are socio-ecological systems (SESs) [17,18] that are shaped and structured by the environment, society, and economic development in the context of the Anthropocene; 'the Anthropocene argument is substantiated by the presence of climate change in addition to myriad other attributes of environmental change and degradation on an unprecedented scale' [19] (p. 1). In the meantime, tourism's long-term sustainability depends on the harmonious interaction and balanced utility of SESs where the community's future is at stake. 'SESs as an interdependent and co-evolutionary [process], in which social and ecological domains are linked by ecological knowledge, governance arrangements, and ecosystem services' [20] (p. 2), cannot be separated from the dynamism of human and habitat.

Coastal zone management, which is also known as integrated coastal zone management (ICZM), has been established since the 1960s as part of Agenda 21 to show nations how to manage and protect the coastal zones in a sustainable manner [21]. The question is: to what extent do destinations adhere to the principles of ICZM? This study aims to investigate the case of North Cyprus where the coast is the main resource and is highly vulnerable to the impacts of mass tourism among many other threats. For the purpose of this study, we targeted several communities who are in constant interaction with the coastal regions and resources. We assumed that the targeted communities are sources of knowledge concerning ICZM and its implementation. At the same time, they are the main actors in the creation of institutions for collaboration towards the collective action that is essential for the implementation of ICZM [22,23].

The impact of tourism development on the immediate communities has been addressed in the literature; however, much of the earlier literature does not incorporate the local social structures, values, and environmental capacities of communities in the context of a larger socio-ecological system. Movono et al. [24] (p. 452) highlighted that 'as a result, only a few tourism studies have explored the intricate connections between people and their environment, and even fewer have questioned how these connections may be affected as a society that adapts to tourism development'. Moreover, with the continuation of human migration towards coastal zones and the growing trend of coastal tourism, sustainability of coastal areas has become a complex and challenging task. Therefore, any strategic undertaking must consider social, economic, institutional, biophysical, and legal dimensions in order to achieve the goals of sustainability [25]. Unfortunately, notwithstanding the establishment of ICZM over the last several decades, successful strategies have remained a rarity in most of the communities that are dependent on coastal resources. We hope this study will provide a new strategic direction for coastal tourism in general and island

coastal management in particular in a vigorous and sustainable manner by departing from a myopic view of tourism development [26].

2. Conceptualization

The following questions frame the conceptual discourse and rational that underlies this study:

- Has ICZM been understood and integrated into the coastal zones in the case of North Cyprus?
- Has there been any effort to facilitate communities to be involved in any form of ICZM in order to uphold the principles of a bottom-up approach in the protection of the commons?
- Are the coastal communities considered essential stakeholders, who should be part of collective approach to implementation of ICZM?

There are two distinct but interrelated perspectives that rationalize and support coastal communities' active involvement in the implementation of ICZM for the sustainability and protection of coastal areas as commons. First, protection of the commons is equated with resource management through collective action that legitimizes the active involvement of community members [27–29]. Second, collective action is a process in the context of 'collaborative management' or 'co-management', which has been defined as 'the sharing of power and responsibility between the government and local resource users' [28] (p. 66).

We employed the socio-ecological system (SES) paradigm, as well as Ostrom's [30] collective action principles to guide our study, which are also conducive for discursive argument regarding the instrumentality of ICZM. It is highly plausible that 'collective action', 'collaboration', and 'co-management' can be conflated and embedded in the SESs, which is generally accepted by scholars in this field [8,20,23,31]. In the meantime, ICZM as an institutional and technocratic practice should promote stewardship and resource efficiency by allowing stakeholders and the community at large to be involved and to have easy access/opportunity to relevant coastal information and education [32]. For a conceptual model of the study, see Figure 1.

2.1. Socio-Ecological Systems (SESs)

It has been over two decades since Berkes et al. [33] applied the SES framework to analyze resilience, adaptability, and sustainability in local resource management systems with the aim of bringing local communities to the center stage of the management of common resources [31,34]. In other words, there is a need for basic strategies that shift 'from our contract-based society toward a world order based on 'natural' communities' [35] (p. 524). Young et al. [31] rightfully noted that in our globalized world interconnectedness of human and environment embodies SESs, which should guide every aspect of development in order not to compromise the resilience/adaptability of this system with its vulnerability.

Berkes et al. [33] in their definition of SESs believed that social-ecological systems are linked systems of people and nature, emphasizing that humans must be seen as a part of, not apart from, nature. A comprehensive and inclusive theorization of the SES framework was elaborated by Redman et al. [36] (p. 162), who believe in two fundamental dimensions. The first, which is better understood, 'is ecological drivers, such as geologic setting, climate and its variation, patterns of primary productivity, hydrologic processes, and other bio-geophysical factors'. The second, which brings the communities into the equation, 'is less-studied class of variables includes drivers directly associated with human activities, such as land-use change, the introduction of exotic species, and the use of resources' [36] (pp. 162–163). In this context, Redman et al. [36] (p. 163) offers a further elaboration of SESs by conflating social variables and ecological factors in a complex system. They note that an SES is:

> *'(i) A coherent system of biophysical and social factors that regularly interact in a resilient, sustained manner; (ii) a system that is defined at several spatial, temporal, and organizational scales, which may be hierarchically linked; (iii) a set of critical resources (natural, socioeconomic, and cultural) whose flow and use is regulated by a combination*

of ecological and social systems; and; (v) a perpetually dynamic, complex system with continuous adaptation' [36] (p. 163).

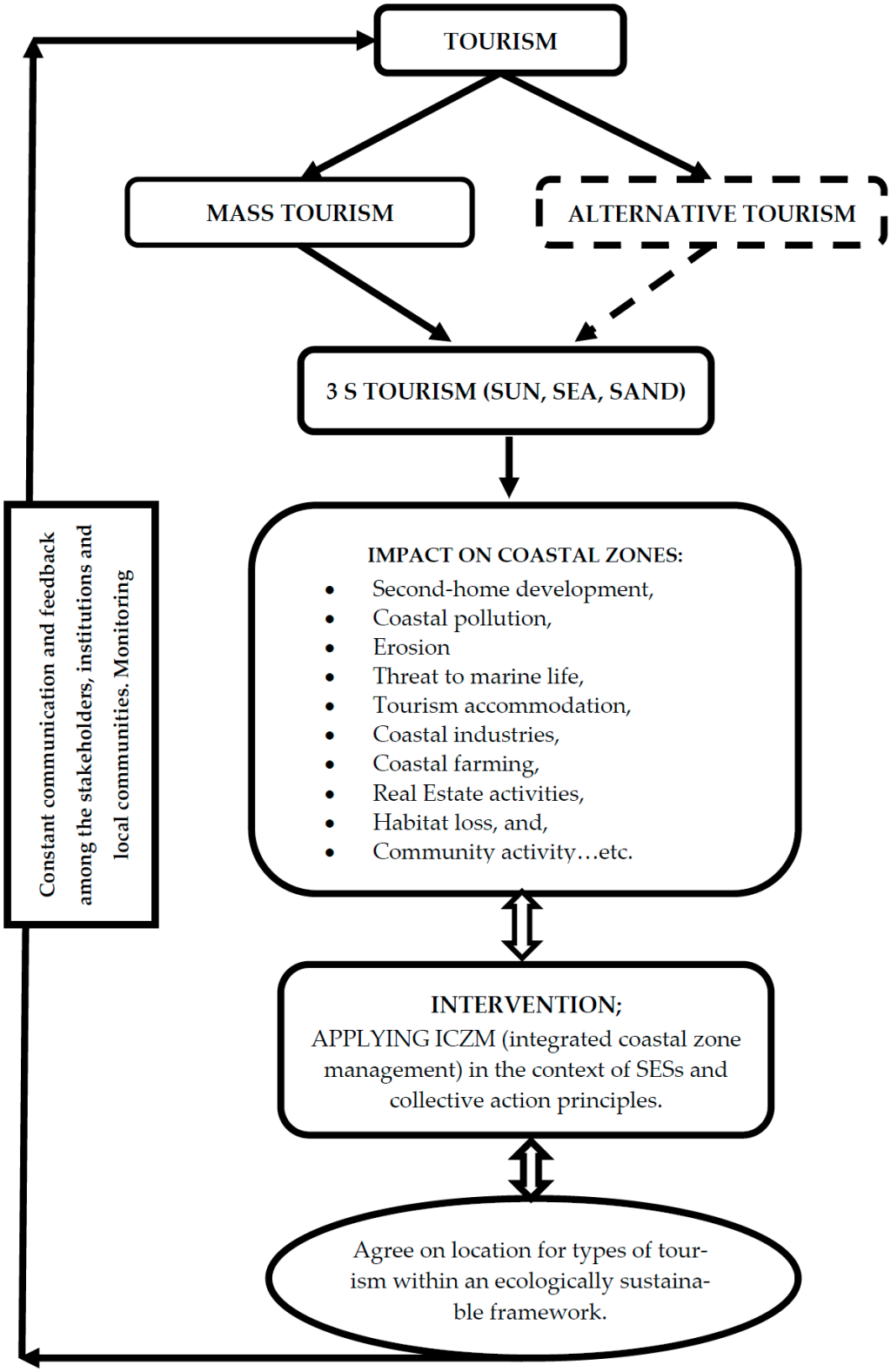

Figure 1. Conceptual model of the study.

It should be underscored that social institutions, social cycles, and social order must be recognized and embedded in strategies by communities in order to confront the challenges of managing common resources (e.g., coastal zones). Social institutions resonate with collective action; social cycles resonate with the allocation of human activity temporally, and social order represents cultural patterns (e.g., social capital) [37] and materializes the interaction among community members [17,23,36,38].

By integrating ecological components along with the activation of local citizens (i.e., communities) from the very beginning of ICZM, the SES framework will become a catalyst for community members to participate in and take ownership of the planning processes of coastal zones as their own common resources. For integrated SESs, See Figure 2.

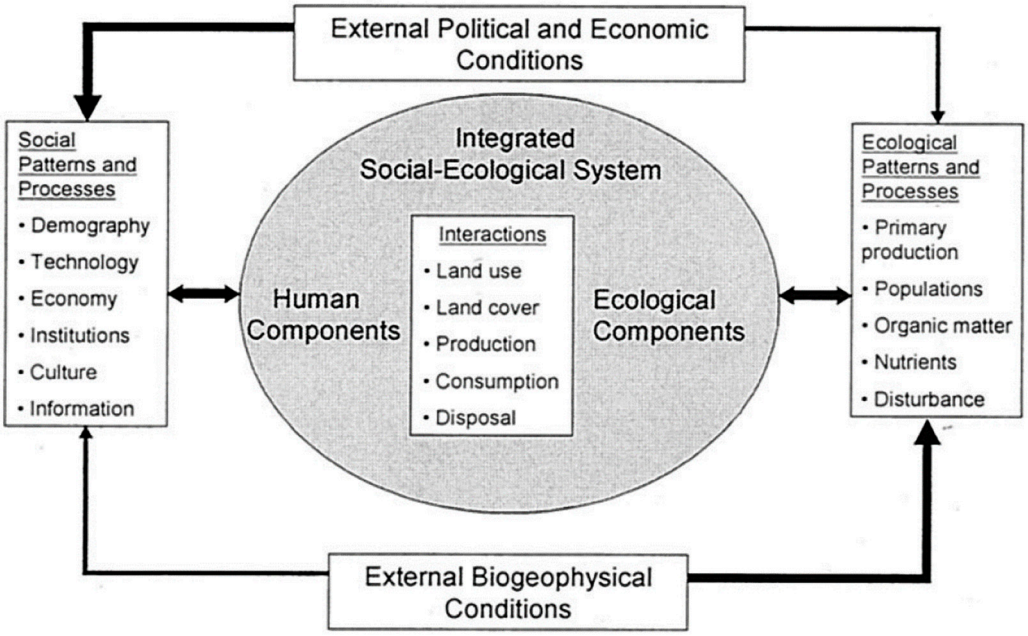

Figure 2. Conceptual framework for long-term investigation of social-ecological systems (SES). Source: Redman et al. [36] (p. 164).

The tourism impact, especially on the environment, has revolved around the negative and positive impacts of tourism on the environment [39,40]. However, in the context of the SES framework, people (i.e., communities) who are settled in coastal areas are involved in the transformation of the physical environment into a landscape that, in the context of environmental psychology, develops into their living environment, place attachment, and place identity [41]. Therefore, we argue that the connection between community members and coastal environment transcends the simplistic negative and positive impacts. Chen [39] went further by adding ecosystem service valuation (ESV) to the conventional environmental impact assessment (EIA), which is in line with the SES framework.

2.2. Ostrom's Collective Action Principles

Ostrom [23] believed 'if the initial set of rules established by the users, or by a government, are not congruent with local conditions, the long-term sustainability may not be achieved'. In the context of SESs, the long-term sustainability of coastal resources depends on approaches that match 'the attributes of the resource system, resource units, and users' [23] (p. 421). The role of communities in safeguarding the coastal zones cannot take place in vacuum. The capacity enhancement [42–44] and empowerment of communities [37,45] are paramount to achieve collective action towards managing common resources.

We employed Ostrom's collective action principles as another theoretical framework for two reasons. First, it is highly conducive to the SES context, which brings together formal and informal institutions, as well as the communities that are affected by and have

benefited from common resources management [46]. Second, Ostrom's [30] collective action principles—as an evolved version of Olson's theory in 1965 of 'collective action'—enhance our knowledge of the complexity of SESs [47]. Nevertheless, Ostrom [30] 'identified a set of collective action principles that have proved essential for successful collective processes and outcomes in natural resource management. These principles help us to better understand how groups manage common property resources by means of well-established rules, laws and relational processes for formal and informal institutions' [48] (p. 574). In a way, the above statement complements Olson's logic of collective action theory [47].

Furthermore, Cox et al. [49] conducted an analytical evaluation of over 90 studies of Ostrom's collective action principles and provided empirical evidence that supports their validity and workability in relation to the governance of SESs for the Anthropocene. Nonetheless, Ostrom's [30] collective action principles manifest their validity and practicality by bringing the institutional approach to collective action in the context of SESs or coupled human-environment systems [31]. The further manifestation of Ostrom's collective action is reflected in the co-productive activity of the citizens that requires an active role of the government in empowering community members. For instance, there is evidence of successful collective action and positive co-production realized in the case of Brazil in relation to urban services [37].

Lastly, Ostrom's collective action principles not only offer an enlightening navigation through SESs; they are also a universal approach to the management of common pool resources (e.g., coastal zones). As Acheson [50] ardently argued, Ostrom 'is concerned with managing the natural resources of the world, especially in Third World countries. Many of the systems devised to control these resources are informal and are managed by people at the local level. Ostrom shows that many of these systems can work quite well' (p, 320). Evidence of the workability of her approach has been examined in Nepal, the Philippines, the Los Angeles basin, India, Asia, Africa, Latin America, North America, and Canada [43,51–53]. See also Table 1.

Table 1. Collective action principles as an analytical lens.

Principle	Description
Clearly defined boundaries.	Demarcate and define the geographical boundary of coastal zones as common pool resources, including the communities that are in constant interaction with the coast.
Congruence between resource environment (i.e., the coast) and its governance structure and rules.	Governance structure and rules must be specific and clear to the coastal communities, tourism sector, and other investors, especially real estate and second home developers. 'The rules and structures must evolve as the status of the resource and the resource environment change' [48] (p. 576), due to climate change, population growth, and ecological priorities.
Decisions via collective choice arrangements.	'All voices matter and should be regarded for a generally satisfactory and accepted decision. Such collective choice arrangement processes should be well known by all stakeholders' [48] because 'resilience, vulnerability, and adaptability commonly are used at all spatial and temporal levels in a dynamic structure, whether societal, environmental, or socio-ecological. They may refer to capacities of the system as a whole, but also to those of anyone (or more) of its components, even down to the level of the individual actor' [31] (p. 306).

Table 1. *Cont.*

Principle	Description
Effective monitoring.	A monitoring system, in the context of ICZM, of the activities of stakeholders, including tourism sector and real estate firms, as well as the behavior of the communities. Involving NGOs, media, and universities in upholding transparency of coastal activities with a feedback mechanism. Instrumentality of ICZM is logical as it aims 'to improve the quality of life of the communities that depend on coastal resources as well as providing for needed development (particularly coastal dependent development-[tourism]) while maintaining the biological diversity and productivity of coastal ecosystems' [21] (p. 3).
Graduated sanctions and punishments for violations.	All acts that go contrary to, or threaten the sustainability of, coastal zones and the aims of ICZM must be spelt out and publicly available to all stakeholders. Sanctions should be weighed against violators including community members, real estate firms, developers, and individual properties in and around the coastal areas [54,55].
Low-cost and easy-to-access conflict resolution mechanism.	'Stakeholders should be aware of where and how to channel grievances or conflicts. The resolution mechanism should be transparent and handled by a trusted body with no conflict of interest. All grievances must be well documented' [48] (p. 575). The role of NGOs is significant in conflict resolution mechanisms [56,57].
Right of resource appropriators to self-govern.	Formal institutions should involve in ICZM without excluding or marginalizing stakeholders, especially coastal communities. Centralized institutions are not necessarily the right mechanism to monitor and control misuse of commons (i.e., remote governance). A decentralized mechanism is conducive to making communities 'resource watchers' [48,58,59].
Organized rules and enforcement via nested enterprises.	Coastal communities should be considered one institutional and official level of the governmental system in a decentralized context. Vertical and horizontal communication and collaboration should take place at community, district, local, regional, and national levels. This can be possible in the context of ICZM and principles of protection of the commons [46,60].

Source: adopted from Saeed [48], and Ostrom [30].

As exhibited in Table 1, Ostrom's eight principles have been established as a comprehensive approach to common pool resources (CPR) protection, which is an effective approach that can be easily embedded in ICZM since ICZM is a flexible and evolving approach with a focus on coastal zones management. In a way, Ostrom's principles can reinforce ICZM's agenda as it highlights the significance of community, the conflation of formal and informal institutions, the role of NGOs, utilizing local knowledge of coastal ecology, and the environmental monitoring of coastal resources.

2.3. ICZM

ICZM is defined as 'a multidisciplinary process that unites levels of government and the community, science and management, sectoral and public interests in preparing and implementing a program for the protection and the sustainable development of coastal resources and environments. The overall goal of ICZM is to improve the quality of life of the communities that depend on coastal resources, as well as, providing for needed development (particularly coastal dependent development) while maintaining the biological diversity and productivity of coastal ecosystems in order to achieve and maintain

desired functional and/or, quality levels of coastal systems, as well as, to reduce the costs associated with coastal hazards to acceptable levels' [21] (pp. 3–4).

The history and practice of integrated coastal zone management (ICZM) goes back to 1965. At the early stages of application of ICZM, its practice was confined to Australia, the United States, and United Nations Environmental program (UNEP). However, by the mid-eighties, it gained validity as a global practice, and rhetorically, it has become a mechanism for sustainable development. Sorensen [21] (p. 2) highlighted that 'in recent years ICZM has become the umbrella term for the various names for the practice, including: coastal zone management, integrated coastal zone management (and/or planning), coastal area management (and/or planning), and integrated coastal resources management (and/or planning)'.

Through the evolution of ICZM, its profile and practice embraced the motto of sustainability by perceiving 'value of participation in ensuring accountability, local democracy and stakeholder "buy–in" is now so well entrenched and inclusive participatory coastal management is the prevailing coastal decision-making paradigm in much of the world' [61] (p. 942).

Nevertheless, ICZM is not a 'plan' in which "one size fits all". Rather, it should be adaptive to the particularity of socio-ecological systems of the given case. Therefore:

> *'True adaptive management is one where the environment itself is the intended beneficiary. Its goal is always to improve management in the face of uncertainty by increasing the knowledge base. This knowledge is then fed back into the policy-making process which adapts; accordingly, it is management policy that adapts, not the nuts and bolts of a specific activity or project'* [61] (p. 947).

An adaptive ICZM—especially in an island state destination where most of the coastal areas are bearing the characteristics of rurality and small communities—needs to avoid the errors of embedding ICZM in their tourism planning system without adapting it to the local people's knowledge and the potential inputs of local communities. For instance, ICZM for the case of North Cyprus should truly understand the specificities and complexities of coastal communities in the context of SESs. Furthermore, to shield community participation and involvement against the impediments of power relations, which are part of the heterogeneity of the community [62,63], the collective action principles advocated by Ostrom [30] are indispensable ingredients for shielding community empowerment from vested interests [42,64].

Nowadays, ICZM has become an international practice to combat the adverse impacts of 'coastal tourism, mariculture, urban expansion, second-home subdivisions, coastal forestry, agricultural practices in coastal watersheds, dredging and dredge spoil disposal, sewage treatment, and oil and gas exploitation' [61] (pp. 18–19).

However, in the case of island states where coastal areas are the main tourism resources, ICZM becomes the paramount institutional practice with the formidable agency housed in tourism planning institutions. In this process, ICZM is established as a legal entity and its 'implementation and monitoring alternatives should be explored so that suitable mechanisms can be integrated into the general process' [65] (p. 33). To integrate and uphold the principles of SESs and the collective action approach, an agreement on the goals of ICZM at local, regional, and national levels should be adhered to as the infrastructure of ICZM. See also Figure 3.

We assumed the participation of communities in ICZM not only as a delivery mechanism in itself, but also as an effective mechanism for decision making along with competent authorities. In a complex environment such as coastal zones, ICZM can be a practical and strategic guideline for problem recognition, planning, implementation, community involvement, social learning, and monitoring, as well as to ameliorate and manage conflict that is associated with such complex processes [66].

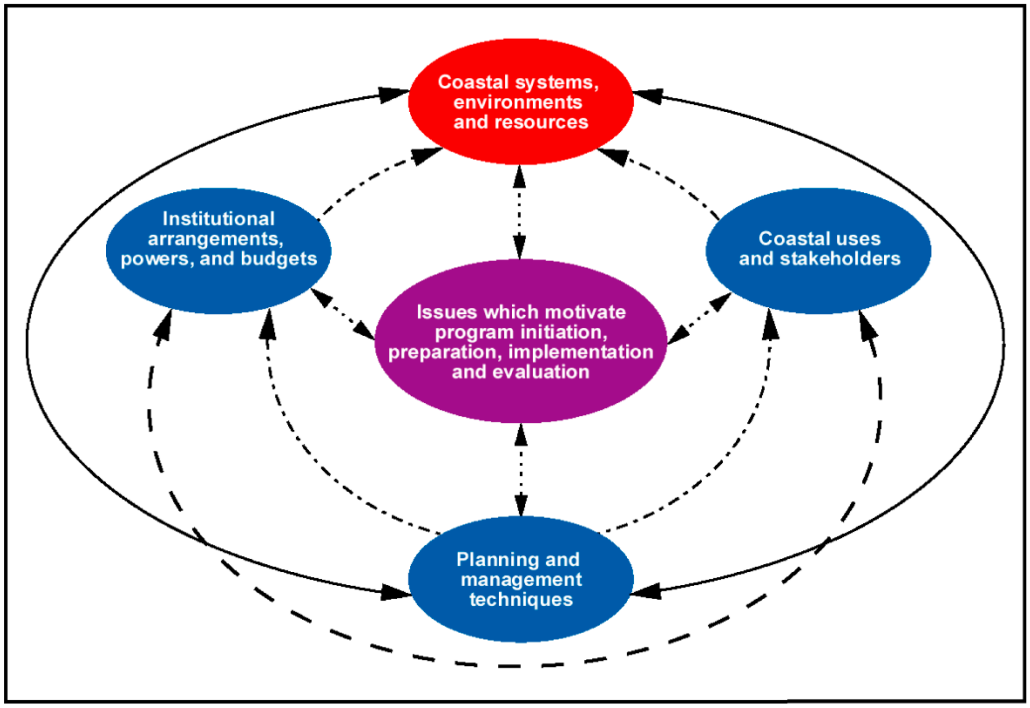

Figure 3. Elements involved in managing coastal resources and environment. Source: Sorensen [21] (p. 4).

2.4. ICZM and Tourism Nexus

The devastating impact of mass tourism on coastal areas and coastal communities is a foregone conclusion [67]. In particular, the pressure of 3S (sun, sea, and sand) tourism on coastal zones and coastal resources has been highlighted by numerous studies [3,10,66,68–71].

The impact of tourism in coastal zones has been witnessed and registered in relation to water consumption, energy consumption, declining local fish stock, competition with the local community, pollution, inadequate swage infrastructure, damage to sensitive ecosystems, development of eutrophic conditions and algal blooms, undesirable aesthetics, etc. [4,67,72].

One of the main areas of contention between pro-sustainable tourism and tourism business-oriented marketers is the challenge of carrying capacity (CC). Tourism carrying capacity (TCC) is 'the maximum number of people that may visit a tourist destination at the same time, without causing destruction of the physical, economic, and sociocultural environment and an unacceptable decrease in the quality of visitors satisfaction' [69] (p. 1). While sustainable tourism supporters are advocating CC analysis and its implementation through planning, tourism marketers are aiming for an increase in the number of visitors without paying any heed to the ramifications of CC [73].

In the case of island states, the application of CC is more critical; islands are highly vulnerable and sensitive due to their small physical and environmental capacity as destinations for coastal and beach tourism, which is a dominant mode of tourism globally [74]. The carrying capacity analysis, which is effective in smaller tourism sites [75], can be complemented by the Tourism Opportunity Spectrum (TOS) in the context of ICZM. The TOS considers 'the interactions among tourists, hosts and the management; and the availability of tourism infrastructure and facilities' [76] (p. 248). Moreover, 'over tourism' has also become a hotly debated topic as numerous destinations are negatively affected by increased numbers of tourists that surpass the carrying capacity (CC) of some of popular destinations including Venice, Amsterdam, Barcelona, and Bali, just to name a few [77–79].

It is argued that over-tourism and the lack of a sustainable approach to coastal tourism development exhibits a disconnection from the principles of the SES framework that is also coupled with the absence of collective action principles [80–82]. Glaser et al. [2] (p. 1) believe that 'understanding island-specific human–ecosystem links—or small-island SESs—is a crucial component of enabling sustainability of related livelihoods.

This is the case, as SESs has been understood 'as interdependent and coevolutionary, in which social and ecological domains are linked by ecological knowledge, governance arrangements, and ecosystem services' [20] (p. 3).

The SESs and collective action principles provide a strategic foundation for incorporating coastal communities in a new creative path towards the sustainable management of coastal resources that are threatened by mass tourism development. To achieve this, the institutionalization of ICZM should operate not necessarily as a solely technocratic practice but as an instrument of reconciling and restructuring a creative coastal management system with communities at its center stage. The road to this goal is not easy due to the nature of the context (i.e., the forces of power relations and the existence of diverse actors); however, it can be durable and productive if the socio-political environment respects the SESs and collective action principles. In the end, the implementation of ICZM should be perceived as a break from traditional biodiversity protection on two fronts—first, by reconciling tourism development with coastal integrity, and second, by engaging community participation in the whole process as a guarantee for the role of the grassroots in the conservation and management of coastal resources [42].

3. Materials and Methods

3.1. Study Setting

At 420.55 km in length, the coast of North Cyprus is a dominant ecosystem. From a regional and socio-economic perspective, the coast, as a resource, plays significant role in the livelihood of the people [83]. Many local communities are economically dependent on marine and coastal resources that are the backbone of tourism in North Cyprus. The majority of the population of 326,000 lives in close proximity to the coast including the three main cities of Kyrenia, Gazimagusa, and Guzelyurt. A concentration of population along shorelines and coastal regions is not limited to island states. Small and Nicholls [84,85] (p. 584) highlighted that 'it is well known that the land areas adjacent to the world's shorelines are associated with large and growing concentrations of human population, settlements and socioeconomic activities, including many of the world's large cities. This implies a high exposure to hazards and significant human-induced changes to a range of natural processes'.

With an area of 3355 Km^2, North Cyprus has become an attractive Sun, Sea, and Sand (3S) tourism destination in the Eastern Mediterranean Region [85]. See also Figure 4. The number of tourist arrivals in North Cyprus reached 2,065,363 million in 2019, which generated 969.6 million USD. The ratio of net tourism income to trade balance amounted to 65.0 percent. The number of employees in the tourism sector registered at 18,988 [86]. With over a 26,000-bed capacity and 153 tourism establishments, most of the five and four-star hotels are located in and around the shorelines by the prime beaches [86]. During the past decade numerous second-home complexes have sprung up along the beaches, and the construction boom, notwithstanding the pandemic, is still active and growing [87] (city planning officials, personal communication, September 2021). See also Table 2.

The study focused on eight communities/villages: Bafra, Kumyali, Kaleburnu, Dipkarpaz, Yenierenkoy, Balalan, Kapkica, and Tatlisu (refer to Figure 4). These sites were selected based on three criteria: first, they are spatially located in proximity to the coastal areas. This is significant in terms of 'everyday life orientations and how these could be used to develop mutual understandings of these areas as commons' [88] (p. 494). Secondly, community members/residents are in constant interaction with the coastal resources and its environments. Third, community members possess local knowledge and useful insights about the changes and developments that have taken place in coastal areas. It is assumed 'that local users and participants have time- and place-specific knowledge, and the ability to form regulatory collective institutions with enforcement mechanisms' (as cited in [88] (p. 499)). See also Table 3.

Figure 4. Map of North Cyprus (Turkish administered area) with indicated surveyed communities (Bafra, Kumyali, Kaleburnu, Dipkarpaz, Yenierenkoy, Balalan, Kapkica, and Tatlisu).

Table 2. Tourism movement in North Cyprus.

Year / Monthly Arrivals	2016	2017	2018	2019
January	108.161	122.291	139.359	123.287
February	147.520	155.236	168.989	154.780
March	138.498	162.149	167.829	150.903
April	143.323	167.797	182.009	169.809
May	168.303	174.667	168.254	154.725
June	143.658	157.196	162.914	174.626
July	168.482	189.322	193.970	188.065
August	173.712	186.160	189.790	201.509
September	203.198	221.587	222.430	224.780
October	181.529	189.854	179.978	203.548
November	144.593	161.796	158.688	171.546
December	141.781	156.959	145.754	151.414
Total	1862.558	2045.014	2079.961	2068.992

Source: MTE [86].

Table 3. Surveyed coastal villages.

No.	Names	Population	Number of Households
1	Kumyali	710	236.7
2	Kaleburnu	372	124
3	Tatlisu	1379	459.7
4	Balalan	102	34
5	Kaplica	411	137
6	Dipkarpaz	2026	675.33
7	Yenierenkoy	8091	2697
8	Bafra	662	220.7

Source: [89].

3.2. Survey Instrument and Data Collection

A survey questionnaire was designed to collect data from community members in each village. Socio-demographic data were obtained on age in years (continuous), gender (male and female), length of residence in their current village in years (continuous), marital status (single and married), location of residency (for the purpose of number of surveyed respondents in each village), and occupation. Information was gathered by applying a five-point Likert scale ("1 = strongly agree"; "5 = strongly disagree"). The survey was developed in English, and then, by using the back-translation method, it was translated to Turkish [90,91], which is in line with previous studies [91–93]. The data collection process was carried out over three months from 27 January to April 2021.

The measurement instrument consisted of three dimensions: environmental (comprised of 16 items); institutional (comprised of 13 items); and tourism development and ICZM (comprised of 12 items). The measurement items gleaned from relevant sources and studies [21,22,42,46,66,83,93–97].

The measurement instrument was subjected to a pilot study to provide us with an topportunity to make adjustments if necessary [98]. For this purpose, we contacted two academics, two village teachers, two fishermen, and two farmers from the studied communities. The result of the pilot study indicated the adequacy and clarity of research instruments. In total, 251 survey questionnaires were distributed to the head of the households among the eight villages that were surveyed. The distribution of survey questionnaires was conducted by the drop-off/pick-up method. This was carried out through the village chief who is a trustworthy person among the villagers. He performed the distribution among the households within the study communities.

3.3. Sampling

In this study, a purposive sampling was utilized, which is a non-probability sampling method. 'In purposive sampling, sites, like organizations, and people (or whatever the unit of analysis is) within sites are selected because of their relevance to the research questions' [99] (p. 418). We were clear about the criteria and their relevancy to the inclusion of coastal community members as units of analysis.

Since this study aims to investigate the perceptions of the residents regarding coastal areas in North Cyprus, respondents with experience of living in coastal areas were targeted. Respondents voluntarily participated in this research and were assured about their anonymity and confidentiality beforehand. The respondents' profile is provided in Table 4.

The result of descriptive analysis for the gender variable in Table 4 showed that the majority of the respondents were male (56.6%) and married (68.5%). The majority of the respondents were aged between 41 and 65 (53.0%). The majority of the respondents were civil servants (50.2%). The results of cross tabulation between location and age, gender, and marital status are shown in Table 5. These results showed that the majority of the respondents of the Kumyali (65.4) and Yenierenkoy (58.7%) were female, while for the Balalan (77.8%), Dipkarpaz (77.3%), Kaplica (63.6%), and Bafra (57.7%), the majority were

male. However, for other areas (Kaleburnu and Tatlisu), they were almost equally male and female.

Table 4. Respondents' profile.

Profile Category		Frequency (N = 251)	Percentage (%)
Gender	Female	109	43.4
	Male	142	56.6
Age	20–30	46	18.3
	31–40	47	18.7
	41–50	68	27.1
	51–65	65	25.9
	66–80	25	10.0
Marital Status	Single	79	31.5
	Married	172	68.5
Location	Bafra	26	10.4
	Balalan	27	10.8
	Dipkarpaz	44	17.5
	Kaleburnu	29	11.6
	Kaplica	22	8.8
	Kumyali	26	10.4
	Tatlisu	31	12.4
	Yenierenkoy	46	18.3
Residency years	1–10 years	16	6.4
	11–20 years	57	22.7
	21–30 years	45	17.9
	31–40 years	50	19.9
	41–50 years	46	18.3
	51–60 years	26	10.4
	61 years and above	11	4.4
Occupation	Self-employed	80	31.9
	Full-time/governmental job	126	50.2

Table 5. Cross Tabulation between Location and Gender, Marital Status, and Age.

Location	Gender		Marital Status		Age					Total
	Female	Male	Single	Married	20–30	31–40	41–50	51–65	66–80	
Bafra	11 (42.3)	15 (57.7)	9 (34.6)	17 (65.4)	8 (30.8)	5 (19.2)	6 (23.1)	5 (19.2)	2 (7.7)	26
Kumyali	17 (65.4)	9 (34.6)	8 (30.8)	18 (69.2)	8 (30.8)	2 (7.7)	9 (34.6)	4 (15.4)	3 (11.5)	26
Kaleburnu	15 (51.7)	14 (48.3)	10 (34.5)	19 (65.5)	4 (13.8)	3 (10.3)	8 (27.6)	10 (34.5)	4 (13.8)	29
Tatlisu	15 (48.4)	16 (51.6)	8 (25.8)	23 (74.2)	6 (19.4)	6 (19.4)	13 (41.9)	5 (16.1)	1 (3.2)	31
Balalan	6 (22.2)	21 (77.8)	10 (37.0)	17 (63.0)	5 (18.5)	6 (22.2)	4 (14.8)	8 (29.6)	4 (14.8)	27
Kaplica	8 (36.4)	14 (63.6)	10 (45.5)	12 (54.5)	4 (18.2)	6 (27.3)	6 (27.3)	4 (18.2)	2 (9.1)	22
Dipkarpaz	10 (22.7)	34 (77.3)	13 (29.5)	31 (70.5)	7 (15.9)	11 (25)	14 (31.8)	9 (20.5)	3 (6.8)	44
Yenierenkoy	27 (58.7)	19 (41.3)	11 (23.9)	35 (76.1)	4 (8.7)	8 (17.4)	8 (17.4)	20 (43.5)	6 (13.0)	46
Total	109 (43.4)	142 (56.6)	79 (31.5)	172 (68.5)	46 (18.3)	47 (18.7)	68 (27.1)	65 (25.9)	25 (10)	251

Note: the values in parentheses are the percentages.

According to the results of Table 5, the majority of residents of Yenierenkoy (43.5%), Balalan (29.6%), and Kaleburnu (34.5%) areas are in the age range of 51–65, while for the Dipkarpaz (31.8%), Tatlisu (41.9%), Kumyali (34.6%), Kaplica (27.3%) areas, residents mostly ranged within 41–50 (12 out of 39). However, for the Bafra area, the majority of the respondents were aged between 20 and 30 (30.8%). Moreover, the results of Table 5 showed that almost all the areas' residents were married (more than 60%), except for Kaplica (about 50%).

3.4. Data Analysis

The data analysis process was conducted using the IBM SPSS 25.0 program, which consisted of data screening, reliability analysis, descriptive and frequency analysis, t-test, and one-way ANOVA, as well as post hoc analysis of Scheffe [100]. Therefore, data were summarized in order to obtain the best interpretation. The data screening was started by exploring the missing values in rows and columns. There were no rows with over 20% missing data. No outliers were found. We observed 3 missing values in the II_9 and TIM_6 variables. We looked at the surrounding values of the other indicators for the II_9 and TIM_6 variables, and we used the mode value for respondents to estimate the missing values.

In terms of the normality of the data, the dataset was checked for skewness and kurtosis. The values of skewness ranged from −0.666 to 1.750, and for kurtosis, the values ranged from −1.258 to 1.758 except for the TIM_1 variable (3.049). Therefore, we observed normal distributions for all the variables, as suggested by Sposito et al. [101] who recommend ±3.3 as the upper threshold for normality, which is in line with previous studies [91,102]. For the details, see Table A1/Appendix A.

In order to compare the differences between groups in the variables, a t-test for comparing two groups and a one-way ANOVA for comparing more than two groups were conducted. Additionally, Scheffe's post hoc test was applied to find means that are significantly different from each other between the groups of variables. Both Tukey's HSD and Scheffe's post hoc test are used for pairwise comparison among the group means [103,104]; however, Scheffe's post hoc test is used with unequal group sample sizes in and is more conservative (for more information see Keselman and Rogan [103]; Scheffe [104].

4. Results

The result of reliability for all the scale variables is presented in Table 6. Three items from ED (ED_13, ED_14, and ED_15), two items from II (II_1 and II_2), and two items from TIM (TIM_1 and TIM_10) were removed due to the low corrected item-total correlation. This is because corrected item-total correlation values greater than 0.3 are acceptable [105] (p. 1050). The removed items were eliminated from the rest of the analysis. The Cronbach alpha (α) values ranged between 0.848 and 0.908 and were greater than 0.7, as the threshold [106].

Table 6. Reliability of the Scale Variables.

Items		Corrected Item-Total Correlation	Cronbach Alpha (α)
Environmental Dimension			0.849
ED_1	Since I have been living here, I have witnessed the decline in the quality of the coastal areas due to pollution and contamination.	0.465	
ED_2	Since I have been living here, I have witnessed land erosion along the coastal areas.	0.636	
ED_3	I have noticed an acceleration of the phenomenon of erosion since I resided here.	0.537	
ED_4	Nowadays beaches and coastal areas are more polluted.	0.546	
ED_5	The main cause of erosion and pollution is humans.	0.530	
ED_6	The main cause of pollution and erosion is haphazard development.	0.494	
ED_7	Most of the sewers from households are unfiltered and end in the Sea.	0.419	
ED_8	Holiday home construction is the cause of coastal pollution.	0.619	
ED_9	Desalination plants contribute to the pollution of coastal areas.	0.467	
ED_10	Existing marinas are not following any guidelines for protection of the beach.	0.485	
ED_11	Existing accommodation sector contributes to coastal pollution.	0.590	
ED_12	Construction firms have to follow strict rules and regulations to protect the quality of environment in coastal areas.	0.386	

Table 6. *Cont.*

Items		Corrected Item-Total Correlation	Cronbach Alpha (α)
ED_13	Coastal areas are special ecosystems, and they require an adaptive strategy such as ICZM (integrated coastal zone management).	-	
ED_14	Coastal residents are aware of coastal zone conservation programs.	-	
ED_15	Coastal residents and communities have knowledge of support how to protect the coast against discharge and waste.	-	
Institutional Issues			0.908
II_1	Government should be responsible for the management of coastal areas.	-	
II_2	Government has no program for the protection of the coastal zone.	-	
II_3	There is close relationship between local government and national government towards coastal management.	0.351	
II_4	There are strict laws and regulations regarding coastal zone management.	0.607	
II_5	Government has strong monitoring system regarding the coastal zone protection.	0.741	
II_6	Government facilitates and invites community residents to participate and be involved in integrated coastal zone management.	0.782	
II_7	Nongovernmental organizations (NGOs) are actively involved in coastal zone management.	0.635	
II_8	There is close cooperation and collaboration between NGOs and institutions responsible for coastal zone.	0.788	
II_9	Coastal residents are always invited to be involved in coastal zone management policies and plans.	0.757	
II_10	Construction developers have the power to influence coastal zone development projects.	0.353	
II_11	Public institutions are in close cooperation and collaboration to achieve the protection and management of coastal areas.	0.735	
II_12	Coastal residents have been informed about integrated coastal zone management (ICZM).	0.770	
II_13	Government has established a formidable ICZM (integrated coastal zone management) in North Cyprus.	0.693	
Tourism development and ICZM (integrated coastal zone management)			0.848
TIM_1	Coastal zones and beaches are the main attractions for mass tourism.	-	
TIM_2	Coastal residents and communities are the main beneficiaries of coastal tourism known as sun, sea, and sand tourism.	0.328	
TIM_3	Tourism activities are the main cause of coastal damage in North Cyprus.	0.439	
TIM_4	Accommodation sector managers have received special training in how to protect the coast.	0.613	
TIM_5	Tourists receive special orientation to respect the coastal ecosystems.	0.703	
TIM_6	Coastal residents are given opportunities to participate in coastal tourism management and monitoring.	0.718	
TIM_7	Coastal residents and communities are aware of sustainable coastal tourism.	0.576	
TIM_8	Tourism has caused the depletion of marine life and fish stock.	0.533	
TIM_9	The tourism accommodation development is in violation of the principles of ICZM (integrated coastal zone management).	0.373	
TIM_10	Tourism development along the coastal areas has affected the culture and lifestyle of coastal communities in a positive way.	-	
TIM_11	Coastal residents are in close contact with tourism establishments in the coastal areas.	0.604	
TIM_12	There is a close cooperation between coastal residents and tourism sector.	0.581	

Note: (-) removed items due to the low corrected item-total correlation.

In this study, the 5-point Likert scale was utilized. According to Balcı [107], if the average of each question for all the respondents is between 1 and 1.79, it can be considered that they strongly agreed with that specific question. When it ranges from 1.80 to 2.59, it can be thought as agreement, 2.60 to 3.39 as undecided, 3.40 to 4.19 as disagreement, and 4.20 to 5 as strong disagreement. After calculating the attitude score based on Balcı's [107] recommendation, the results revealed that respondents almost agreed with all of the items of the ED variable, except for ED_12, with which their attitudes were strongly agreed. For the II variables, most of the respondents were undecided about the items, except for II_10 (agree) and II_13 (disagree). Except for TIM_2 (agree), the respondents were shown to be undecided for all of the items of the TIM variable. By taking the average of the ED, II, and TIM variables, the results showed that respondents agreed with the ED variables; however, they were undecided about the II and TIM variables. For the details, see Table A1/Appendix A.

In order to investigate the influence of gender, age, location, and years of residency on residents' perceptions regarding all the variables, the t-test and ANOVA were utilized. The mean scores, which were measured on a Likert scale from 1 = strongly agree to 5 = strongly disagree, were used for the ranking. The results are presented in Tables 7 and 8.

Moreover, the post hoc analysis of Scheffe was implemented to explore differences in variables between the subgroups of related variables.

Table 7. Comparing Means of all the Variables and Gender.

Items	t-Value	df	Sig. (2-Tailed)	Mean Difference	Std. Error Difference
ED_1	0.409	249	0.683	0.063	0.153
ED_2	0.338	249	0.736	0.046	0.136
ED_3	−0.493	249	0.623	−0.066	0.134
ED_4	0.538	249	0.591	0.071	0.132
ED_5	1.946	249	0.053	0.281	0.144
ED_6	−1.242	249	0.215	−0.184	0.148
ED_7	−0.302	249	0.763	−0.042	0.140
ED_8	−1.051	249	0.294	−0.156	0.148
ED_9	−1.349	249	0.179	−0.189	0.140
ED_10	−0.332	249	0.740	−0.042	0.127
ED_11	−0.631	249	0.528	−0.095	0.151
ED_12	−0.953	249	0.342	−0.125	0.131
II_3	1.641	249	0.102	0.265	0.161
II_4	2.212	249	0.028 *	0.351	0.159
II_5	3.192	249	0.002 **	0.517	0.162
II_6	3.417	249	0.001 **	0.516	0.151
II_7	2.623	249	0.009 **	0.426	0.162
II_8	2.257	249	0.025 *	0.355	0.157
II_9	2.705	249	0.007 **	0.423	0.156
II_10	1.389	249	0.166	0.208	0.150
II_11	2.808	249	0.005 **	0.417	0.149
II_12	2.384	249	0.018 *	0.388	0.163
II_13	0.899	249	0.370	0.159	0.177
TIM_2	−0.304	249	0.762	−0.041	0.136
TIM_3	−0.189	249	0.850	−0.032	0.169
TIM_4	3.843	249	0.000 ***	0.662	0.172
TIM_5	4.081	249	0.000 ***	0.664	0.163
TIM_6	2.745	249	0.006 **	0.426	0.155
TIM_7	2.009	249	0.046 *	0.308	0.154
TIM_8	−0.702	249	0.484	−0.107	0.153
TIM_9	−1.631	249	0.104	−0.235	0.144
TIM_11	1.383	249	0.168	0.208	0.151
TIM_12	−0.353	249	0.724	−0.057	0.162

Notes: Sig. = Significant; df = degree of freedom; std. = standard. * = The mean difference is significant at the $p \leq 0.05$ level; ** = The mean difference is significant at the $p \leq 0.01$ level; *** = The mean difference is significant at the $p \leq 0.001$ level.

Table 8. Comparing Means of all the Variables and Age, Years of Residency, Occupation, and Location.

Items	Age			Years of Residency			Occupation			Location		
	F	Sig.	Scheffe	*F*	Sig.	Scheffe	*F*	Sig.	Scheffe	*F*	Sig.	Scheffe
ED_1	2.154	0.075		1.062	0.386		1.664	0.191		3.664	0.001 **	
ED_2	0.626	0.644		1.029	0.407		1.224	0.296		1.449	0.186	
ED_3	1.794	0.131		1.527	0.170		0.849	0.429		1.907	0.069	
ED_4	2.645	0.034 *		0.819	0.556		2.121	0.122		1.126	0.348	
ED_5	0.833	0.505		1.861	0.088		0.113	0.893		2.486	0.018 *	
ED_6	2.356	0.054		2.080	0.056		1.272	0.282		0.337	0.936	
ED_7	1.299	0.271		0.409	0.873		0.439	0.645		2.032	0.052	
ED_8	0.917	0.454		1.288	0.263		0.306	0.736		1.051	0.396	
ED_9	1.987	0.097		1.753	0.109		0.599	0.550		0.492	0.840	
ED_10	0.450	0.773		2.245	0.040 *		0.834	0.435		0.779	0.605	
ED_11	0.535	0.710		2.975	0.008 **		4.376	0.014 *	**[3] > [2]**	1.024	0.415	
ED_12	1.360	0.248		2.777	0.012 **		2.533	0.082		0.670	0.697	
II_3	1.246	0.292		1.718	0.117		0.719	0.488		0.695	0.676	
II_4	0.608	0.657		2.711	0.014 **		0.972	0.380		1.744	0.100	
II_5	1.700	0.151		1.975	0.070		2.213	0.112		2.176	0.037	
II_6	2.505	0.043 *		2.091	0.055		3.640	0.028 *	**[3] > [1]**	2.788	0.008 **	
II_7	1.289	0.275		0.875	0.514		1.058	0.349		5.356	0.000 ***	**«2»«6» > «7»**
II_8	1.046	0.384		1.874	0.086		0.076	0.927		2.807	0.008 **	
II_9	1.766	0.136		2.297	0.036 *		0.953	0.387		4.196	0.000 ***	**«2»«4» > «7»**
II_10	5.984	0.000 ***	**(4) > (1)(3)(5)**	2.899	0.010 *		0.142	0.868		1.555	0.150	
II_11	1.942	0.104		2.706	0.015 *		0.408	0.666		2.006	0.055	
II_12	1.335	0.257		1.432	0.203		0.484	0.617		2.097	0.045 *	
II_13	1.632	0.167		1.030	0.406		0.173	0.841		3.316	0.002 **	**«6» > «7»**
TIM_2	0.330	0.858		0.800	0.571		2.563	0.079		2.045	0.050	
TIM_3	0.967	0.426		0.301	0.936		0.971	0.380		3.928	0.000 ***	**«6»«2» > «7»**
TIM_4	2.494	0.044 *		3.406	0.003 **		0.278	0.757		3.287	0.002 **	**«5» > «7»**
TIM_5	2.653	0.034 *		3.606	0.002 **	**{1} > {6}**	0.095	0.909		2.715	0.010 *	
TIM_6	1.890	0.113		3.518	0.002 **	**{2} > {6}**	0.262	0.770		3.789	0.001 **	**«5»«8» > «7»**
TIM_7	2.513	0.042 *		2.184	0.045 *		2.797	0.063		5.295	0.000 ***	**«5»«8» > «6»**
TIM_8	2.374	0.053		1.630	0.139		0.694	0.501		2.083	0.046 *	
TIM_9	1.815	0.126		1.670	0.129		0.343	0.710		1.571	0.145	
TIM_11	3.478	0.009 **	**(4) > (3)(1)**	2.697	0.015 *		0.566	0.568		1.411	0.201	
TIM_12	5.046	0.001 **	**(4) > (3)(1)**	0.969	0.447		0.551	0.577		1.789	0.090	

Notes: Sig. = Significant; F = *F*-value; * = $p \leq 0.05$ level; ** = $p \leq 0.01$ level; *** = $p \leq 0.001$ level. (1), (2), (3), (4), and (5) represent the mean score of age ranging 20–30, 31–40, 41–50, 51–65, and 66–80, respectively. [1], [2], and [3] represent the mean score of Self-employed, Governmental job, and Unemployed, respectively. {1}, {2}, {3}, {4}, {5}, {6}, {7} represent the years of residency ranging 1–10, 11–20, 21–30, 31–40, 41–50, 51–60, and 61 years and above, respectively. «1», «2», «3», «4», «5», «6», «7», and «8» represent the locations of Bafra, Kumyali, Kaleburnu, Tatlisu, Balalan, Kaplica, Dipkarpaz, and Yenierenkoy, respectively.

The result of the independent samples t-test in Table 7 shows that there is a statistically significant difference between the male and female respondents in only the means of II_4 to 9, II_11, II_12, and TIM_4 to 7 variables. The results showed that the mean for these variables was greater for female respondents than for males. These results revealed that males were more agreed about II_4, 5, 6, 7, 8, and 9 variables (mean = 2.796, 2.979, 2.915, 2.831, 2.930, and 2.852, respectively) than females (mean = 3.147, 3.495, 3.431, 3.257, 3.284, and 3.275, respectively). Moreover, males were shown to be more agreed or neutral about the TIM_4, 5, 6, and 7 variables (mean = 2.852, 2.951, 3.106, 2.655, respectively) than females (mean = 3.514, 3.615, 3.532, and 2.963, respectively).

Differences between the perceptions of residents by different age levels, years of residency, occupation, and location of the residents were verified using one-way ANOVA. The results are presented in Table 8, which shows that there were significant differences in community members' perception of the ED_4, II_6, II_10, TIM_4, TIM_5, TIM_7, TIM_11, and TIM_12 variables regarding their age levels. There is also a significant difference in the ED_10 to 12, II_4, II_9 to 11, TIM_4 to 7, and TIM_11 variables regarding the years of residency. In addition, there were significant differences in community members' perception of the ED_11 and II_6 variables regarding their occupation. In addition, there is a significant difference in the ED_1, ED_5, II_6 to 9, II_12 to 13, and TIM_3 to 8 variables regarding the community members' locations. In order to find out which pairs of means are significantly different from each other between the groups of variables, Scheffe's post hoc test was utilized.

The results of Scheffe's post hoc test in Table 8 showed that, for the II_10, TIM_11, and TIM_12 variables, there is a main effect for age levels (F = 5.984, 3.478, and 5.046, $p < 0.01$), due to residents with ages ranging 51–65 scoring higher than those with ages ranging 20–30, 41–50, and 66–80 (only for II_10). The results showed that the mean for these variables was greater for respondents with ages ranging 51–65 than for others. These results revealed that residents with ages ranging 66–80 (mean = 1.800, only for II_10), 41–50 (mean = 2.103, 2.632, and 2.588, respectively), and 20–30 (mean = 2.130, 2.565, and 2.413, respectively) were more agreed about the II_10, TIM_11, and TIM_12 variables than residents age ranging 51–65 (mean = 2.862, 3.262, and 3.38, respectively). These results also revealed that residents with ages ranging 66–80 were the most agreed about the II_10 variable.

The results of Scheffe's post hoc test in Table 8 showed that, for the TIM_5 and TIM_6 variables, there is a main effect for years of residency (F = 3.606 and 3.518, $p < 0.01$), due to those with residency years ranging 1–10 and 11–20 (for TIM_5 and TIM_6, respectively) scoring higher than those with residency years ranging 51–60. These results revealed that residents with 1 to 10 and 11 to 20 years of residence (mean = 4.188 and 3.772, respectively) were more disagreed about the TIM_5 and TIM_6 variables than residents with 51 to 60 years of residence (mean = 2.538 and 2.615, respectively).

The results of Scheffe's post hoc test in Table 8 showed that, for the ED_11 and II_6 variables, there is a main effect for the resident's occupation (F = 4.376 and 3.640, $p < 0.05$), due to the unemployed residents scoring higher than residents with full-time/governmental jobs and self-employed residents (for ED_11 and II_6, respectively). These results revealed that residents with full-time/governmental jobs and self-employed residents (mean = 2.246 and 2.863, respectively) were more agreed about ED_11 and II_6 variables than unemployed residents (mean = 2.844 and 3.422, respectively).

The results of Scheffe's post hoc test in Table 6 showed that, for the II_7, II_9, II_13, TIM_3, TIM_4, TIM_6, and TIM_7 variables, there is a main effect for resident's location (F = 5.356, 4.196, 3.316, 3.928, 3.287, 3.789, and 5.295, $p < 0.01$ or better). This is because the residents of Kumyali, Tatlisu, Balalan, and Kaplica scored higher than the residents of Dipkarpaz, and the residents of Balalan and Yenierenkoy scored higher than the residents of Kaplica.

These results revealed that the residents of Dipkarpaz (mean = 2.364, 2.341, 2.886, 2.250, 2.318, and 2.545, respectively) and Kaplica (mean = 1.909, only for TIM_7) were more agreed about the II_7, II_9, II_13, TIM_3, TIM_4, TIM_6, and TIM_7 variables than the residents of Kaplica and Kumyali (mean = 3.682 and 3.692, respectively, for II_7). Furthermore, for residents of Tatlisu and Kumyali, the mean = 3.452 and 3.615, respectively, for II_9; for residents of Kumyali, the mean = 3.615, for II_13; for residents Kumyali and Kaplica, the mean = 3.538 and 3.545, respectively, for TIM_3. In addition, for residents of Balalan, the mean = 3.630, for TIM_4; for residents of Yenierenkoy and Balalan, the mean = 3.543 and 3.815, respectively, for TIM_6; for residents of Yenierenkoy and Balalan, the mean = 3.239 and 3.444, respectively, for TIM_7.

5. Discussion and Conclusions

This study investigated coastal communities' perceptions in the case of North Cyprus, which is highly dependent on tourism since tourism in North Cyprus is highly based on coastal resources [108,109]. To contribute to our understanding of coastal governance based on the ICZM framework, we employed SESs and Ostrom's collective action principles as theoretical backdrops. This paper is the first attempt to investigate North Cyprus's coastal management policies and governance based on the aforementioned theories and the coastal communities' perception.

Based on Balcı's [107] recommendation and the results, the answer to the first and second research questions indicate that ICZM has not been institutionalized as a framework to guide the management of coastal zones. As shown in Appendix A, coastal community residents expressed their lack of knowledge and awareness of any institutional approach to the governance of coastal zones. Nevertheless, tourism is perceived as the main source

of impact by residents, and ICZM might be able to address or negate those impacts to some degree. This means that they have no cognizance of any institutional policy or its implementation towards an integrated ICZM and tourism development. This is in line with a study by Gray et al. [110], who investigated coastal community residents' perception concerning coastal hazard mitigation.

There were some common perceptions regarding environmental dimensions (ED) in coastal areas. In this regard, the perception was that tourism negatively affected coastal areas and the lack of a framework such as ICZM exacerbated the negative impacts. This finding is also supported by Zahedi [70], who examined the 3S tourism's negative impacts. Zahedi [70] (p. 49) highlighted that:

> *'This type of tourism which is the main cause of developing too many buildings, too close to beaches, is associated with the emergence of a leisure-dominated pleasure periphery occupying a significant portion of the Mediterranean and Caribbean basins, along with the parts of the South-Pacific, South-eastern Asia and Indian Ocean basin. At times, the infrastructure has lagged behind development or has not been maintained, including sewerage, water and power facilities, roads and rubbish clearance in the Caribbean Island and Mexico'.*

The study has also revealed there is not much difference between male and female respondents regarding the environmental dimension issues. However, regarding the institutional issues and ICZM, female respondents were more skeptical and had doubts and reservations.

Moreover, results revealed that residents with different age levels, years of residency, occupation, and location have the same perception regarding the environmental dimension (ED), except for ED_11, with which residents with full-time/governmental jobs were more agreed in comparecomparison to unemployed residents. While residents with different years of residency had the same perception regarding the institutional issues, residents with different occupations had the same perception regarding the ICZM. However, the perception of residents regarding the II_10, TIM_11, and TIM_12 variables were shown to differ according to their different age levels. Residents aged 51–65 agreed less strongly than the other age groups. This implies that the younger residents were either less concerned about the institutional issues and ICZM or less aware. Moreover, residents with less than 20 years of residency were shown to disagree more strongly or to be neutral regarding the TIM_5 and TIM_6 variables, compared to the residents with 51–60 years of residency. This implies that residents with longer residency have more awareness of ICMZ related issues. The results also revealed that residents with full-time/governmental jobs and self-employed residents agreed more strongly about the ED_11 and II_6 variables than the unemployed residents. Regarding the location of residents, the results showed that residents of Dipkarpaz agreed more strongly about the II_7, II_9, II_13, TIM_3, TIM_4, and TIM_6 variables in comparison to residents of Kaplica, Kumyali, Tatlisu, and Balalan. In addition, residents of Kaplica were shown to agree more strongly about TIM_7 in comparison to residents of Balalan and Yenierenkoy. This means that the institutional and ICMZ issues are less problematic in Dipkarpaz and Kaplica than in other locations. It can be concluded that residents of Dipkarpaz and Kaplica areas are also more aware of institutional and ICMZ issues than other locations.

A survey conducted with residents of eight coastal communities in North Cyprus revealed several similarities, as well as important differences, in their awareness and perceptions of institutional issues, ICZM, and the environmental impacts of coastal development including tourism. Lack of awareness and knowledge about overall coastal management and governance among the surveyed communities indicates that the relationships and interactions between coastal communities and coastal resources as commons are devoid of the perception of these resources in the context of socio-ecological systems (SES). To uphold and embed the principles of SES requires a cohesive collective approach as elaborated in Ostrom's collective action principles. In all communities that were investigated, participants understood the values of coastal resources; however, they had minimal understanding of ICZM, SES, and the collective approach to the governance of coastal areas. This research

has found that government and the tourism sector have failed to bring the communities on board and to involve them in enhancing social capital, which is essential for collaboration in any social innovation [111,112].

We have also taken the effort to review existing laws and amendments pertaining to the management of coastal zones. Two sets of legislation were reviewed by the authors that included legislation No. 1/1992, 22/1961, 26/1993, 28/1996, and 55/89.2020—construction regulation [86]. Prior to the year 2020, the regulations regarding coastal zones lacked any comprehensive guideline or management system. However, the laws that were recently revised addressed issues of distance from the shoreline, the bulk of the construction, and intensity of development for the purpose of tourism. The legislation failed to address the issues relevant to ICZM and community involvement. The new legislation perceived coastal zones as comparable to any other terrestrial entity without considering the specific characteristics of coastal ecosystems. The further pressure on coastal zones is underway as the development of second-home tourism is intensified by both local and international investors.

This study is also in line with Heslinga et al.'s [113] study, who applied the SES framework and concluded that a discussion of synergy between tourism and the landscape/ecosystem has been neglected due to a simplistic view of the environmental impact of tourism; therefore, it is time to 'balance the needs of nature protection and socio-economic development' [113] (p. 187).

However, this study has also yielded an unexpected finding about the ethos of the community, which signifies the heterogeneity of the community structure. This should come of no surprise to scholars of community who consider community to consist of complex layers of different views and expectations.

The World Tourism Organization and United Nations Development Program (UNDP) (2017) conceptualized the 2030 Agenda for Sustainable Development Goals (SDG) [114]. The ICZM can be instrumental in paving the path for the tourism sector and its vast value chain to contribute to the progress towards all 17 SDGs goals.

In the meantime, this study's finding is in line with Gerhartz-Abraham et al.'s [5] findings who revealed the effectiveness of ICZM in the case of Cuba. Furthermore, they emphasized coastal community participation as the backbone of successful ICZM. They recommended 'policy makers to explore new integrative arrangements in the governance framework that promotes local engagement and empowerment in order to improve legitimacy of the regulatory regime and hence compliance' [5] (p. 74).

6. Theoretical and Practical Contribution

Empirical insights were drawn from eight coastal communities in North Cyprus. To enhance our knowledge and more comprehensive understanding of the ICZM framework, SES and Ostrom's collective action principles were employed to guide the study. The findings enrich the employed theories' relevance if their aim is to achieve a sustainable and productive natural resource governance. They also support and underscore the indispensability of a bottom-up approach to the management and protection of coastal areas. Furthermore, coastal communities' proactive involvement is a challenge as communities are heterogeneous entities that policy makers should reckon with, as noted by Blackstock [63] and Alesina and La Ferrara [115]. For the public to bring the communities to be part of implementable ICZM, enhancing social capital and social learning need to be part of the strategic process. If we assume that ICZM is a social innovation with a strategic path, it will need to have community participation as part of its infrastructure. We touched upon mass tourism in this case because North Cyprus is highly dependent on sun, sea, and sand (3S) tourism system, which is linked to other systems (e.g., SES). Understanding this 'link' will contribute to bridging different but relevant systems. As Partanen and Sarkki [111] (p. 18) stated, 'at their best, different perspectives of various sectors and actors linked to tourism can result in co-creative, transformative social innovations enhancing holistic sustainability'.

Implementing ICZM as a communication and governance tool must demonstrate to stakeholders (e.g., coastal community residents) how it has the potential to become a strategic pathway towards making the coast a sustainable resource. However, in the

context of SES and Ostrom's collective action principles, ICZM and its implementation can be ensured if coastal residents are empowered to be part of the process. If we assume that ICZM is a master plan to manage coastal areas, it will 'matter' if residents of coastal communities are considered rightful stakeholders [116].

7. Limitations and Pathway for Future Studies

This study also has some limitations. The first limitation was that it coincided with the COVID-19 pandemic, which restricted access to a larger sample. The issues identified and discussed in this study could be explored extensively if there was an opportunity to conduct a qualitative study as well (i.e., mixed method). For future studies, we recommend including the awareness, perceptions, and preferences of other governance actors, local officials, tourism operators, and businesses, as well as advocacy groups (i.e., NGOs). Studies of residents living outside of the immediate coastal region could determine how their perceptions, understanding, and preferences compare to those of coastal residents in generating wide-ranging qualitative studies with representative samples of noncoastal residents. As the public costs of coastal environments increase, it is significant to explore the perceptions and preferences of a broader public, especially where the coast is the main resource.

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Appendix A

Table A1. Descriptive Statistics of Questionnaire Items.

Items	Mean	Mode	Std. Deviation	Skewness	Kurtosis	Min	Max	Attitude Scale
ED_1	2.29	2	1.200	0.646	−0.601	1	5	Agree
ED_2	2.41	2	1.068	0.603	−0.306	1	5	Agree
ED_3	2.45	2	1.051	0.435	−0.391	1	5	Agree
ED_4	2.02	1	1.039	0.901	0.189	1	5	Agree
ED_5	2.08	1	1.139	0.874	−0.215	1	5	Agree
ED_6	2.22	2	1.162	0.929	0.116	1	5	Agree
ED_7	2.42	2	1.094	0.571	−0.256	1	5	Agree
ED_8	2.33	2	1.165	0.625	−0.432	1	5	Agree
ED_9	2.35	2	1.102	0.763	0.021	1	5	Agree
ED_10	2.33	3	0.998	0.304	−0.449	1	5	Agree
ED_11	2.40	2	1.180	0.574	−0.573	1	5	Agree
ED_12	1.78	1	1.027	1.465	1.594	1	5	Strongly Agree
ED13 *	1.90	2	0.937	1.239	1.758	1	5	-
ED14 *	2.73	2	1.183	0.182	−0.898	1	5	-
ED15 *	2.79	2	1.271	0.097	−1.133	1	5	-
Mean ED	2.258 **							Agree

Table A1. *Cont.*

Items	Mean	Mode	Std. Deviation	Skewness	Kurtosis	Min	Max	Attitude Scale
II1 *	1.79	1	1.127	1.454	1.273	1	5	-
II2 *	2.43	3	1.138	0.270	−0.885	1	5	-
II_3	2.78	2	1.270	0.143	−1.074	1	5	Undecided
II_4	2.95	3	1.256	−0.122	−0.954	1	5	Undecided
II_5	3.20	4	1.294	−0.440	−0.966	1	5	Undecided
II_6	3.14	4	1.210	−0.475	−0.880	1	5	Undecided
II_7	3.02	4	1.290	−0.221	−1.149	1	5	Undecided
II_8	3.08	4	1.245	−0.348	−0.932	1	5	Undecided
II_9	3.04	4	1.244	−0.244	−1.035	1	5	Undecided
II_10	2.32	2	1.178	0.624	−0.594	1	5	Agree
II_11	3.20	4	1.182	−0.399	−0.750	1	5	Undecided
II_12	3.27	4	1.289	−0.520	−0.919	1	5	Undecided
II_13	3.53	4	1.389	−0.666	−0.851	1	5	Disagree
Mean II	3.047 **							Undecided
TIM_1 *	1.66	1	0.947	1.750	3.049	1	5	-
TIM_2	2.18	2	1.064	0.681	−0.214	1	5	Agree
TIM_3	2.88	4	1.324	0.024	−1.258	1	5	Undecided
TIM_4	3.14	4	1.389	−0.333	−1.196	1	5	Undecided
TIM_5	3.24	4	1.317	−0.555	−0.946	1	5	Undecided
TIM_6	3.29	4	1.236	−0.479	−0.801	1	5	Undecided
TIM_7	2.79	4	1.213	−0.008	−1.081	1	5	Undecided
TIM_8	2.93	4	1.200	−0.219	−0.992	1	5	Undecided
TIM_9	2.94	3	1.135	0.085	−0.757	1	5	Undecided
TIM_10 *	2.24	2	1.046	0.607	−0.395	1	5	-
TIM_11	2.81	2	1.185	0.260	−0.880	1	5	Undecided
TIM_12	2.88	2	1.273	0.187	−1.035	1	5	Undecided
Mean TIM	2.908 **							**Undecided**

Note: * removed items during reliability test. ** The average of the means except for the removed items.

Figure A1. Seaside hotel, Salamis coastal zone, North Cyprus. Lack of land use planning. Consequences of absence of ICZM. Source: authors (2021).

Figure A2. Petroleum depo. Bogaz coastal zone, North Cyprus. Incompatible location for petroleum storage. Source: authors (2021).

Figure A3. Abandoned illegal development, Tatlisu coastal zone, North Cyprus. Source: authors (2021).

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