



Governance paradox: implications from Japan's national parks for managing complex protected areas

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Abstract

Herein, we discuss the governance implications for emerging protected areas with complexity in the 2020s by analyzing public–private partnership frameworks in Japan's national parks. First, we summarize previous literature to elucidate the characteristics of Japan's national park management as “weak government” represented by a lack of administrative resources and weak regulatory power. Second, we identify the weak implementation of two legal public–private partnership frameworks from questionnaires and interviews: the Park Management Organization and the Scenic Area Protection Agreement. We discuss the high transaction costs and lack of sufficient benefits to the private sector as the main reasons behind weak implementation. We identify this mismatch as a “governance paradox” and argue that sufficient administrative support and institutional design are indispensable for active partnership implementation.

Keywords Biodiversity · Public–private partnership · Kunming-Montreal Global Biodiversity Framework · Transaction cost · 30 by 30

Introduction

Protected areas (PAs) play a fundamental role in biodiversity conservation (Watson et al. 2014; Maxwell et al. 2020). However, Juffe-Bignoli et al. (2014) argued that protected areas do not sufficiently cover areas of particular importance for biodiversity (only 22–23% are completely covered by PAs), and many terrestrial and marine ecoregions are still poorly represented. Various international efforts are ongoing in this regard. The Aichi Biodiversity Targets adopted at the COP 10 of the Convention of Biological Diversity (CBD) in 2010 included well-known numerical goals: to increase the ratio of protected areas up to 17% of terrestrial and inland water areas and 10% of coastal and marine areas by 2020. In December 2022, the Post-2020 Framework called

“Kunming-Montreal Global Biodiversity Framework” was agreed at the CBD COP 15. The highlight of the framework was the “30 by 30” target: to fully and highly protect at least 30% of the global ocean and 30% of land areas and inland waters by 2030.

Importantly, these targets require the integration of not only wilderness areas but also secondary vegetation, marine, coastal, and even suburban and urban areas into protected areas because many endangered species and ecosystems inhabit these areas “beyond the boundaries” of conventional protected areas (Tanaka 2019). For example, in Japan, more than 50% of the red-list species inhabit secondary vegetation such as paddy fields, coppice land, or grasslands (Ministry of the Environment 2010). Pimm et al. (2018) argued that “prioritiz[ing] the right parts of Earth, not just the total area protected, is what matters for biodiversity.”

However, integrating these biodiverse areas into PAs is often cumbersome because of the complexity of diverse land ownership and overlapping legal systems (Tanaka 2019). Consequently, PA managers face a lack of authority and administrative resources, even if these biodiverse areas are successfully integrated into PA systems. Eagles (2008) stated that “as the world's protected areas estate continues to grow at a high rate; it appears that this growth is financially unsustainable, as current levels of tax-based income

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do not increase accordingly.” Scholars agree that classical conservation models, called “fortress conservation” (Hanna et al. 2008) or “Yellowstone model” (McNeely and Mainka 2009), both similarly referring to the conservation through PAs “owned and managed by government,” will not suffice for the new paradigm posed by biodiversity owing to its complexity and overlapping legal systems. On the other hand, avoiding this complexity and sacrificing the quality of biodiversity for the quantity of PAs to merely achieve the “30 by 30” target would result in biodiversity conservation becoming ineffective and far from successful (De Santo 2013; Borrini-Feyerabend et al. 2013; Díaz et al. 2019).

Other Effective Conservation Measures defined in the CBD (OECMs) have attracted substantial attention, and can contribute to the “30 by 30” target by expanding the scope of PAs into private property and other types of land use besides conservation. The Ministry of the Environment of Japan (2022) showcases private forests, urban parks, rooftop greens, golf courses, and national trust as examples of OECMs and expects them to be one of the main tools to achieve the “30 by 30” target. It is thus indispensable to identify OECMs and provide policy support; however, we should note that the OECM is already an *effective* area for biodiversity conservation. More efforts are required to design and properly manage complex biodiverse areas that are *not* being effectively managed. In this regard, not only the expansion of PAs but also their “governance” should be elaborated for the effectiveness of biodiversity conservation. Specifically, we must focus on the governance of “complex protected areas,” which include diverse land ownership and overlapping institutions to achieve the “30 by 30” target.

Governance of protected areas

While governance is defined in various ways in different fields, we define governance as “the exercise of political and administrative authority in the pursuit of public goods” (United Nations 2012). A widely acknowledged IUCN report, titled *Governance of Protected Areas* (Borrini-Feyerabend et al. 2013), defines governance as “the interactions among structures, processes, and traditions that determine how power and responsibilities are exercised, how decisions are taken, and how citizens or other stakeholders have their say.” This definition is relevant to our scope, but we place more emphasis on the forms of governance for the delivery of public goods.

Different views on what forms of governance are needed to deliver these goods exist in the literature. Some views stress a top-down approach and steering power from central authority. This approach is especially prevalent in the “hollow government” discourse, which criticizes excessive privatization under New Public Management and emphasizes

the role of governments in environmental policies and regulations (Steinzor 2007; Flournoy 2011). In the context of biodiversity conservation, Appleton et al. (2022) argued that the number of PA personnel and rangers is far less than expected to achieve global biodiversity targets, and called for improvements in resourcing. The role of the government is highly expected in transboundary conservation, such as transboundary fisheries, migratory birds, and wildlife trade (Cullis-Suzuki and Pauly 2010; Amano et al. 2018; Borzee et al. 2020).

Others underline the need for more decentralization and delegation of authority outside the government to private actors. In recent years, the governance of PAs has shifted from regulation by central states to polycentric regimes, in which powers are allocated among diverse stakeholders (Lockwood 2010; Borrini-Feyerabend et al. 2013; Ly and Zhang 2019). These shifts in the governance of PAs have been discussed in many terms, including co-management, joint management, public–private partnerships (PPPs), collaborative governance, and adaptive governance (Premauer and Berkes 2015; Borrini-Feyerabend et al. 2013; Novellie et al. 2016; De Koning et al. 2017). Common characteristics observed in previous studies include criticism of top-down, single-level, and/or centralized governance typically seen in conventional PAs. De Koning et al. (2017) argued that collaborative governance has emerged as a response to failures in centralized environmental governance. Olsson et al. (2007) argued that single-level, centralized governance units do not have the variety of response capabilities necessary to deal with complexity. Governance through multiple nested units at differing scales is usually considered to enhance resilience of protected areas and the surrounding communities (Olsson et al. 2007; Ostrom 2010).

As Darcy and Wearing (2009) indicated, PPPs have been advocated as a strategy for the efficient use of government resources and a way to fill capacity gaps in governments for providing public goods. For example, Goldsmith and Eggers (2004) introduced a case of Golden Gate National Recreational Area, a national park system in the United States. The park managers succeeded in raising more than \$34 million from the private sector, which shows the “radical departure” from the conventional hierarchical government bureaucracy to a partner-centric approach. McPadden and Margerum (2014) also discussed collaborative partnerships with the private sector in the US National Trail systems, advocating for the need to assess, form, and develop non-profit partnerships.

Complex protected areas, or biodiverse areas “beyond the boundary” of conventional PAs, will inevitably require partner-centric approaches to reconcile with complex land ownership, overlapping laws and institutions, and vulnerable administrative resources for conservation authority (Eagles 2008; Tanaka 2019). However, failures in partnerships or

collaborative approaches are often observed. Frost and Laing (2018) argued that the failure of the partnership in the Seal Rocks Sea Life Centre in Australia was attributed to the drafting of commercial contracts that prioritized the commercial success of the project over environmental and planning concerns. Allasiw et al. (2017) analyzed the management of communal irrigation systems in the Philippines and argued that user expectations regarding the costs and benefits of state-reinforced self-governance affected its likelihood of success. Additionally, Tanaka et al. (2022) demonstrated the mismatch between the transaction costs and benefits of obtaining certification for sustainable tourism in natural areas.

A possible third view is that sufficient capacity is needed to manage more decentralized approaches, including PPPs. Although PPPs and/or collaborative governance are often commended to reduce the need for administrative capacities and create synergy, we hypothesize that the success or failure of governance depends on those capacities in the public sector; however, there has been limited research demonstrating this paradox.

Considering the surging needs to address the complex situations foreseen to accomplish the “30 by 30” target, we should question how to enhance the PPPs from the perspective of capacity.

Japan’s national parks as a case

We analyzed public–private partnerships in Japan’s national park system. As Tanaka (2019) discussed, the Japanese national park system includes complex land ownership, overlapping laws and institutions, diverse stakeholders, and vulnerable administrative resources, which are considered relevant features for newly established PAs induced by the Post-2020 Framework. Unfortunately, little is known about Japan’s national park system and its partnership schemes because of its complexity and language barriers. Japan’s national park system adopts the *Chiiki-sei* approach, which is often translated as “park management by zoning and regulation” (Hiwasaki 2005).

Unlike those in the United States and Canada, national parks in Japan largely include properties owned by private and other agencies: Forestry Agency (60.2%), private (26%), local governments (12.8%), and the park authority (Ministry of the Environment, Japan; MoE) owns only 0.4% of the national park lands. For example, the land above 3360 m of altitude on Mt. Fuji is privately owned by a shrine (*Supreme Court Decision 1974*). Furthermore, as of 2010, approximately 1.9 million inhabitants were estimated to live “within” the national parks in Japan (Iwasa 2015), constituting the largest population estimated in national parks in the world. Consequently, land use within national parks has

various purposes besides nature conservation, and various laws, institutions, and organizations are involved in park management. This mimics the situation expected when PAs are expanded to conserve more biodiversity for the “30 by 30” target. Thus, the analysis of public–private partnership frameworks in Japan’s national parks will offer important insights into emerging complex PAs.

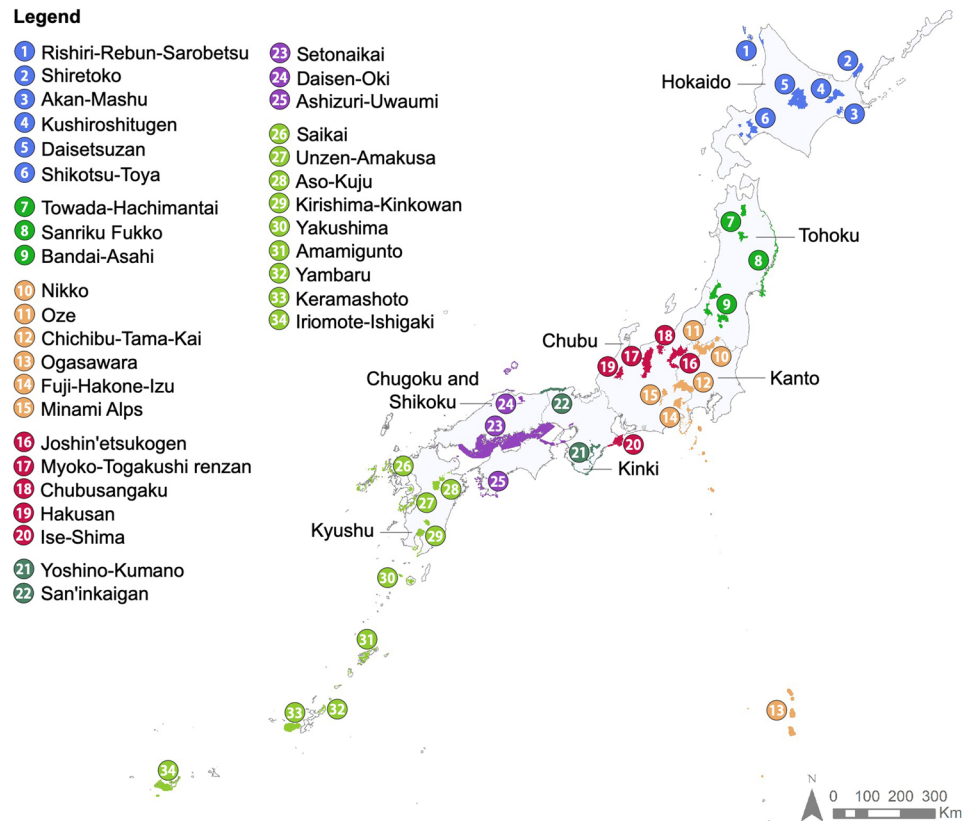
This study consisted of four parts. First, after explaining the methodology in this study, we provide an overview of Japan’s national park system, referring to previous literature, which is mostly written in Japanese. Second, we summarize the legal frameworks for public–private partnerships in Japan’s national park management defined in the *Natural Parks Act*: the Park Management Organization (PMO) and Scenic Area Protection Agreement (SAPA). Third, the PMO and SAPA are analyzed by utilizing questionnaires and follow-up interviews to investigate the details of PMOs, including their historical records, motivations for the designation, and actual on-site implementation. Finally, we discuss the transaction costs and benefits induced by partnership designation through follow-up questionnaires and interviews.

Methodology

This research consists of a thorough literature review, questionnaires to five existing PMOs—Aso Greenstock Foundation, Natural Parks Foundation, Shiretoko Foundation, NPO Asama, and NPO Takidun—and follow-up interviews with representatives of the PMOs. The first questionnaire was distributed to five existing PMOs in October 2018 and all the answers were received by January 2019. Follow-up questionnaires were distributed to five PMOs in January 2022 and all answers were received by March 2022. The first questionnaire included questions regarding basic information of the organizations (number of full-time equivalent staff, annual budget, historical records), main activities related to national park management, reason for applying for PMO status, and incentives to be a PMO, following Tanaka and Wakamatsu (2018). Follow-up questionnaires included the Likert-scale evaluation of transaction costs and benefits obtained from the PMO status. Interviews were conducted face-to-face, via phone, or via email correspondence in the following months for data clarification or elaboration. The reviewed literature includes academic papers as well as magazines, meeting minutes, historical records, and informal documents. Questionnaires and interviews were utilized to obtain original data and informal documents, including meeting minutes and personal correspondence.

In this study, the term “partnership” is used to refer to a type of collaboration that has a more permanent and formalized structure that includes “regular, cross-sectoral interactions over an extended period of time between parties,

Fig. 1 Map of National Parks in Japan (made by the author)



based on agreed rules or norms, intended to address a common issue or to achieve a specific policy goal(s),” following Bramwell and Lane (2000) and Laing et al. (2008). Thus, while “collaboration” is used as a general term for “provid[ing] a flexible and dynamic process that evolves over time, enabling multiple stakeholders to jointly address common problems or issues” (Jamal and Stronza 2008), “partnership” is used as a more formal type of collaboration between parties based on certain contracts or agreements that are relevant to the legal partnership framework discussed in this paper. Collaboration and partnership occur when each stakeholder controls resources such as knowledge, expertise, constituency, and capital, but they are unlikely to possess all the resources necessary to achieve their objectives and plan effectively for problems (Bramwell and Lane 2000).

Results from literature review: weak government, an overview of Japan’s national parks management

As of May 2022, 34 national parks (NPs) covered 5.8% of Japan’s total land area, representing the most scenic and biodiverse areas in Japan (Ministry of the Environment 2019). The establishment of the national park system has been the

most important conservation measure in Japan because of the quantity and quality of the natural environment (Hatakeyama 2008; Kato 2008; Abe and Onodera 2017). The *National Parks Act*, legislated in 1931, succeeded by the *Natural Parks Act* in 1957, was the first national park legislation in Asia, and its aim was to protect the natural landscape and enhance the health and well-being of people.

Japan’s national parks are designated by the Minister of the Environment and administered by the Nature Conservation Bureau, Ministry of the Environment. As shown in Fig. 1, 34 national parks exist throughout Japan, from the northernmost islands in Hokkaido to the southernmost islands in Okinawa, as of May 2022. The oldest NPs were designated in 1934 and the latest in 2017. Table 1 shows the details of each national park in Japan: designated year, area (hectares), population, number of visitors per year, number of ranger stations, number of staff members (ranger), and number of supporting staff members. Each national park has 1–7 outpost ranger stations under the MoE’s Regional Environmental Office. Importantly, individual NPs do not have headquarters or decision-making power, and ranger stations are directed from Regional Environmental Offices (Tanaka 2018). The different colors in Fig. 1 show the jurisdictions of the seven Regional Environmental Offices under the MoE. This governance structure is unique to Japan’s NP management.

Table 1 Overview of National Parks in Japan (blank means no data available as of November 2018)

Number in the map	Regional office	Name of national park	Designation	Area (hectare)	Population within NP	Number of visitors/year ($\times 10,000$)	Number of ranger stations	Number of staffs	Number of supporting rangers (AR)
1	Hokkaido	Rishiri-Rebun-Sarobetsu	1972.9.20	24,166	6107	65	1	1	3
2		Shiretoko	1964.4.1	38,636	393	166	2	3	4
3		Akan-Mashu	1934.12.4	90,481	3841	360	2	5	4
4		Kushiroshitugen	1987.7.31	28,788	3664	46	1	2	2
5		Daisetsuzan	1394.12.4	226,764	885	499	3	3	4
6		Shikotsu-Toya	1949.5.16	99,473	8545	1024	2	2	2
7	Tohoku	Towada-Hachimantai	1936.2.1	85,534	1129	474	3	5	5
8		Sanriku Fukko	1955.5.2	28,537	36,195	252	4	4	4
9		Bandai-Asahi	1950.9.5	186,389	10,332	755	2	2	3
10	Kanto	Nikko	1934.12.4	114,908	33,768	1609	3	5	4
11		Oze	2007.8.30	37,200	677	35	2	2	2
12		Chichibu-Tama-Kai	1950.7.10	126,259	30,467	1268	1	1	1
13		Ogasawara	1972.10.16	6629	37,480	3	1	2	4
14		Fuji-Hakone-Izu	1936.2.1	121,695	2371	12,390	5	7	6
15		Minami Alps	1964.6.1	35,752	183,236	40	1	1	1
16	Chubu	Joshin'etsukogen	1949.9.7	148,194	2487	2616	3	3	3
17		Myoko-Togakushirenzan	2015.3.27	39,772	–	–	2	2	2
18		Chubusangaku	1934.12.4	174,323	487	848	1	4	5
19		Hakusan	1962.11.12	49,900	35	65	1	1	2
20		Ise-Shima	1946.11.20	55,544	113,371	887	1	2	2
21	Kinki	Yoshino-Kumano	1936.2.1	61,406	71,343	752	3	2	4
22		San'in kaigan	1963.7.15	8783	50,112	723	2	2	2
23	Chugoku and Shikoku	Setonaikai	1931.3.16	67,242	1,015,629	4240	7	6	5
24		Daisen-Okii	1936.2.1	35,353	28,403	1341	3	5	6
25		Ashizuri-Uwaumi	1972.11.10	11,345	20,290	145	1	1	1
26	Kyushu	Saikai	1955.3.16	24,646	85,606	478	2	2	2
27		Unzen-Amakusa	1934.3.16	28,279	67,025	650	2	2	2
28		Aso-Kuju	1934.12.4	72,678	52,347	2050	2	5	5
29		Kirishima-Kinkowan	1934.3.16	36,586	31,012	1171	2	3	3
30		Yakushima	2012.3.16	24,566	3732	16	1	2	2
31		Amamigunto	2017.3.7	42,181	–	–	2	4	4
32		Yambaru	2016.9.15	13,622	–	–	1	2	2
33		Keramashoto	2014.3.5	3520	–	20	1	1	2
34		Iriomote-Ishigaki	1972.5.15	40,653	9936	227	2	3	4

*Population within NP is cited from Iwasa (2015). Number of ranger stations, number of staffs and supporting rangers are based on the data obtained from MoE as of November 2018

MoE staff or park rangers are bureaucrats who passed the “national exams for civil servants,” and half are on career tracks to be high ranked officers in the future. Their positions usually change every 2–3 years among ranger stations, regional environmental offices, and MoE headquarters in Tokyo (Tanaka 2018). The Nature Conservation

Bureau consists of five divisions at the headquarters level: Policy Planning, Biodiversity Policy, National Park, Wildlife, and Park Facility/Conservation Technology (as of December 2021). Even career-tracked officials experience site-level ranger stations and spend approximately 10 years outside HQ on average, whereas non-careers spend more

years on-site. A centralized bureaucracy system is one of the key aspects of institutional arrangements in NP management in Japan (Tanaka 2018).

Because 60% of the land area is owned by the Forestry Agency and 26% is privately owned, the main roles of the site-level rangers are planning for park facilities and authorization of construction/development within the national park. Unlike conventional national parks in the US and Canada, they do not usually perform any interpretation, patrolling, or scientific surveys. Interpretation is largely provided by private eco-tour guides and/or park volunteers, whereas scientific surveys are largely outsourced to private consulting companies or research institutions. Patrolling is rarely done by MoE officials but is often complemented by non-regular personnel called “Active Ranger (AR)” and volunteers called Natural Park Advisors (Kato 2008; Tanaka 2018).

According to a document obtained from the MoE, as of November 2018, the number of rangers in each NP was between 1 and 7, while that of non-regular personnel (AR) was between 1 and 6, resulting in 2–13 personnel in total, or six on average in each national park (see Table 1). This number is far below global standards, even when compared with national parks that implement similar land ownership systems, such as those in the UK, the ROK, and Taiwan (Tanaka 2012; Sho and Tanaka 2020). Despite the similarity in land ownership, the UK, ROK, and Taiwan have more robust administrative resources. In Japan, the managerial “weakness” has long been criticized as coming from land ownership; however, Tanaka (2012) demonstrated that the allocation of administrative resources and institutional arrangements are key factors.

Legal authority, for example, has opposite definitions between Japan and the UK. Article 4 of the *Natural Parks Act* in Japan demands the authority to reconcile with public interests such as property rights, mining rights, and national land development policy. This Article is criticized as a “pro-development principle” (Hatakeyama 2008), and conservation policy in Japan had to compromise on many occasions as a result (Itoga 1985; Tanaka 2012, 2016). In contrast, the UK’s national parks system has a “pro-conservation” clause called the *Sandford principle* in the UK *Environmental Act 1995* Article 62 (1):

If it appears that there is a conflict between those purposes, [the National Park Authority] shall attach greater weight to the purpose of conserving and enhancing the natural beauty, wildlife and cultural heritage of the area comprised in the National Park.

The Sandford principle first appeared in 1974 as a recommendation from the National Parks Policy Review Committee, chaired by Lord Sandford. At the time, the National Parks’ authorities in England and Wales needed to conserve wildlife and habitats, but also encourage the public to enjoy

and learn from the countryside. To achieve the right balance between conservation and recreation, the committee’s recommendations were accepted as the basis for park management in England and Wales. The principle was further legislated in *Environment Act 1995* following the report called “Fit For the Future” drafted by the 1991 National Parks Review Panel, which strongly endorsed the importance of the Sandford principle (Clark and Clarke 2011; Snowdonia Society 2017).

On the other hand, the “pro-development principle” remains in Japan’s *Natural Parks Act*. The reasons behind this legal difference have not been well studied in the existing literature; however, disaster risk is considered one possible explanation. Japan is exposed to various natural disasters, such as typhoons, earthquakes, tsunamis, and volcanic eruptions. These scenic/biodiverse areas, or National Parks, often overlap with high-risk areas and usually require certain public works represented by tide walls, revetments, and sand-control dams. Large coastal levees built in *Sanriku Fukko* National Park in the Tohoku region after the Great East Japan earthquake in 2011 are a typical example. From the analysis of Diet Minutes, Tanaka (2016) demonstrated that the Ministry of the Environment, Japan, approved all construction work in scenic National Parks by interpreting Article 4 of the *Act*. The Article is questioned by many scholars as a loophole for heavy construction works, even within national parks (Itoga 1985; Hatakeyama 2008; Tanaka 2016).

Therefore, one of the prominent characteristics of Japan’s NP management is “weak government” represented by a lack of administrative resources and legal power (Tanaka 2012). However, recent studies from a global perspective place more emphasis on the public–private partnership aspects that can complement weak management and/or synergize conservation management (Darcy and Wearing 2009; Borini-Feyerabend et al. 2013). In this regard, the analysis of public–private partnerships should provide further implications for managing complex areas foreseen in the 2020s.

Result from legal reviews: legal frameworks of public–private partnership in Japan

To complement the weak government, Japan’s NP management has historically embedded collaborative approaches (Kato 2008). From the legal analysis, we identified two public–private partnership frameworks in Japan’s NP management: the Park Management Organization (PMO) and Scenic Area Protection Agreement (SAPA), both based on the *Natural Parks Act*.

The Park Management Organization is defined in Articles 49–54 of the *2002 Amendment of Natural Parks Act*. The Minister of the Environment can designate incorporated

foundations, associations, or non-profit organizations (NPO) as PMOs to promote nature conservation and proper use. Article 50 defines expected collaboration as follows: (n.b. translation is taken from the “Japanese Law Translation” website provided by the Ministry of Justice, Japan. Some words were deleted/modified by the authors to avoid redundancy or unclearness)

- (i) Managing natural scenic areas and conducting other activities that contribute to the protection of natural scenic areas based on the Scenic Area Protection Agreement;
- (ii) Repairing and otherwise maintaining and managing facilities within the national park;
- (iii) Collecting and providing information or materials concerning the protection and promotion of the proper use of national parks;
- (iv) Providing necessary advice and guidance concerning the protection and promotion of the proper use of national parks;
- (v) Conducting investigations and research on the protection and promotion of the proper use of national parks; and
- (vi) Conducting operations incidental to the operations listed in the preceding sections.

As specified in Article 50, the PMO is first envisaged as the managing body of the SAPA defined in Articles 43 to 48 of the *Natural Parks Act*, which is also included in the 2002 Amendment. Article 43 (1) states that the MoE or PMO can manage private property by concluding SAPA with landowners. Because 26% of Japan’s national parks are privately owned, SAPA is intended to be the last resort to maintain the landscape and biodiversity of national parks by providing incentives to both land owners and the private sector. The benefit for the landowners is a 20% reduction in inheritance tax valuation, while PMO can have more discretion in their activities to conserve landscape and biodiversity in national parks. However, as of December 2021, only two SAPAs were concluded after 20 years of implementation: *Shimohagi-no-Kusa* area in Aso-Kuju National Park and *Yunomaru Kogen* area in Joshin’etsu Kogen National Park. Importantly, both agreements aimed to protect biodiversity in the private properties that are relevant to the “30 by 30” target; *Shimohagi-no-Kusa* to conserve grassland ecosystems, and *Yunomaru Kogen* to conserve Japanese Azalea and *Aporia hippia japonica Matsumura* (Red-list IB/MoE 2020).

Results from questionnaires and interviews: PMO designation and implementation

As of December 2021, five organizations were designated as PMO in national parks: Aso Greenstock Foundation, Natural Parks Foundation, Shiretoko Foundation, NPO Asama International Outdoors, Nature School (NPO Asama), and NPO Takidun.¹ Three are foundations and two are non-profits. Based on the results from the questionnaires and follow-up interviews, we identified the type and size of PMOs, their implementation activities, motivations for application, and incentives.

Type and size of PMOs/implementing activities

Table 2 presents the results of the questionnaires and interviews. The five existing PMOs were designated between 2003 and 2009 and cover 16 of the 34 NPs. Among the PMOs, the Natural Parks Foundation (NPF) is the national-level foundation, which covers 15 NPs through its 20 branch offices, holding more than 200 staff members and a relatively robust budget. The foundation was established in 1979 based on the recommendation of the Nature Conservation Council of the Environmental Agency, the predecessor of the MoE (Natural Parks Foundation 2018). Since its inception, the NPF has been designed to be a national-level partner for NP management, largely funded by revenues from para-public parking fees in national parks. Revenues from parking fees constituted approximately 55% of the annual budget as of 2017 (Natural Parks Foundation 2018).

NPF also receives approximately 30% of the annual revenue from the MoE for various activities, including management of park facilities such as visitor centers, toilets, and trails (Natural Parks Foundation 2018). NPF has strong ties with the MoE by having the Foundation’s Executive Directors from MoE retirees and by issuing a monthly magazine called *National Parks [Kokuritsu-Kouen]*, which is known as a classic magazine published since 1929, even before the enactment of the *National Parks Act 1931*. The publication of the magazine was succeeded by the historic National Park Association, which was dissolved in 2012. For its history and purpose, NPF has been the key partner for NP management, regardless of the status of the PMO.

The Aso Greenstock Foundation (AGF) and Shiretoko Foundation (SF) are municipal-led foundations that focus on one specific national park aiming to conserve nature and wildlife. The Aso Greenstock Foundation specifically

¹ On December 16, 2021, the sixth PMO was newly designated 12 years after the fifth one.

Table 2 Overviews of Park Management Organizations and implemented activities from 2018 questionnaires

	Aso Greenstock Foundation	Natural Parks Foundation	Shiretoko Foundation	NPO Asama	NPO Takidun
Designated year (date)	2003 (December 2)	2005 (July 14)	2007 (November 15)	2008 (March 11)	2009 (May 27)
National Park (conserving area)	Aso-Kuju NP (Aso Area)	15 NPs (19 areas)	Shiretoko NP (whole area)	Joshin'etsukogen NP (Asama area)	Ishigaki-Iriomote NP (Taketomi Island)
Full-time Equivalent (FTE) staffs related to NP management (whole FTE staffs of the organization in parenthesis)	3.5 (9)	233 (233)	43 (43)	1 (1)	2.5 (5)
Annual budget related to NP management (USD*/whole budget of the organization in parenthesis)	0.58 million (0.85 million)	13 million (13 million)	3 million	20 thousand (100 thousand)	80 thousand (240 thousand)
Activities	SAPA, Visitor Center management	Management of various park facilities, Research and monitoring, park beautification, etc.	Visitor Center management, research and monitoring, etc.	SAPA, Visitor Center management	Visitor Center management, beautification, etc.
Reasons for application	Recommendation from MoE	Recommendation from MoE	Recommendation from MoE	Recommendation from MoE	Recommendation from MoE
Incentives/merits	Not mentioned	No	No	Not very much. Easier to introduce themselves to local governments	Great merits for community developments

*1USD is calculated as 100JPY

focuses on the conservation of grasslands in the Aso-Kuju National Park by organizing controlled burning with volunteers. It was established by the local Co-op and Aso Town Government to address issues of food production in the Aso mountain area. The AGF was founded in 1995 and obtained the first PMO designation in 2003, concluding the first SAPA in 2004. Because the Aso area and AGF were considered as models for PMO and SAPA in the process of legal amendment in 2002, an MoE official attests that it was a natural consequence that AGF obtained the first PMO designation as well as SAPA in the Aso area (interview with the official on November 19, 2018). AGF assumes the management of visitor centers from the MoE and is financially supported by Kumamoto Prefecture and the surrounding municipalities as well as donations from the private sector (Aso Greenstock Foundation 2018). The AGF has 9 FTE staff members in total and 3.5 FTE members working specifically for NP management.

The Shiretoko Foundation is a well-known nature conservation organization in Japan. SF was established in 1988 by Mr. Sakae Gorai, the former Mayor of Shari Town in

Hokkaido Prefecture. Between 1987 and 1988, national-level controversy occurred regarding the large-scale logging by the Forestry Agency in Shiretoko National Park (n.b., 60% of NP is owned by the Forestry Agency in Japan). Mr. Gorai, President of Shiretoko Nature Conservation Association at the time, ran for Mayor of Shari Town, appealing that logging in Shiretoko National Park should be stopped (Tanaka 2014). After winning the election, he soon established what is currently known as the Shiretoko Foundation. Shiretoko has been widely broadcast in various media because of its beautiful nature and World Natural Heritage Status. SF has 43 staff members, making it the most well-staffed conservation organization for site-level foundations, with high expertise, including five PhD and seven master's degree holders as of 2022. The Shiretoko Foundation is involved in a variety of NP management, including the management of park facilities, patrolling, research, and monitoring. SF is often referred to as an ideal partner for NP management in Japan (Yamanaka 2007; Tanaka 2014).

NPO Asama and NPO Takidun are small, local-level, non-profit organizations with fewer than five staff members.

The NPO Asama is a branch organization of Asama Resort Ltd. that runs a ski resort in the Asama Mountains area of Joshin'etsukogen National Park. After the rapid decrease of skiing tourists in the 1990s, Asama Resort needed to diversify its business model, especially during the summer season (Interview with the Executive Director of NPO Asama on March 4, 2018). NPO Asama was funded by a private company called Watanabe Pipe Co., Ltd. This is the parent company of Asama Resort Ltd. Watanabe Pipe established a visitor center in 2008 at their own expense as the hub facility of NPO Asama and obtained PMO status in the same year based on the advice from the MoE, and SAPA status in the following year.

NPO Takidun was established in 2003 to conserve the island's cultural landscape in Taketomi Island in Ishigaki-Iriomote National Park. Takidun's main role in the national park is managing the visitor center and information signs on the island. Unlike other PMOs, the NPO Takidun mainly focuses on the cultural and traditional aspects of the national park. Overall, PMOs support NP management through the management of park facilities (visitor centers, toilets, information signs, and trails), beautification activities, and research and monitoring activities.

Motivations for designation/incentives of designation

Table 2 shows the motivations for the designation. Interestingly, all five PMOs answered similarly that they were "advised" to apply for PMO status from MoE officials. In other words, they did not voluntarily apply for PMO status. In addition, all PMOs answered similarly that there are not many benefits for being a PMO, except for NPO Takidun, who emphasized the great merits. Three PMOs similarly answered that "nothing has changed after the PMO designation because we had already been working in national park(s) for a long time, no matter the status." The Deputy Director of Shiretoko Foundation at the time claimed "I do not see any reason for being PMO for the time being" (Answer in the 2018 Questionnaire). The Executive Directors of NPF, AGF, and NPO Asama (at the time) similarly indicated that "PMO does not offer any incentives or advantages including public open bidding by the MoE" (Interview with the representative of NPF on September 6, 2018; Answer in the Questionnaire from AGF; Interview with the Director of NPO Asama on March 5, 2018). One incentive implied by the representative of NPO Asama is the improved image by having a PMO status, and that it is easier to talk to local governments (Interview with the Executive Director on March 5, 2018). NPO Takidun is exceptional in that they feel there is great merit in the PMO status because public recognition is better for community development (interview with the representative on February 4, 2022).

Table 3 Evaluation of PMO by interviewees obtained from the additional questionnaires

	Transaction cost	Benefit
Aso Green Stock	5	4
Natural Parks Foundation	5	1
Shiretoko Foundation	2	2
NPO Asama	Not available*	4
NPO Takidun	5	5
Average	4.25	3

1 very low, 2 relatively low, 3 neutral, 4 relatively high, 5 very high

*It was not possible to access the person in charge of application at the time for his retirement and age. The data for NPO Asama is excluded from the average

Discussion from additional questionnaire and follow-up interviews: transaction costs behind the vulnerable implementation

After 20 years of implementation, only five PMOs and two SAPAs exist as of 2021. Japan's Ministry of the Environment itself admits that the number of PMOs has not increased as expected (Ministry of the Environment 2022). One prominent theory to explain why some institutional arrangements fail is transaction cost theory (North 1990). Transaction costs are incurred as a result of collecting information, making decisions, formulating rules, monitoring, and enforcement (Paavola and Adger 2005). Theoretically, if transaction costs or similar deficits exceed the benefit, collaboration or partnership is not likely to occur (Menard 1997). Following these frameworks, we hypothesized that the reasons behind the inactive implementation were the mismatch between the transaction costs for obtaining the status and the benefits obtained from the status. We further implemented follow-up questionnaires and interviews with PMOs to subjectively evaluate transaction costs (efforts to obtain information, paperwork for application, communications with stakeholders), and subjective benefits.

Large organizations fully contributing to national park management, such as the Shiretoko Foundation and Natural Parks Foundation, commonly stated a lack of benefit through the designation (see Tables 3 and 5). On the other hand, smaller organizations that partly contribute to park management, such as NPO Asama and NPO Takidun, cited neutral/positive positions. In the follow-up interviews, NPO Takidun stated that they are thankful for having national recognition through the PMO status for their activities (interviews with the representative on February 4, 2022).

The transaction costs to obtain the PMO status are perceived as very high for most organizations, except for the Shiretoko Foundation. We consider that the difference in perception is tied to the size of the organization, the number of branches, and expertise. Smaller organizations have

Table 4 Evaluation of SAPA by PMO representatives obtained from additional questionnaires

	Transaction cost	Benefit
Aso Green Stock	3	3
NPO Asama	5	4
Average	4	3.5

*1 very low, 2 relatively low, 3 neutral, 4 relatively high, 5 very high

fewer human resources and expertise for park management, and the perceived transaction costs increase (AGF, NPO Asama, and NPO Takidun). Although the Natural Parks Foundation has sufficient human resources, the person in charge at the time recalled the difficulty in collecting various hard-copied reports from its 19 branch offices across Japan, including some handwritten reports (interviews with the person in charge on January 31, 2022). The Shiretoko Foundation is the only organization that modestly evaluates transaction costs for PMO applications. We contacted the Director, ex-Director (Director at the time), and staff in charge of park management, but none of them clearly remembered the exact efforts and burdens at the time after 15 years of designation. However, we estimated that the rich human resources compared to those of other PMOs (43 FTE staff members fully engaged in national park management, currently 50 staff members), high expertise (five PhD and seven Master's degree holders), and close relationships with the Ministry of the Environment are the key factors for their modest evaluation.

For SAPAs, benefits were evaluated as modest, but transaction costs were evaluated to be higher (Tables 4 and 5). The representative of NPO Asama at the time highlighted the difficulty of obtaining the necessary seals (signatures) from all stakeholders, while there were few incentives (Interviews with the Director on March 5, 2018). Even for landowners, little incentives exist because scenic areas in national parks are usually classified as “wilderness,” where tax valuation is almost none, regardless of the 20% reduction of inheritance tax valuation.

Because applying for PMO status and the conclusion of SAPA require paperwork, negotiation with stakeholders, collecting necessary seals from all stakeholders, and continual communication with stakeholders, lack of incentives and/or strong support from the public sector can result in vulnerable implementation. On the other hand, MoE officials emphasize that they lack substantial resources to incentivize, operate, and/or support public–private collaboration/partnerships compared to other ministries in Japan that have more robust administrative resources (Interview with an MoE official on November 19, 2018). The overall evaluation of the PMO and SAPA by PMO representatives demonstrates these situations, as shown in Table 5.

Table 5 Overall evaluation of PMO and SAPA

	Transaction cost	Benefit
PMO	High (Score: 4.25)	Modest (Score: 3)
SAPA	High (Score: 4)	Modest (Score: 3.5)

Although we encountered difficulty in accessing the person in charge of the application at the time because it was 13–19 years ago, the results clearly demonstrate the subjective mismatch between the transaction costs to obtain the status and the benefits obtained from the status. Interestingly, questionnaires and qualitative interviews suggest possible improvements on the benefit side, not on the reduction of transaction costs. For example, the person in charge of NPO Takidun emphasizes, “it is very natural to have a variety of paperwork because it is a national scheme based on the Act. We think it is necessary and take it for granted” (Interview on February 4, 2022). The staff of Shiretoko Foundation also mentions that “certain qualifications are necessary to make the status attractive” (Interview on October 12, 2022).

The Directors of the Natural Parks Foundation, NPO Asama and Aso Greenstock, criticized that “PMO status does not provide any incentives. Certain advantages should be given for projects’ open bidding and so forth” (Questionnaires and interviews in 2018). The questionnaire results from the Shiretoko Foundation further request multiple-year contracts because conventional project contracts are usually single-year. Questionnaires also showed the lack of recognition of the status from the general public (questionnaire results from Aso Greenstock, Interviews with NPO Asama). Shiretoko Foundation mentions that car stickers or arm badges should be more visible to the general public (questionnaire results). As suggested by the results of the questionnaires and interviews, the benefits derived from status are perceived as the key for the private sector.

Furthermore, we assume that the transaction costs can be largely reduced by utilizing digital technology, including e-signatures, online meeting systems, and electronic file storage systems. Because digital transformation was promoted in most organizations during COVID-19, the application process can be streamlined according to the necessity for certification by effectively utilizing digital and information technology.

Conclusion: governance implications for the “30 by 30” target

The CBD Post-2020 Biodiversity Framework represented by the “30 by 30” target will accelerate the expansion of “complex protected areas,” which include diverse land ownership, overlapping institutions, and vulnerable authority to

properly “prioritize the right parts of Earth” (Pimm et al. 2018; Tanaka 2019). Conservation authorities will inevitably seek more partner-centric approaches for the efficient use of government resources and synergizing area management (Eagles 2008).

However, from our analysis of Japan’s legal partnership schemes, we identified that these partnership frameworks can fall into a mere façade because of the lack of incentives and high transaction costs induced by various paperwork for the private sector and lack of sufficient initiatives from the public sector. As Bramwell and Lane (2000) argue, collaborative efforts may be under-resourced in relation to requirements for additional staff time, leadership, and administrative resources; therefore, we should not underestimate the resources needed for partnership. From the analysis of questionnaires and interviews, we argue the possible occurrence of a “governance paradox” in the management of protected areas. Public–private partnerships are often discussed and commended to complement/synergize protected area management. However, partnerships are not actively implemented when a mismatch occurs between transaction costs and benefits, as discussed in institutional theory. Tanaka et al. (2022) also demonstrated the mismatch between the transaction costs and benefits of obtaining certification for implementing sustainable tourism in natural areas. Our study further highlights this phenomenon as a barrier for effective public–private partnerships.

As the number of complex protected areas is expected to increase when achieving the “30 by 30” target, those areas “beyond the boundary” of conventional PAs naturally require partnership with private sector and local stakeholders (Hamin 2001; Bell and Stockdale 2015). However, the partnership will not be effectively implemented if these partnership frameworks lack enough incentives for private sector or initiatives from the public sector. We call this situation the “governance paradox” and reiterate the need for appropriate resource allocation and initiatives to make partnerships real and active. The reduction in transaction costs for partnerships through digital transformation and streamlined institutional design will also enhance implementation. Although most PPPs are suggested to fill the capacity gaps, adequate capacity to coordinate different organizations and stakeholders is required. We consider that the CBD Post-2020 Framework represented by the “30 by 30” target is an excellent opportunity to emphasize the necessary resource provision and initiatives, as argued in Appleton et al. (2022). Further elaboration of the sample size and case studies are required to verify the “governance paradox” phenomenon.

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Declarations

Conflict of interest We have no conflicts of interest to declare.

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