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Hybrid, public and private environmental governance: The case of sustainable coastal zone management in Quintana Roo, Mexico.

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Hybrid, public and private environmental governance: The case of sustainable coastal zone management in Quintana Roo, Mexico.

Abstract. Coastal zones (CZ) are social-ecological systems where rapid forms of economic development are disrupting the existing patterns of relationships, raising challenges for governance. Institutional flexibility, broad participation, multilevel governance, and adaptability have been identified as critical conditions for the governance of social-ecological systems. While the importance of agency, through the substantive participation of private actors in rulemaking, has been researched, there is need to examine the dynamics involved in, and consequence of, hybrid governance arrangements. An empirical study is presented of hybrid governance, involving federal and local government and locally-based private actors from civil society organizations, environmental non-government organizations and local business interest associations, in the state of Quintana Roo, Mexico. The CZ of Quintana Roo is facing pressures from economic development, mainly tourism, with consequences for water pollution and fisheries. Through qualitative, mixed methods, we found that a thick network of private actors has mobilized to play an important role in environmental management and to act in collaboration with the State. Multiple rationales account for this development, including high levels of environmental awareness, particular with respect to water pollution, while the lack of institutional capacity also motivates state actors to seek partnerships. While private governance is emerging, our data reveal a complex case, where private actor mobilization seeks to promote better regulations, to share data and resources, and to improve implementation capacity within the public administration. Hybrid governance contributes to effective environmental governance of the CZ. However, this can also risk state retreat from its public responsibilities.

Keywords: governmentality; informal partnerships; multi-actor participation; networks; social-ecological systems; state corruption.

Introduction

This paper examines the role of hybrid authority in the governance of complex adaptive, social-ecological systems (SES). The literature has identified key conditions that are critical for the governance of SES systems: (1) flexibility in institutions; (2) openness of

institutions to provide for broad participation, not least in local decision-making and administration; (3) effectiveness of multilevel governance; (4) social structures that promote learning and adaptability without limiting the options for future development (Adger 2000; Binder et al. 2013; Folke et al. 2002; Folke 2006; Kooiman 2003; Walker and Salt 2006). However, research often fails to take account of the multiple actors involved across different governance levels. While the substantive participation of private actors in rule making has been researched, the dynamics involved in, and consequence of, opening institutions to provide for broad participation are less well understood. Moving from earlier ideas that the state is simply being ‘hollowed out’, and replaced by private actor governance, there is increasing recognition that the political relationship between state and non-state actors is not a zero-sum game (Bäckstrand 2006; Newell et al. 2012), but is rather being replaced by hybrid forms that combine public and private authority in governance. However, understanding the factors that contribute to the development of hybrid forms of governance, and whether this ‘hybrid’ form enhances governmentality, that is, the practices through which matters are governed, so as to improve environmental outcomes remains limited. This paper identifies the conditions that motivate actors to co-mingle in governance arrangements with public authorities to better understand the benefits and risks of hybrid authority. It also addresses the need to have a deeper understanding of the outcomes of private governance as they operate with the state in hybrid form. It specifically focuses on the whether or not this contribute to sustainability.

The most prominent example utilized in the literature of SES are coastal and marine ecosystems (Berkes 2011) and these systems form the empirical focus of this paper. Coastal ecosystems are here seen as having biophysical subsystems and human subsystems, the latter including economic, political, social and cultural components,

management and governance regimes (Paddock et al. 2018). However, while these characteristics have been well described at the conceptual level, there is still need to understand how they play out in practice, with a shortage of empirical studies in the area. The paper provides an empirical study of hybrid governance in coastal zone (CZ) governance in the state of Quintana Roo, Mexico. It examines the involvement of federal and local government and locally-based actors from civil society organizations (CSOs), environmental non-government organizations (ENGOS) and local business interest associations (BIAs) representing small and medium enterprises (SMEs), all operating in the CZ.

The paper begins by examining the current state of knowledge on the governance of SES, including on the role of private actors. The challenges that the emergence of hybrid forms of governance presents for analysis are then outlined. Having described the methodology, the paper turns attention to the empirical case. Information on both the ecological and social context of Quintana Roo provides the backdrop for the presentation of the empirical findings. The paper concludes by examining the significance of finding for our understanding of the governance of complex, adaptive systems, highlighting the paper's key contribution.

The Governance of Social-Ecological Systems

In the classical understanding of governing, boundaries between the public and private realms are seen as strict. Governing is equated exclusively with government, with responsibility for public issues consigned to the public domain of the state. In this view, public management is mainly rule-orientated, legalistic and rather formal. However, recent decades have seen a shift in both our understanding and practice of governing, with less emphasis placed upon the autonomy of the three domains of state, market and civil society, and instead their interdependencies are stressed. The term 'governance'

captures this new emphasis (Glasbergen 2007). These interdependencies operate across multi-level scales, ranging from international through to the regional and local levels. However, in the context of neoliberalism, we need to be mindful that governments often leave responsibilities to third parties, resulting in the private governance of public goods. While this can bring positive benefits, such as when private provision allows the state to channel scarce resources to other areas of need, private governance raises issues about whose interests get served and how the wider public are affected (Rudder 2008). Nevertheless, private governance can also be driven by the need for business corporations to be seen to be socially responsible and enable them to derive moral authority through showing leadership. This has led to the development of codes of conduct, for example in the tourism sector (Newell et al. 2012).

In addition, forms of multi-actor governance are also created through a multitude of civil society coalitions, alliances, and networks, engagements that are often about defending the rights of local and indigenous communities to natural resources as much as they are about directly shaping formal policy (Newell et al. 2012). However, the main focus of the literature has been on institutionalized hybrid authority, in particular through co-management, public-private partnerships and social-private partnerships (Lemos and Agrawal 2006). While partnerships themselves are broadly understood (Börzel and Risse 2002), this focus is too narrow for our purposes (Andonova 2010). There is need to widen the focus to examine hybrid form of governance that involve a complex array of state led, regulatory governing, interacting with self-organized interests, and with participatory forms of steering from social actors, which are not necessarily formalized.

In relation to environmental governance, it is long recognized that civil society actors and business interest association co-produce public environmental regulations

and are heavily involved in lobbying to shape regulation (Newell et al. 2012). Hybrid governance is also a response to the complexity, dynamics and uncertainty of policy making in the context of global environmental change, where traditional modes of state-based regulation are limited in their reach, effectiveness, authority, and even legitimacy (Kooiman 2003; Lemos and Agrawal 2006). Instead of a strong *state* to govern, a strong *society*, which is at least partly based on engagement from the market and civil society (Glasbergen 2007), is seen as critical for the promotion of sustainable futures.

Hybrid forms of governance help fill gaps in both the ‘regulatory deficit’ and ‘implementation deficit’ in environmental policy. Pooling of resources, including knowledge and finance, and burden sharing can increase the problem-solving capacity of governance arrangements (Börzel and Risse 2002). This can include the provision of place-specific information that may allow a more equitable allocation of benefits from environmental assets (Lemos and Agrawal 2006; Baker and Chapin 2018). These arguments are closely linked to the claim that participation increases the democratic nature of policy (Baker and Chapin 2018). Partnership arrangements are seen as reducing conflict, mediating the confrontational relation that has traditionally existed between companies, governments, and civil society in relation to environmental regulations. For their part, limited resources and high capacity requirements for the implementation of regulatory environmental standards provide a partial explanation for the willingness of the state to experiment with hybrid governance.

Despite its highly developed nature, the literature assumes that we are speaking about changes taking place in the liberal democratic order. Such order is assumed in the classic work of Glasbergen (2011) and in Börzel and Risse (2002), where new forms of governance are explored in western, democratic welfare states. Thus, there is need to distance research from a Weberian, state-centric narratives, grounded in the European

experiences of state formation (Colona and Jaffe 2016). This facilitates analysis of cases that do not require some form of developed welfare state regime, to enables the exploration of cases where there are high levels of state corruption. The case of Quintana Roo provides an opportunity to examine governance in the context of weak state presence, with the system of public administration only emerging as municipality formation takes place.

Methodology

A case study approach (Gerring 2007) using qualitative, mixed methods was employed. Qualitative fieldwork involved stakeholder focus groups, in-depth interviews, direct observation, and document analysis to examine key actor perceptions, attitudes, and interests. The study took place along the coastal corridor of the state of Quintana Roo (Figure 1) throughout 2017-2018. The authors received ethical approval from their respective Universities. Four stakeholder Focus Groups were held in Tulum, attended by 24 participants in all; and one was held in Bacalar, attended by 7 participants. The Focus Groups were held in March 2017, and drew representatives from local and regional government, research institutions, representatives from the water, forestry, and ecotourism sectors, and from CSOs, ENGOs, and members of BIAs. The discussions were guided by a facilitator, while members of the research team took detailed notes of the conversations in each group. Four follow-up stakeholder Focus Groups were held in Playa del Carmen. One public meeting was held in Playa del Carmen in February 2018 to present preliminary results to the general public so as to create awareness and generate feedback. Between May and September 2017, semi-structured interviews were conducted in Chetumal, Cancún, Playa del Carmen, Felipe Carrillo Puerto, and Tulum (29 interviews in all). Interviewees were drawn from the municipal (Tulum and Felipe Carrillo Puerto), state and federal levels of government in the environmental sector, and

from BIAs, ENGOs and CSOs operating in the region. The interviews lasted between 60-90 minutes and explored a series of themes related to the mechanisms of multi-actor collaboration and public participation, environmental policy integration, integration across multi-level governance, and the presence of political influence and of corruption. All the interviews were recorded and transcribed with the consent of participants. Transcripts were analyzed through Atlas.ti 8 for Windows (Scientific Software Development GmbH), using the qualitative content analysis method (Schreier 2012) based on a deductive coding strategy (Mayring 2000; Hsieh and Shannon 2005). In addition, grey literature from within the system of public administration, dealing with technical reports, development plans, land and urban planning documents, etc., provided background information, together with direct observations, for internal validity of results through data triangulation. The research was also informed by the scientific literature, in particular from within political science, public administration studies.

Figure 1. Map of the coastal zone of Quintana Roo showing the location of the study sites

The Coastal Zone of Quintana Roo as a Coupled System

The state of Quintana Roo occupies the eastern portion of the Yucatan Peninsula (Figure 1). Although the region has a long history of human occupation, including by the Maya civilization (Faust 2001), the area now known as Quintana Roo was only named as such at the beginning of the 20th Century. In 1902, the then Mexican President, Porfirio Díaz, decreed jurisdiction over the Federal Territory of Quintana Roo. Although the 1917 Constitution of Mexico saw the creation of the municipalities of Cozumel, Isla Mujeres and Payo Obispo, the Governor continued to exercise power

over practically all decisions related to the management of the Territory, and was directly appointed by the Federal government in Mexico City (Careaga Viliesid and Higuera Bonfil 2011). From 1975 to 2016, all seven governors of Quintana Roo were members of the *Partido Revolucionario Institucional* (Institutional Revolutionary Party, PRI), which ruled the country for more than seven decades (Hernández 2017). The imposition of external governors was combined with an open disregard for the lives of the inhabitants and a lack of interest in generating institutions and local management capacities (Samaniego 2010). It was not until 1974 that the Territory of Quintana Roo became a free and sovereign State, but history has left a legacy of corruption and neglect (Dachary et al. 1992; Careaga Viliesid and Higuera Bonfil 2011). As in the rest of the country, the absence of separation of powers that enables checks and balances in the political system has meant that the Executive branch continues to maintain an excessive influence (Álvarez Tovar 2013), blocking the development of an independent and professional system of public administration (Hernández 2017). The fact that almost all of the State's financial resources come from the Federal government also generates dependence. Corruption abound (Kaufmann et al. 2010), with high levels of mistrust from citizens towards politicians and the political system more generally (Transparency International 2016).

Quintana Roo can be conceptualized as a social-ecological system. A distinctive topographical, geo-hydrological and biophysical characteristic makes up the Yucatan Peninsula (Lutz et al. 2000). The Peninsula's karst aquifer is one of the most extensive in the world and extends in a transboundary manner over an extensive area in Mexico, Guatemala and Belize. The karst aquifer hosts large amounts of spring-fed groundwater which maintain highly diverse groundwater-dependent ecosystems. The karstic limestone has produced a network of underground rivers and sinkholes (*cenotes*) that

provide the only sources of freshwater in the Peninsula. The ecosystem also includes significant wetlands, one of the most important of which is the Sian Ka'an Biosphere Reserve. The CZ also encompasses an ecologically rich ecosystem of mangroves, seagrass meadows and the extensive 600-km-long Mesoamerican coral reef that extends along the mainland coast and around the Island of Cozumel. The reef provides important ecosystem services for coastal populations, protects the coast from erosion, moderates the damaging effects of hurricanes, sustains subsistence and commercial fisheries, supplies sand for beaches that is critical for the tourism industry, and generate recreational opportunities (Melbourne-Thomas et al. 2011). However, high permeability in the karst system means that pollution can spread over large distances, making water management very challenging (Bauer-Gottwein et al. 2011).

Quintana Roo also forms part of the Selva Maya (Maya Forest), which is the last large block of tropical forest remaining in North and Central America (Primack et al. 1998). For centuries, the area has seen the harvest of quality timbers, such as Spanish cedar (*Cedrela odorata*) and mahogany (*Swietenia macrophylla*). During the 20th Century, the extraction of precious woods first took place as part of a state concession (*Maderas Industriales de Quintana Roo*) and later through community management (*Plan Piloto Forestal*). Although results are mixed, community forest management tends to result in maintenance of forest cover and of biodiversity, and promotes local wellbeing (Arts and de Koning 2017; Primack et al. 1998). The *milpa* cultivation system has also helped maintain ecological diversity (Ellis et al. 2017). However, although there are differences between ejidos, the ejido system in Mexico has suffered from a narrow production, low wages, under-employment, low standard of living, and where, at times, corruption is combined with high dependency on state agencies for capital subsidies resulting in high levels of indebtedness (Climo 1978; Perramond 2008; World

Bank 2001). As a result, many ejidos within Quintana Roo are now seeking new forms of economic activity, such as ecotourism, and new ways to protect the ecological diversity within the system, for example, through reforestation. Nevertheless, substantial deforestation continues within the State, arising largely from land-take for tourism and urban development (Ellis et al. 2017).

Governance of the Quintana Roo Social-Ecological System

Governance Challenges

During the last decades, demographic growth has been triggered by a rapid expansion of the tourism sector, and sees the population of the State predicted to reach 2 million by 2025, from 500,000 in 1990. Tourist resorts are highly concentrated in the coast, from Cancún to Tulum, an area now known as the Riviera Maya, and on Cozumel Island. In recent years, coastal development has rapidly extending southward to Bacalar, Mahahual and Xcalak. The State has experienced a growth in hotel rooms of more than 800% during the period 1980-2015 (Poter-Bolland et al. 2015). Much of this rapid urbanization and tourism infrastructural development has been piecemeal, as one public official explains:

Coastal development is not planned, does not follow an integral plan, does not follow a high-level strategic program, it follows the POEs (Ecological Planning Programs), and perhaps the PDUs (Urban Development Programs), but it does not conceive an integral vision of the state, much less of the region (Officer A, Federal Government Environmental Sector).

Thus, as in other CZ, the system in Quintana Roo is experiencing pressures from inward migration, economic development (mainly tourism) and resource exploitation. As a result, the system is showing signs of intense environmental pressures. Environmental degradation is now being experienced in many municipalities, including water pollution

from untreated waste water and sewage, increased sedimentation in the marine ecosystem, and growing problems of waste management, especially in the municipalities of Benito Juárez and Solidaridad, where the cities of Cancún and Playa del Carmen, the main tourist sites, are located. Threats to ground water are particular acute in the Riviera Maya coastal district. Large parts of the karst aquifer are now affected by anthropogenic pollution (Bauer-Gottwein et al. 2011).

Given the tightly coupled nature of the system, all the more pronounced because of its karst characteristics, land use and land use changes inland have had a direct impact on the marine ecosystem, including through coastal sedimentation and nutrient loading, with consequences for marine functioning and productivity on the coast (Bray et al. 2004). The construction and operation of hotels close to the coast have, in particular, brought negative impact on the crucially important Mesoamerican coral reef system (Murray 2007).

The environment division of the State government of Quintana Roo is aware of this problem:

We have a problem with deforestation due to the growth of the agricultural-livestock frontier and due to urbanization, particularly in the coast. The urbanization of the coast alters ecosystems, such as mangroves, coastal areas; tourism development also affects the reef ... and the marine ecosystem. Also, the management of solid waste is a very important problem... all kinds of pollution (Officer A, State Government Environmental Sector).

This understanding is also shared by environmental groups, including the very active *Healthy Reefs for Healthy People*, a Smithsonian partnership that aims to improve the health of the Mesoamerican Reef and thus sustain the lives of those who depend on it:

Our biggest threats are the inadequate wastewater treatment ... and right now, solid waste management (Interviewee D, ENGO).

298 The failure to ensure connection to the sewage system in the fast growing urban areas is
299 of particular concern:

300 The National Water Commission, together with the State of Quintana Roo, has
301 created the basic infrastructure, such as treatment plants, sewage mains, the entire
302 sanitation system; however, we have places like Playa del Carmen and Tulum itself
303 where they have the infrastructure, but people are not connected to the sewage
304 (Officer A, Federal Government Water Commission).

305 An interviewee from the local government pointed out that in Tulum, which is a major
306 tourist area, only 15% of the population are connected to the drainage system, and the
307 rest uses septic tanks (Officer C, Municipal Government Environmental Sector).

308 The impact of water pollution on the marine environment, in particular on the
309 Mesoamerican reef has drawn a lot of attention:

310 One of the main threats, not only for Mexico but for the whole Mesoamerican reef
311 is the macro algae cover because is increasing. From 2006 to 2014, it doubled, it's
312 a lot. And that's because we don't have the appropriate waste water treatment in
313 our municipalities, so we are fertilizing the water with all this... poop! that's the
314 truth! Yeah, and that's nutrients for the macro algae to grow, overcome the coral
315 cover (Interviewee D, ENGO).

316 Informants, although at times reluctant to go into specific detail, were keenly aware of
317 limitations of the system governance in the State. As one representative from a key BIA
318 dealing with tourism explained:

319 I think the biggest challenge is the government. When you talk with them, you can
320 see very easily that they don't necessarily have that position because they have the
321 skill to have the position. Because our reality in Mexico is that you get the
322 government positions because you are friend, or you are in the same political Party
323 or you have an... election commitment and sometimes, they don't do things
324 because they don't know how to do it, so we need to find out how we can train
325 ourselves as a society (Representative F, BIA Tourist Sector).

326 High levels of corruption helped fuel the rapid tourism development in the State,
327 particular along the coastal strip of the Riviera Maya:

328 Some of the constructions that are built along the coastline, like hotels and
329 restaurants, don't have all the requirements that are stipulated in the law, so there's
330 corruption because they [governmental officials] let them build as they want,
331 where they want, whenever they want, with whatever they find. It's a well-known
332 fact that hotels, well not all, I will not generalize but some of them, already have in
333 their budget a specific amount for fines, because they already know they are not
334 going to accomplish what is supposed to be, so they already have money line to
335 pay for that (Interviewee D, ENGO).

336 Similarly, a spokesperson for one of the ENGOs operating in the area reveals:

337 For example, we know that our last Governor [R. Borge] sold land that had a level
338 of environmental protection, and he sold the land to a family member (Interviewee
339 D, ENGO).

340 It is not difficult to see how this political context makes it very challenging to
341 effectively govern the environmental - and social - consequences of development, not
342 least because the system of governance has displayed limited regard for the common
343 good. However, since the early 1980s, pressures for democratization, economic crisis
344 and the implementation of market-oriented economic reforms encouraged moves
345 towards decentralization reforms. This has brought a strengthening of Mexican
346 federalism, which have increased the competencies and capacities of states and
347 municipalities (Cabrero Mendoza 2010). These reforms have transferred, in part, power
348 downwards, including in environmental policy. Today, sub-national political actors,
349 particularly governors and mayors, have access and control over important resources to
350 provide public services. However, key aspects of decentralization, in particular the
351 establishment of effective mechanisms to make public officials accountable and the
352 enhancement of fiscal decentralization, have not occurred. In this sense, it can be argued

that the decentralization process in Mexico has been shaped by the interests of the political elite at the national level. In other words, decentralization served to strengthen the capacity of sub-national political actors to insert their interests into national politics. The local elites and *caciques* (local political ‘boss’ or leader) were able to take advantage of the decentralization not only to gain more political and economic power, but also to exercise impunity and corruption without federal controls (Nieto 2011). Furthermore, this has meant that resources are not allocated according to the interests of the citizens, which is one of the stated goals of decentralization (Salazar 2007). This concern about the failure to take account of the social needs of local people was clearly expressed by one CSO operating from Cancún:

We recently sent an urgent alert to the UN reporter on human rights of water and sanitation because of the lack of sanitation for local communities, bearing in mind that the government is expecting a lot of visitors from overseas and nationals as well but they are not taking into account that we don't have enough infrastructure in order to attend to the needs of the communities that are already living here (Interviewee N, Environmental CSO).

These factors also help to provide an explanation as to why legislation dealing with critical environmental stresses in Quintana Roo is often not adapted or made specific to the local context or to the geo-topographical specificity of the area. This is especially noticeable in the case of water management, including wastewater treatment, where a reoccurring theme from the research is the failure of centralized legislation to take account of the geologically specific feature of the Yucatan Peninsula karst aquifer system.

We have a Norm [standard]... that tells you about the quality of the water, how it should be. ... but there is no investment to change the law, to improve the law and to apply a different norm for the state of Quintana Roo which has different

379 conditions than the rest of Mexico because ... here we have a karstic system, so all
380 our rivers are underground rivers (Interviewee D, ENGO).

381 In addition, waste management that relies upon landfills are particularly problematic in
382 this high permeability karstic area. In this system, pollution stress on groundwater
383 resources threatens both water supply and the entire groundwater-dependent ecosystem
384 (Bauer-Gottwein et al. 2011).

385 The devolution of administrative responsibilities downwards without the
386 corresponding strengthening of the system of administrative oversight and
387 accountability have heighten weaknesses in vertical and horizontal integration between
388 the levels of government within the country's multi-level governance system. Such
389 fragmentation across governance levels has had a negative impact upon policy
390 implementation and enforcement. As one representative from an association of dive
391 operators said:

392 The operations of the water sports businesses are overseen by the three different
393 governmental levels of control (federal, state, municipal). The diving shops are
394 located inland, under the jurisdiction of the municipality, but some of the "rules"
395 related with crossing to the beach and going into the ocean are under the state
396 control; and as soon as you go into the water, it becomes a coastal federal control
397 matter, because in Mexico, all public waters are under federal jurisdiction. So, we
398 have to be nice with all of them, at the same time, and that's a problem because if
399 we have an issue, sometimes they just leave the ball in the other court
400 (Representative F, Association of Dive Operators).

401 Corruption can mingle with institutional fragmentation to make for a very complex
402 context in which to seek to ensure appropriate governance of the system. A CSO
403 concerned with the application of the rule of environmental law in Mexico explains how
404 the two problems can intertwine:

405 For example, have heard about “The RIU” Hotels? [RIU Hotels & Resorts, a
406 Spanish hotel chain] they came here probably 10 or 15 years ago and they start
407 building without permission, building big hotels. You can find probably 5 RIUs all
408 over Cancún. Some of them were built without permission; they built more rooms
409 than those allowed, and they have more floors. The thing was that the municipal
410 government provide the permit to build a hotel, even though they were not allowed
411 to give that kind of permits because the coast is of federal jurisdiction and it should
412 be a federal permit. So, things like that happen (Interviewee N, Environmental
413 CSO).

414 Again, the interactions within the system of public administration are visible, as
415 corruption feeds into the problem of capacity shortfall, especially noticeable in relation
416 to the way in which public offices are filled. As a member of one CSO detailed:

417 High level public officers don’t have the capacity or the abilities or the
418 qualifications to be in that position. This is corruption of course because if you
419 review the authorizations to permits, you realized that they don’t even consider the
420 basic requirements according to the law. They are in that position because they are
421 from the same political party of a very high-level officer, or because they are
422 relatives, or friends. That happens all the time and we have seen also that this is an
423 issue of lack of accountability... (Interviewee D, Environmental CSO).

424 In short, the State of Quintana Roo is struggling to address the environmental
425 consequences of the rapid economic change that it has experienced in recent times,
426 change that have seen demographic, economic and social shifts, and which have
427 brought considerable stress on the highly vulnerable ecological system of the region.
428 Environmental degradation has been documented over the last decades: coral reef
429 degradation (Almada-Villela et al. 2002; Gardner et al. 2003), as well as macroalgae
430 proliferation due to nutrient pollution from inadequate sewage treatment and coastal
431 development (Mcfield et al. 2018), are some of the more critical impacts on the marine
432 ecosystem. Also, habitat destruction and mangrove cover decline are occurring at local
433 and regional scales due to land-use change driven by growing coastal urbanization (Ellis

et al. 2017; Brenner et al. 2018). Hardly any government agency has the capacity to manage the public services for a State with the highest population growth in Latin America (Boggio Vázquez 2008). But, in the case of Quintana Roo, these environmental management problems are made all the more difficult by a system of governance that is highly centralized at the Federal level and whose deep corruption plays out at the local, place-based scale.

At least two decades ago, the Federal Government recognized the potential for corrupt practices in Quintana Roo around large tourism developments. This is seen, for example, in statements made by the then Environment Secretary that public officials must act within the law when giving construction permits, and that hotels investors must also fact legal consequences if they start building without the required permit (May and Guillén 2003; Proceso 2004). However, despite these pronouncements, there has been limited progress to date in ensuring the application of the law and in instilling good governance practices into planning decisions (Morris 2018).

Having detailed the environmental challenges of the State, attention is now turned to how and in what ways these challenges are being addressed.

Hybrid Governance Arrangements

It is in the context of the inability and even unwillingness of the State to address environmental degradation that private, local non-state actors have begun to mobilize. These include CSOs, ENGOs, SMEs and BIAs. These actors have begun to play an important role in the governance of the environment in Quintana Roo. The role played by private investors in changing land-use and environmental planning in order to facilitate the development of the tourism sector in the coast of Quintana Roo has been well documented (Manuel-Navarrete and Pelling 2015). Furthermore, BIAs, including Chambers of Commerce, have exhibited strong capacity to shape economic policy in the

region, especially through lobbying (Boggio Vázquez 2008). However, our research paints a more complex picture than one that simply displays local business interests as merely being at odds with environmental protection and regulation.

In part, the engagement of local private actors is driven by a reactive response to the growing threats caused by pollution, in particular in the marine environment. BIAs linked to the tourism sector have developed in the area primarily to represent the interests of the sector, such as providing commercial, financial and legal advice to their members. They have also become an important provider of professional training for employees in the sector. Business self-interest thus plays a key role in the organizations' mobilization on environmental issues, as is evidenced by the following comment:

If we work trying to get a sustainable destination, we are working on having our business. A better business. Because if we finish our resources, human resources, economic resources, natural resources, we're not going to have any more business. We're going to go broke (Representative G, BIA Tourist Sector).

Similarly, the need to protect the environmental resource base of economic (tourism) activity is reflected in the comment made by an association dealing with coastal and marine tourism:

... we need to protect the ecosystems we are using to do our activities... because we need to have healthy places to offer to people in the water sports sector (Representative F, Association of Dive Operators).

There are strong echoes here of an ecological modernization agenda, which stress the synergy between environmental protection and economic growth. In this view, actions to protect the environment can protect businesses, including through cost reductions that, in turn, improve profitability (Baker 2015). This is presented rather starkly by one of the main hotelier associations in the State:

484 ... I'm going to teach you how to save water because you're going to save money,
485 it's going to be good for your finance and you're going to take care of the
486 environment. So, we started working for the first two years with 12 hotels, and the
487 third year we started working with 100 hotels (Representative G, BIA Tourist
488 Sector).

489 Over time, this action can become significant, particularly at a place-based scale,
490 not only in mobilizing new environmental advocates but also in improving
491 environmental management:

492 We changed our speech and said hey, we're going to take care of the environment
493 but also, you're going to save energy, water and gas, diesel, and you're going to
494 recycle, - you are throwing your money to the garbage, literally, because you're not
495 recycling, so we reached them with the economic part, and then their eyes shine -
496 oh that's very good! I like that. And we reach them like that, so I think that was
497 how hotels are working in the environmental management system in an area; I
498 think that it's a huge achievement (Representative G, BIA Tourist Sector).

499 It is here that we see a move from re-active to more proactive engagement, which shifts
500 actions beyond the *ad hoc* to a more considered intervention. Consistent with its role as
501 an organization formed to provide institutional support to its members, the above
502 mentioned hotelier association explains:

503 We provide the guidance for the hotels to implement good practices in the hotels,
504 using a framework of management system for sustainability in the hotels operation
505 (Representative G, BIA Tourist Sector)

506 The informant goes on to clarify the significance of these good practice guides:

507 So, even if these documents are not mandatory, for the law in Mexico, inside the
508 association ... we take it as mandatory for our members (Representative F,
509 Association of Dive Operators).

510 In relation to these guidelines, transfer of good practice has also occurred beyond the
511 local membership, outwards in a transboundary manner:

512 We have a good practices booklet for the operations in the Mesoamerican reef. We
513 work together in workshops with people from Honduras, Belize and Guatemala,
514 the four countries share the Mesoamerican reef, and we got the good practices for
515 diving, snorkeling and for boat operations (Representative F, Association of Dive
516 Operators).

517 Even more significantly, institutionalization embed members in a global system of
518 private governance:

519 We started with this vision, then we moved to promote the GSTC¹, the criteria [of]
520 global sustainability and promoting best practices, mainly for hotel operations.
521 What we try to do is to implement a management system based on these criteria ...
522 in order to manage the sustainability in the hotels (Representative G, BIA Tourist
523 Sector). (Footnote 1)

524 This provides an excellent example of the rise of private governance and the resulting
525 variety of norm and rule systems, from reporting schemes to certification and
526 environmental management standards, which they endorse. As mentioned in the
527 opening sections of this paper, this form of private governance goes beyond mere co-
528 operation, as it involves rule implementation by private actors (Pattberg 2005). Our data
529 also suggests that, while several of the associations have introduced voluntary codes of
530 practice to govern the environmental behavior of their member's economic operations,
531 they are also concerned to promote better *public* regulation of such activity. While this
532 can be driven by fear that some operators gain competitive advantage by not having to
533 abide by such codes of practice, a logic of collective action well researched by Ostrom
534 (2009), this desire for government regulation is also of deeper significance. It shows
535 that the argument that private self-regulation merely provides an *alternative* response to

536 the lack of effective norms and rules by the state is insufficient, because here private
537 governance co-mingles with a push for public governance, creating complex forms.

538 Speaking about this Association's efforts, for example, to control diving with
539 Bull Shark, an increasingly popular tourist activity that is strongly promoted in Playa
540 del Carmen, but raises several concerns related to altering the feeding pattern of sharks
541 and, by encouraging them to congregate at the same site, increases the risk of shark kills
542 by fishers, our informant explains:

543 We have got good practices, for diving with the sharks. It's not mandatory. We are
544 looking for ... the government to support and put in the law rules or something to
545 go mandatory (Representative F, Association of Dive Operators).

546 Similarly, a hotelier association reveals:

547 And we are also working on trying to enhance the water quality legislation for the
548 karstic system, so that's what we are doing with the NGOs and with Healthy Reefs,
549 we have a collaboration agreement signed (Representative G, BIA Tourist Sector).

550 Working within the system of public administration, one informant from a dive operator
551 association explains to us that this often involves sharing experience and expertise,
552 especially in relation to rule making:

553 We work together, with the three different levels [of public administration], and we
554 are participating with them, we try to help them when they are looking for new
555 rules ... and we offer our experience and, yeah, our support ... we work with them
556 and we keep the goal to be nice with the municipality and the federation
557 (Representative F, Association of Dive Operators).

558 While the desire for a level play field may motivate this request for a regulatory
559 framework to govern such dives, and involvement in rule making may also be driven by
560 a desire to ensure that any new regulations align with their interest, it would be cynical,
561 and indeed unjustified by our data to suggest that this regulatory push by BIAs is

562 motivated only by narrow self-interest. Our data also shows that BIAs are concerned to
563 ensure sustainable tourism more broadly understood, through practices that take account
564 not only of economic, but also the social and cultural dimensions of development. As
565 the representative from the hotelier association argues:

566 ... now, we're talking to have a destination management office, that includes all
567 the vision of ... sustainable development, working on the culture... to set up an
568 organization that could manage the tourism, but with the destination vision that
569 includes economic, environmental, culture, but also having the responsibility to
570 work together to have a plan (Representative G, BIA Tourist Sector).

571 Here there is also the sense that private governance is motivated by moral
572 concerns, including the desire to provide voluntary 'beyond compliance' regulation.
573 This can be driven by a sense of responsibility as it is by economic self-interest:

574 ... going into multi-interest meetings with the government, other private sectors
575 organizations and working together ... some of the damage in the reefs, in the
576 cenotes are because of the diving operations. So we work on that and we try to
577 present a different face, telling them we are maybe more concerned to protect that,
578 because we work every day in that site, so we are not damaging the areas, we are
579 trying to protect them, and that's why we are participating in this kind of initiatives
580 (Representative F, Association of Dive Operators).

581 The mutual nature of the relationship between public and private sector actors is
582 also clear, especially the instrumental value that such collaboration brings to public
583 administrators, including in the area of capacity enhancement, especially for
584 implementation and enforcement. Speaking about their relationship with public
585 officials, one of the associations dealing with dive operations explains:

586 They recognize our position, our participation. The people recognize us inside the
587 government, the other private sectors do the same. They invite us, because they
588 recognize [us] the people that is in the municipality right now, ... we have

589 worked with them for a long time ago, so it's easy for us to go and discuss the
590 different topics and they ask us to participate in different projects and studies.
591 (Representative F, Association of Dive Operators).

592 Giving an example, the informant goes on:

593 we have worked recently in the declaration of a Biosphere Reserve in the
594 Mexican Caribbean ... and we really fought to get the Biosphere Reserve closer to
595 our coast ... also to protect the coral formations in front of Playa del Carmen,
596 which even if it's not a continuous barrier, there are still coral around
597 (Representative G, BIA Tourist Sector).

598 Network operate both vertically – upwards through the system of public administration,
599 but also outwards to other groups and actors operating in the area. Several interviewees
600 from BIAs pointed out that they are increasingly working with environmental NGOs.

601 One association provided an example of their work:

602 For example, with Amigos de Sian Ka'an, we've worked together for more than 10
603 years, to plan the Marine Protected Area project for the Riviera Maya. We did the
604 workshops, we invited the fishermen, the government, the National Commission of
605 Protected Areas... (Representative F, Association of Dive Operators).

606 In some cases, collaborative agreements have been signed between BIA and ENGOs.
607 For their part, ENGO have, as expected, themselves form relationships with government
608 offices. Speaking of this, one ENGO representative explains how this can also extend to
609 offices sharing information with them:

610 the National Commission of Protected Areas, CONANP, we work a lot with them,
611 they provide some of the data, depending on how much they did about monitoring,
612 (Interviewee D, ENGO).

613 In turn, the ENGOs reciprocate, particular in relation to training for monitoring of
614 environmental quality and in relation to regulatory compliance:

615 we also give a lot of training to check [monitor] on the reef, so we do the training
616 every two years to increase the number of people that are certified to check
617 (Interviewee D, ENGO).

618 In addition, ENGOs play a key role in data collection:

619 We do the monitoring [Eco-Audits of marine and reef health] in all the cities,
620 Cancún, Puerto Morelos, Playa del Carmen, Mahahual, Xcalac, Cozumel, Akumal,
621 that's pretty much all the coast (Interviewee D, ENGO).

622 The results of the eco-audits are widely shared. These reciprocal arrangements help
623 capacity building within the governance system overall, better supporting efforts to
624 address environmental degradation. However, the relationship between agents and
625 actors can nonetheless be complex, and many expressed their frustration with the slow
626 pace of response and reform from government agencies. As one ENGO laments:

627 For example, about improving the wastewater management, we have been asking
628 for that for five years and it's not in their priorities. It's recognized, the problem is
629 recognized, but there's no money or... financial aid to improve that part, [we] want
630 to see the changes needed very fast and sometimes they don't... (Interviewee D,
631 ENGO).

632 Such frustration can bolster their own private efforts. Nevertheless, most of networking
633 arrangements between private and public actors have, over time, become stronger. This
634 thickening of the networks between public and local private actors add stability to
635 collaboration, provides a means of strengthening input legitimacy for public policy, that
636 is, it helps to better ensure that decisions are made in a way that involves those being
637 governed (Scharf 2003). It also strengthens environmental governance, including
638 through capacity enhancement especially for problem solving (Baker and Chapin 2018).
639 The thickening can bring positive environmental outcomes:

For example, in Puerto Morelos, in Limones, we have 30% coral cover of Acropora, which is one of the most threatened species and it builds the reef. So that site was protected like two or three years ago, because it is so special, because they used to fish there and also do snorkeling activities, because it's very shallow, so it was used for that. Now, with all the data from CONANP, UNAM, and Healthy Reefs, CONANP realized that they have to protect it, so no fishing... nothing is allowed there, only research with a special permit, it's like the crown of Quintana Roo (Interviewee D, ENGO).

Conclusion

This paper explored the governance of complex, adaptive SES systems, focusing on the challenges of governance as new and rapid forms of economic development disrupts existing patterns of relationships within that system. It examined whether hybrid modes of governance can promote sustainability within the context of such dynamics. The paper provided an empirical study of the role of hybrid, public and private actor engagement in the State of Quintana Roo, Mexico. It detailed the motivations of private actors and asked if and how such hybrid governance enhances governing capacity, or governmentality, and the consequences of this for sustainability.

From the opening discussion we recall that the literature has identified key conditions that are critical for the governance of socio-ecological systems as: (1) flexibility in institutions to deal with changes, (2) openness of institutions so as to provide for broad participation, not least in local decision-making and administration, (3) effectiveness of multilevel governance, (4) social structures that promote learning and adaptability without limiting the options for future development.

The paper has addressed each of these conditions. Turning in particular to the conditions of openness and participation (2), the paper has identified the factors that motivate local, private actors to co-mingle with government authorities, and the willingness of such authorities to open up and reciprocate. The study has shown the

667 multiplicity of factors that motivate private actor mobilization, and that, while driven by
668 economic self-interest, wider ethical concerns and a sense of moral obligation motivated
669 by place attachment also mobilized these actors to engage in environmental protection.
670 The resultant multi-actor initiatives were shown to constitute genuine attempts to build
671 and improve upon the limits of State responses to environmental threats.

672 In relation to private, economic actors, we have shown evidence of self-
673 interested engagement in environmental governance, including in relation to rule
674 implementation, such as through voluntary codes of conduct, motivated by a desire to
675 protect the ecological recourse base of their businesses. These findings resonate with the
676 current literature that contends that multi-actor governance has considerable effects
677 through the imposition of voluntary environmental rules and standards; but we have
678 also shown that the thick relationships that have developed between the actors allows
679 for norm transfer. Networks have been shown to provide the conduits through which
680 learning (4) can take place. This helps to explain, at least in part, the strong normative
681 dimensions to BIA engagement. These networks have also been shown to extend
682 learning into the system of public administration. This not only enhances the
683 governability of the environment but serves to support government in their wider, public
684 functions. Here, hybrid governance offers the potential to contribute to the much-needed
685 institution building for the effective promotion of public goods. For their part, CSO and
686 ENGOs come with an influx of finance, technology, information and other resources
687 that provide data, ecological monitoring, training and evaluations of the 'fit' of
688 regulation for the place-based context that they are designed to govern. Thus, the
689 research has revealed the opportunities that hybrid governance brings, both in terms of
690 instrumental but also normative benefits that can make a positive contribution to dealing

with specific environmental issues and, more generally, to the promotion of sustainability.

We have used the concept of ‘hybrid governance’ as a conceptual lens in this paper to explore the characteristics of SES governance in detail. This concept has enabled us to focus on the motivation for, and consequences of, private actor mobilization to better understand SES governance. While the literature on hybrid authority has, to date, been largely restricted to the examination of hybrid arrangements that involve formal partnerships, this paper has turned its attention to the richness and diversity of forms of *informal* relationship that emerge in practice. Adopting a wider understanding of hybrid governance arrangements has de-centered the focus that has hitherto existed in the literature on the Weberian state, that is, on public organisations and administration and its authority as it extends over various areas of public policy. Shifting attention to the relationships between the state and various other governance actors outside formal institutionalization has proved important, revealing in a new way the capacity of the system to responding to change (1), in this case, to the threat posed by environmental degradation.

In the Mexican context, the origins and rationale for multi-actor governance have to be placed in a political context – one of deep corruption and state failure, and where the system of multi-level governance is ineffective as a mechanism for the promotion of the common good (3). It is tempting to say that in this context, multi-actor mobilization acts as an alternative to condition 3 above, in effect amounting to a by-passing of the authority and involvement of the state. There is always the risk here that their mobilization and engagement results in a zero-sum game, where the state can use private governance as an excuse to retreat from its public obligations and responsibilities. However, our data reveals a more complex picture – where private

actor mobilization also seeks to engage with the state and the Federal authorities. This includes through efforts to enhance and promote better regulations, designed to co-exist with voluntary codes of conduct, to share data and resources, and to improve implementation capacity within the system of public administration.

The paper has provided empirical contribution, generating new data on the governance of coastal zone SES in the state of Quintana Roo, Mexico. The paper has also provided theoretical contribution. It goes beyond the literatures' focus on formal partnerships arrangement, to reveal the practices that exist outside of formal institutionalization. It is important to recognize that hybrid authority can exist through both formal and informal arrangements, not least so as to enable exploration of cases other than those characterized by western models of governance and public administration. Furthermore, while the literature has identified the conditions necessary for the governance of sustainable social-ecological systems, this paper goes beyond to show how these conditions are themselves interrelated and dynamic. These conditions need to be understood not simply as a list of characteristics of system governance, but as a set of conditions that are characterized by their own feedback dynamics. This was seen for example when lack of governance effectiveness (3), in turn stimulates openness (1), participation (2) and learning (4) across the system. It also shows how these conditions play out in context in ways to reveal both the opportunities provided by hybrid governance but also the potential risks involved in hybrid steering.

Footnotes

1. The Global Sustainable Tourism Council (GSTC) establishes and manages global sustainable standards, known as the GSTC Criteria, for the tourism sector. The GSTC Criteria form the foundation for Certification Programs that certify hotels/accommodations, tour operators, and destinations as having sustainable policies and practices.

742

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750 **Authorship contribution statement**

751 All authors contributed to the primary research, data analysis and writing of this article.

752

753 **References**

754 Adger WN. 2000. Social and ecological resilience: are they related. *Prog Hum Geog.*
755 24(3):347–364.

756 Almada-Villela P, Mcfield M, Kramer P, Richards Kramer P, Arias-Gonzalez E. 2002.
757 Status of coral reefs of Mesoamerica-Mexico, Belize, Guatemala, Honduras,
758 Nicaragua, and El Salvador. In: Wilkinson C, editor. Status of coral reefs of the
759 world. Townsville (AU): Australian Institute of Marine Science; p. 303-324.

760 Álvarez Tovar JA. 2013. Why has the transition to democracy led the Mexican
761 presidential system to political instability? A proposal to enhance institutional
762 arrangements. *Mex Law Rev.* 5(2):277-304.

763 Andonova LB. 2010. Public-private partnerships for the Earth: politics and patterns of
764 hybrid authority in the multilateral system. *Global Environ Polit.* 10(2):25-53.

765 Arts B, de Koning J. 2017. Community forest management: an assessment and
 766 explanation of its performance through QCA. *World Dev.* 96:315–325.
 767 Bäckstrand K. 2006. Multi-stakeholder partnerships for sustainable development:
 768 rethinking legitimacy, accountability and effectiveness. *Environ Policy Gov.*
 769 16:290-306.
 770 Baker S. 2015. *Sustainable Development: A new perspective*. London: Routledge.
 771 Baker S, Chapin III FS. 2018. Going beyond “it depends”: the role of context in shaping
 772 participation in natural resource management. *Ecol Soc.* 23(1):20.
 773 Bauer-Gottwein P, Gondwe BRN, Charvet G, Marín LE, Rebolledo-Vieyra M,
 774 Merediz-Alonso G. 2011. Review: the Yucatán Peninsula karst aquifer, Mexico.
 775 *Hydrogeol J.* 19(3):507-524.
 776 Berkes F. 2011. Restoring unity. In: Ommer RE, Perry RI, Cochrane K, Cury P, editors.
 777 *World Fisheries: A Social-Ecological Analysis*. Oxford (UK): Wiley-Blackwell;
 778 p. 9-28.
 779 Binder CR, Hinkel J, Bots PWG, Pahl-Wostl C. 2013. Comparison of frameworks for
 780 analyzing social-ecological systems. *Ecol Soc.* 18(4):26.
 781 Boggio Vázquez J. 2008. Planeación estratégica para el desarrollo: el caso de Quintana
 782 Roo [Strategic planning for development: the case of Quintana Roo]. *Teoría y*
 783 *Praxis.* 5:69-84.
 784 Börzel TA, Risse T. 2002. Public-private partnerships: effective and legitimate tools of
 785 international governance? In: Grande E, Pauly LW editors. *Complex*
 786 *sovereignty: reconstitution of political authority in the 21st century*. Toronto:
 787 University of Toronto Press; p. 195-216

788 Bray DB, Ellis EA, Armijo-Canto N, Beck CT. 2004. The institutional drivers of
789 sustainable landscapes: a case study of the 'Mayan Zone' in Quintana Roo,
790 Mexico. *Land Use Policy*. 21(4):333-346.

791 Brenner L, Engelbauer M, Job H. 2018. Mitigating tourism-driven impacts on
792 mangroves in Cancún and the Riviera Maya, Mexico: an evaluation of
793 conservation policy strategies and environmental planning instruments. *J Coast*
794 *Conserv.* 22(4):755-767.

795 Cabrero Mendoza E. 2010. Gobierno y política local en México: luces y sombras de las
796 reformas descentralizadoras [Local government and politics in Mexico: lights
797 and shadows of decentralizing reforms]. *Política y Sociedad*. 47(3):165-187.

798 Careaga Viliesid L, Higuera Bonfil A. 2011. Historia breve de Quintana Roo [Brief
799 history of Quintana Roo]. Distrito Federal (MX): El Colegio de México/Fondo
800 de Cultura Económica.

801 Climo J. 1978. Collective farming in northern and southern Yucatan, Mexico:
802 ecological and administrative determinants of success and failure. *Am Ethnol*.
803 5(2):191-205.

804 Colona F, Jaffe R. 2016. Hybrid governance arrangements. *Eur J Dev Res*. 28(2):175-
805 183.

806 Dachary A. 1992. Quintana Roo: Los retos del fin de siglo ¿Hacia un desarrollo
807 desigual? [Quintana Roo: The challenges of the end of the century, Towards
808 unequal development?] In Dachary A, Navarro López D, Arnaiz SM editors.
809 Quintana Roo: los retos del fin de siglo. Chetumal (MX): Centro de
810 Investigaciones de Quintana Roo.

811 Ellis EA, Romero Montero JA, Hernandez Gomez IU. 2017. Deforestation processes in
812 the state of Quintana Roo, Mexico: the role of land use and community forestry.
813 Trop Conserv Sc. 10:1-12.

814 Faust BB. 2001. Maya environmental successes and failures in the Yucatan Peninsula.
815 Environ Sc Policy. 4(4-5):153-169.

816 Folke C. 2006. Resilience: The emergence of a perspective for social-ecological
817 systems analyses. Global Environ Chang. 16(3):253-267.

818 Folke C, Carpenter S, Elmqvist T, Gunderson L, Holling CS, Walker B. 2002.
819 Resilience and sustainable development: building adaptive capacity in a world
820 of transformations. Ambio. 31(5):437-440.

821 Gardner TA, Côté IM, Gill JA, Grant A, Watkinson AR. 2003. Long-term region-wide
822 declines in Caribbean corals. Science. 301(5635):958-960.

823 Gerring J. 2007. Case study research: Principles and practices. Cambridge (UK):
824 Cambridge University Press.

825 Glasbergen P. 2007. Setting the scene: the partnership paradigm in the making. In:
826 Glasbergen P, Biermann F, Mol APJ editors. Partnerships, governance and
827 sustainable development: Reflections on theory and practice. Cheltenham (UK):
828 Edward Elgar Publishing; p. 1-25.

829 Hernández G. 2017. El cambio político en Quintana Roo y el riesgo de la persistencia
830 del equilibrio institucional [The political change in Quintana Roo and the risk of
831 the persistence of the institutional balance]. Espiral. 24(70):85-134.

832 Hsieh HF, Shannon SE. 2005. Three approaches to qualitative content analysis.
833 Qualitative Health Research. 15(9):1277-1288.

834 Kaufmann D, Kraay A, Mastruzzi M. 2010. Governance Matters VIII: Governance
835 indicators for 1996 -2008. Working Paper No. 4978. World Bank.

836 Kooiman I. 2003. Governing as governance. London (UK): Sage Publications.

837 Lemos MC, Agrawal A. 2006. Environmental Governance. *Annu Rev Env Resour.*

838 31:297-325.

839 Lutz W, Prieto L, Sanderson WC. 2000. Population, development, and environment on

840 the Yucatan peninsula: from ancient Maya to 2030. Laxenburg (AT):

841 International Institute for Applied Systems Analysis.

842 Manuel-Navarrete D, Pelling M. 2015. Subjectivity and the politics of transformation in

843 response to development and environmental change. *Global Environ Chang.*

844 35:558-569.

845 May J, Guillén G. 2003 Mar 4. Erradicarán corrupción en desarrollos turísticos. *El*

846 *Universal*. [accessed 2020 Jan 6];

847 <https://archivo.eluniversal.com.mx/estados/48624.html>

848 Mayring P. 2000. Qualitative content analysis. *Forum Qualitative Social Research.*

849 1(2):2-00.

850 Mcfield M, Kramer P, Álvarez-Filip L, Drysdale I, Rueda-Flores M, Giró-Petersen A,

851 Soto M. 2018. Report Card for the Mesoamerican Reef. Healthy Reef Initiative.

852 Melbourne-Thomas J, Johnson CR, Perez P, Eustache J, Fulton EA, Cleland D. 2011.

853 Coupling biophysical and socioeconomic models for coral reef systems in

854 Quintana Roo, Mexican Caribbean. *Ecol Soc.* 16(3).

855 Morris S. 2018. Corruption in Mexico: continuity amid change. In: Warf B editor.

856 *Handbook on the Geographies of Corruption*. Cheltenham (UK): Edward Elgar

857 Publishing; p. 132-152

858 Murray G. 2007. Constructing paradise: the impacts of big tourism in the Mexican

859 coastal zone. *Coast Manage.* 35(2-3):339-355.

860 Newell P, Pattberg P, Schroeder H. 2012. Multiactor governance and the environment.
 861 Annu Rev Env Resour. 37:365-87.

862 Nieto N. 2011. Corruption, decentralisation and caciquismo in Mexico in the last
 863 decade. SudHistoria: Revista Digital en Estudios desde el Sur. 3:102-120.

864 Ostrom E. 2009. A general framework for analyzing sustainability of social-ecological
 865 systems. Science. 325(5939):419-422.

866 Paddock J, Baker S, Cullen-Unsworth L, Smith A, Unsworth R. 2018. Coupled Social-
 867 Ecological Systems: Insights from Seagrass Meadows in the Turks and Caicos
 868 Islands. In: Marsden T editor. Sage Handbook of Nature. London: SAGE; p.
 869 392-418

870 Pattberg P. 2005. The institutionalization of private governance: how business and
 871 nonprofit organizations agree on transnational rules. Governance. 18(4):589-
 872 610.

873 Perramond EP. 2008. The rise, fall, and reconfiguration of the Mexican "ejido". Geogr
 874 Rev. 98(3):356-371.

875 Porter-Bolland L, Bonilla-Moheno M, Garcia-Frapolli E, Morteo-Montiel S. 2015.
 876 Forest ecosystems and conservation. In: Islebe GA, Calmé S, León-Cortés J,
 877 Schmook B, editors. Biodiversity and Conservation of the Yucatan Peninsula.
 878 Switzerland: Springer; p.377-398.

879 Primack RB, Bray D, Galletti HA Ponciano I. 1998. Timber, Tourists, and Temples:
 880 Conservation and development in the Maya Forest of Belize, Guatemala, and
 881 Mexico. Washington DC: Island Press.

882 Proceso Redacción. 2004 Ago 22. Cancún, el botín. Proceso [accessed 2020 Jan 6];
 883 <https://www.proceso.com.mx/193037/cancun-el-botin>

884 Rudder CE. 2008. Private governance as public policy: A paradigmatic shift. *J Politics*.
885 70(4):899-913.

886 Salazar JG. 2007. Decentralisation, politics and service delivery in Mexico. *IDS Bulletin*
887 38.

888 Samaniego Santamaría LG. 2010. Historia de las instituciones jurídicas de los estados
889 de la República Mexicana [History of the legal institutions of the states of the
890 Mexican Republic]. CdMx: UNAM/Senado de la República. Quintana Roo
891 historia de las instituciones jurídicas. Colección México.

892 Scharf F. 2003. Problem-solving effectiveness and democratic accountability in the EU.
893 MPIfG Working Paper 03/1. Available at www.mpifg.de

894 Schreier M. 2012. Qualitative content analysis in practice. London (UK): Sage
895 Publications.

896 Transparency International 2017. Corruption Percentage Index 2016. Available online
897 at:[https://www.transparency.org/news/feature/corruption_perceptions_index_20](https://www.transparency.org/news/feature/corruption_perceptions_index_2016#regional)
898 16#regional.

899 Walker B, Salt D. 2006. Resilience Thinking: Sustaining Ecosystems and People in a
900 Changing World. Washington DC: Island Press.

901 World Bank 2001. Mexico Land Policy - A decade after the Ejido Reform, Report No.
902 22187-ME, June 15.